Palermo–East Nicolaus 115-kV Transmission Line

Draft Mitigated Negative Declaration and Initial Study

August 2010

Prepared for:

State of California
Public Utilities Commission

Prepared by:

ecology and environment, inc.

This page intentionally left blank

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *GOVERNOR*

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CALIFORNIA 94102-3298

Mitigated Negative Declaration

Pacific Gas & Electric Company's
Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project
No. A.09-02-023

Introduction

Pursuant to California Public Utilities Commission's (CPUC) General Order 131-D, Pacific Gas & Electric Company (PG&E) has filed an application (A. 09-02-023) with the CPUC for a Permit to Construct the Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project (the project). The application, filed on March 2, 2009 and deemed complete on March 27, 2009, included the Proponent's Environmental Assessment (PEA) prepared by PG&E pursuant to Rules 17.1 and 17.3 of CPUC's Rules of Practice and Procedure. In accordance with the CPUC's General Order 131-D, approval of the project must comply with the California Environmental Quality Act (CEQA).

Pursuant to CEQA, the CPUC prepares an Initial Study (IS) for the project to determine whether significant adverse effects on the environment would result from project implementation. The IS uses significance criteria based on the checklist items provided in Appendix G of the CEQA Guidelines as a basis for analysis. If the IS indicates that a significant adverse impact could occur, the CPUC would be required to prepare an Environmental Impact Report.

According to Article 6 (Negative Declaration Process) and Section 15070 (Decision to Prepare a Negative Declaration or Mitigated Negative Declaration) of the CEQA Guidelines, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration (MND) for a project subject to CEQA when:

> *(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or*
>
> *(b) The initial study identifies potentially significant effects, but:*
>
> > *(1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and*
> >
> > *(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.*

Based on the analysis in the IS, it has been determined that all project-related environmental impacts could be reduced to less than significant levels with the incorporation of mitigation measures. Therefore, adoption of an MND will satisfy the requirements of CEQA. The mitigation measures included in this

MND are designed to reduce or eliminate the potentially significant environmental impacts described in the IS.

Project Location, Description, and Purpose

The project route would follow the existing Palermo–East Nicolaus 115-kV Transmission Line between PG&E's Palermo and East Nicolaus substations within unincorporated areas of Butte, Sutter, and Yuba counties, in northern California. The project route would also cross land within the City of Oroville. The project would include the reconductoring of both spans of the double-circuit transmission line with approximately 45 miles of new conductor. To accommodate reconductoring, replacement of the existing lattice steel towers would be required. The existing Milliken towers, originally constructed in the early 1900s, would not support the new conductor because of higher tension loads. The towers would be replaced with a combination of hybrid tubular steel poles, tubular steel poles, and lattice steel poles.

A capacity increase to the system would result from the replacement of existing copper conductor with 1113 All Aluminum conductors for each circuit from the Palermo Substation south to Rio Oso Junction and with either 1113 all-aluminum or 457 steel-supported aluminum cable conductor from Rio Oso Junction to East Nicolaus Substation. The new conductor would enable an increase in the existing rating of the lines and eliminate forecasted line overloads. In addition, a limited number of towers on a single-circuit line, the Palermo–Pease 115-kV Transmission Line, which runs parallel to the Palermo–East Nicolaus 115-kV Transmission Line, would be replaced for consistency with the spans on the Palermo–East Nicolaus 115-kV Transmission Line. Construction would take 12 to 18 months.

Environmental Analysis

The IS was prepared to identify the potential environmental effects resulting from project implementation and evaluate the level of significance of these effects. The IS was based on PG&E's PEA, project site reconnaissance by the CPUC environmental team, and other environmental analyses for the project. Measures to address potentially significant impacts, proposed in PG&E's PEA, are referred to as applicant proposed measures (APMs) and have been incorporated into the analysis presented in the IS. A complete listing of APMs is provided in Table 1.8-15 of the IS.

Based on the analysis presented in the IS, additional mitigation measures are recommended to ensure that project impacts are less than significant. The additional mitigation measures either supplement or supersede the APMs. Implementation of the following mitigation measures (MMs) would avoid potentially significant impacts identified in the IS or reduce them to less than significant levels.

Aesthetics

No mitigation measures were identified in the IS for this resource area.

Agriculture and Forest Resources

No mitigation measures were identified in the IS for this resource area.

Air Quality

No mitigation measures were identified in the IS for this resource area.

Biological Resources

MM BIO-1 Rice field fallowing activities, berm construction and removal, and habitat restoration. The applicant will implement measures to insure the restoration of fallowed fields. Prior to, during, and/or after berm construction and dewatering of potential giant garter snake rice field habitat, the applicant will adhere to measures within the Biological Opinion issued by the US Fish and Wildlife Service and any Incidental Take Permit/Consistency Determination issued by the California Department of Fish and Game.

MM BIO-2: Reduce construction night lighting impacts on sensitive habitats. The applicant will implement measures to insure the reduction of construction night lighting impacts on sensitive habitats and special status wildlife. Exterior night lighting along the project route adjacent to aquatic and riparian habitat will be the lowest illumination allowed for human safety and selectively placed a minimum of 50 feet from those habitats except where workplace safety prevents this minimum distance. All construction night lighting will be shielded with cutoffs and/or shades. Vehicle traffic associated with nighttime project activities will be kept to a minimum volume and 15 mph on all non-public roads to prevent mortality of nocturnal wildlife species.

MM BIO-3: Riparian habitat impact minimization measures. The applicant will implement measures to insure the reduction of construction impacts on riparian habitats. No riparian trees or shrubs will be removed during construction outside of the existing ROW in PG&E-maintained areas unless required by CPUC General Order 95 and applicable safety codes. Herbaceous riparian vegetation will be restored to pre-construction conditions within 30 days of the end of construction. The applicant will contact the DFG prior to construction to determine whether a 1600 Streambed Alteration Agreement is necessary for the project.

MM BIO-4: Adherence to Policy 116-OSCP through Policy 118-OSCP under Goal 7-OSCG of the Yuba County General Plan, provisions for Valley oak. Yuba County policies concerning Valley oak, if these species would be impacted by project activities, shall be followed. Specific mitigation measures should be designated and implemented by the applicant regarding Valley oak to adhere to the following Yuba County policies:

- **Policy 116-OSCP:** Project proponent shall identify and map the location of all Valley oaks within the project area. Identification need not include individual trees where groves of Valley oaks are present, and need not include trees less than 6 inches in diameter at breast height.
- **Policy 117-OSCP:** The following guidelines shall be implemented by the project proponent:
  - During any construction, fill should not be placed within an area which is 1.5 times the distance from the trunk to the dripline (the perimeter of the crown) of Valley oaks and no closer than 10 feet from the trunk. The dripline of the tree should be fenced during grading and construction.
  - Soil compaction, which could damage root systems and interfere with vital gas and nutrient exchanges in the roots, should be prevented by not operating or storing heavy equipment within oak driplines.
  - Excavations around trees should be minimized. Depth of excavations should be the minimum required. Utility lines should be combined in single trenches whenever possible.
  - If roots need to be removed, they should be cut rather than torn and immediately covered with mulch or soil to prevent desiccation.

- Submit a Tree Protection Plan to Yuba County along with grading and erosion control plans when Valley oaks are present [within construction work areas]. The Tree Protection Plan should include a planting replacement program for all Valley oaks removed, including maintenance and monitoring program, and should also show how any snags present on the site would be retained where feasible when they do not pose a threat to public safety.

- **Policy 118-OSCP:** Based on the amount of existing Valley oak canopy area on the project site, the determined amount of canopy must be retained [unless required by CPUC General Order 95 and applicable safety codes].

Cultural Resources

MM CR-1: Paleontological Resources Treatment Plan. Prior to construction, a Paleontological Resources Treatment Plan will be prepared that addresses the treatment of paleontological resources that may be discovered during construction. This Plan, prepared by a qualified paleontologist, will include procedures for paleontological onsite monitoring, significance testing, and data recovery. Paleontological monitor(s) must be present during all ground disturbing activities where the underlying geology has high sensitivity for fossil resources unless the vertical disturbance will not impact the underlying geology or is located in a highly disturbed area as identified by a qualified paleontologist.

Geology and Soils

No mitigation measures were identified in the IS for this resource area.

Greenhouse Gases

No mitigation measures were identified in the IS for this resource area.

Greenhouse Gas Emissions

No mitigation measures were identified in the IS for this resource area.

Hazards and Hazardous Materials

MM HAZ-1: Contaminated Soil and Groundwater Contingency Plan. The applicant shall integrate the proposed sampling protocols described in APM HAZ-2 and APM HAZ-3 into a project construction-specific contingency plan to address potential for unearthing or exposing buried hazardous materials or contamination or shallow contaminated groundwater during construction activities. The plan shall detail the preventive actions that the applicant or its contractor would take to prevent the migration of contaminated soils or other materials offsite and the remedial action that would be undertaken. Site-specific plans should be developed for the areas where there is a high probability of encountering shallow contaminated soil or groundwater within 20 feet of the ground surface and the depth of construction.

Hydrology and Water Quality

No mitigation measures were identified in the IS for this resource area.

Land Use and Planning

No mitigation measures were identified in the IS for this resource area.

Mineral Resources

No mitigation measures were identified in the IS for this resource area.

Noise

No mitigation measures were identified in the IS for this resource area.

Population and Housing

No mitigation measures were identified in the IS for this resource area.

Public Services

No mitigation measures were identified in the IS for this resource area.

Recreation

No mitigation measures were identified in the IS for this resource area.

Transportation and Traffic

MM TRAN-1: Construction Notification. PG&E will provide advance notice to nearby airports, railroads, and schools in the project vicinity regarding construction activities.

Utilities and Service Systems

No mitigation measures were identified in the IS for this resource area.

Mitigation Monitoring, Reporting, and Compliance

A Mitigation Monitoring, Reporting, and Compliance Plan has been prepared to ensure that the mitigation measures presented above and APMs listed in Table 1.8-15 of the IS are properly implemented. The plan is presented in Chapter 5 of the IS.

This page intentionally left blank

Palermo–East Nicolaus 115-kV Transmission Line

Initial Study

August 2010

Prepared for:

State of California
Public Utilities Commission

Prepared by:

ecology and environment, inc.

Table of Contents

1.0 Background Information....................1-1
1.1 Project Title.................... 1-1
1.2 Lead Agency Name and Address.................... 1-1
1.3 Lead Agency Contact Person and Phone Number.................... 1-1
1.4 Project Location.................... 1-1
1.5 Project Sponsor's Name and Address.................... 1-1
1.6 General Plan Designation.................... 1-1
1.7 Zoning.................... 1-1
1.8 Description of the Project.................... 1-2
1.8.1 Project Overview and Location.................... 1-2
1.8.2 Applicant's Purpose and Need.................... 1-2
1.8.3 Project Objectives.................... 1-9
1.8.4 Project Facilities.................... 1-9
1.8.4.1 Transmission Line/Conductors.................... 1-10
1.8.4.2 Poles/Towers.................... 1-10
1.8.4.3 Palermo and East Nicolaus Substations.................... 1-10
1.8.5 Construction.................... 1-32
1.8.5.1 New Structure Installation/Tower Removal.................... 1-34
1.8.5.2 Conductor Replacement.................... 1-35
1.8.5.3 Crossing Structures.................... 1-36
1.8.5.4 Access.................... 1-37
1.8.5.5 Cleanup and Post-Construction Restoration.................... 1-40
1.8.5.6 Construction Workforce and Equipment.................... 1-40
1.8.5.7 Construction Schedule.................... 1-42
1.8.5.8 Nighttime Construction.................... 1-43
1.8.6 Operation and Maintenance.................... 1-43
1.8.7 Project Design Considerations/Applicant Proposed Measures (APMs).................... 1-44
1.9 Surrounding Land Uses and Setting.................... 1-44
1.10 Other Public Agencies Whose Approval is Required.................... 1-58

2.0 Environmental Determination....................2-1
2.1 Environmental Factors Potentially Affected.................... 2-1
2.2 Determination.................... 2-1

3.0 Evaluation of Environmental Impacts....................3-1
3.1 Aesthetics.................... 3.1-1
3.1.1 Setting.................... 3.1-1
3.1.2 Environmental Impacts and Mitigation Measures.................... 3.1-18
3.2 Agriculture and Forestry Resources.................... 3.2-1
3.2.1 Setting.................... 3.2-1
3.2.2 Environmental Impacts and Mitigation Measures.................... 3.2-3

3.3 Air Quality ... 3.3-1
3.3.1 Setting ... 3.3-1
3.3.2 Environmental Impacts and Mitigation Measures ... 3.3-7
3.4 Biological Resources ... 3.4-1
3.4.1 Setting ... 3.4-1
3.4.2 Environmental Impacts and Mitigation Measures ... 3.4-6
3.5 Cultural Resources ... 3.5-1
3.5.1 Setting ... 3.5-1
3.5.2 Environmental Impacts and Mitigation Measures ... 3.5-3
3.6 Geology and Soils ... 3.6-1
3.6.1 Setting ... 3.6-1
3.6.2 Environmental Impacts and Mitigation Measures ... 3.6-11
3.7 Greenhouse Gas Emissions ... 3.7-1
3.7.1 Setting ... 3.7-1
3.7.1 Environmental Impacts and Mitigation Measures ... 3.7-4
3.8 Hazards and Hazardous Materials ... 3.8-1
3.8.1 Setting ... 3.8-2
3.8.2 Environmental Impacts and Mitigation Measures ... 3.8-5
3.9 Hydrology and Water Quality ... 3.9-1
3.9.1 Setting ... 3.9-1
3.9.2 Environmental Impacts and Mitigation Measures ... 3.9-7
3.10 Land Use and Planning ... 3.10-1
3.10.1 Setting ... 3.10-1
3.10.2 Environmental Impacts and Mitigation Measures ... 3.10-2
3.11 Mineral Resources ... 3.11-1
3.11.1 Setting ... 3.11-1
3.11.2 Environmental Impacts and Mitigation Measures ... 3.11-2
3.12 Noise ... 3.12-1
3.12.1 Setting ... 3.12-1
3.12.2 Environmental Impacts and Mitigation Measures ... 3.12-4
3.13 Population and Housing ... 3.13-1
3.13.1 Setting ... 3.13-1
3.13.2 Environmental Impacts and Mitigation Measures ... 3.13-3
3.14 Public Services ... 3.14-1
3.14.1 Setting ... 3.14-1
3.14.2 Environmental Impacts and Mitigation Measures ... 3.14-4
3.15 Recreation ... 3.15-1
3.15.1 Setting ... 3.15-1
3.15.2 Environmental Impacts and Mitigation Measures ... 3.15-1
3.16 Transportation/Traffic ... 3.16-1
3.16.1 Setting ... 3.16-1
3.16.2 Environmental Impacts and Mitigation Measures ... 3.16-4
3.17 Utilities and Service Systems ... 3.17-1
3.17.1 Setting ... 3.17-1
3.17.2 Environmental Impacts and Mitigation Measures ... 3.17-6
3.18 Mandatory Findings of Significance ... 3.18-1

4.0 List of Preparers....................4-1
4.1 Lead Agency....................4-1
4.2 Project Management and Document Production....................4-1

5.0 Mitigation Monitoring, Reporting, and Compliance Plan......5-1
Variances....................5-1
Dispute Resolution....................5-2

Appendices (Included on CD in Back Pocket)

Appendix A: Air Quality and Greenhouse Gas Emissions Calculations
Appendix B1: Vegetation Communities, Land Cover Types, and Threatened and Endangered Species Observations
Appendix B2: Potential Habitat for Listed Vernal Pool Species and Valley Elderberry Longhorn Beetle
Appendix B3: Suitable Habitat for Giant Garter Snake
Appendix B4: Wetlands and Waters of the United States
Appendix B5: Swainson's Hawk and Raptor Nest Sites and Survey Results

This page intentionally left blank

Tables

Table 1.8-1 Palermo-Rio Oso 115-kV Lines 1-2

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed 1-27

Table 1.8-3 Palermo–Pease Line Structures to be Replaced, Left in Place, or Removed 1-32

Table 1.8-4 Site Grading and Soil Excavation 1-33

Table 1.8-5 Soil Disposal and Concrete Importing 1-33

Table 1.8-6 On-Road Construction Equipment and Material Delivery Trucks (Except Dump Trucks for Exported Soil and Concrete Trucks for Imported Concrete) 1-34

Table 1.8-7 Proposed Stream and Wetland Crossings 1-37

Table 1.8-8 Laydown, Staging, Landing, and Pull Sites 1-39

Table 1.8-9 Construction Workers 1-40

Table 1.8-10 Crews Expected To Be Used during Project Construction 1-40

Table 1.8-11 Equipment Expected To Be Used during Project Construction 1-41

Table 1.8-12 On-Site Construction Equipment and Usage 1-41

Table 1.8-13 Helicopter Usage 1-42

Table 1.8-14 Average Duration of Construction Phases 1-42

Table 1.8-15 Applicant Proposed Measures (APMs) 1-45

Table 3.1-1 Aesthetics Checklist 3.1-1

Table 3.2-1 Agriculture and Forestry Resources Checklist 3.2-1

Table 3.2-2 Farmland in Project Regional Area 3.2-2

Table 3.2-3	Estimated Farmland Disturbed by Project	3.2-3
Table 3.3-1	Air Quality Checklist	3.3-1
Table 3.3-2	Summary of National and California Ambient Air Quality Standards	3.3-2
Table 3.3-3	Ambient Air Quality Monitoring Data	3.3-3
Table 3.3-4	Attainment Status within the Regional Area	3.3-5
Table 3.3-5	Estimated Daily Construction Emissions for Each Construction Phase	3.3-8
Table 3.3-6	Estimated Daily NO_x Emissions for Tower Work and Line Stringing Phases	3.3-9
Table 3.3-7	Estimated Maximum Daily NO_x Emissions for All Construction Phases	3.3-9
Table 3.3-8	Sensitive Receptors in Proximity to the Project	3.3-10
Table 3.4-1	Biological Resources Checklist	3.4-1
Table 3.4-2	Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route	3.4-8
Table 3.4-3	Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area	3.4-13
Table 3.5-1	Cultural Resources Checklist	3.5-1
Table 3.6-1	Geology and Soils Checklist	3.6-1
Table 3.6-2	Geologic Map Units Exposed Along the Project Route	3.6-2
Table 3.6-3	Soil Map Units along the Project Route	3.6-8
Table 3.7-1	Greenhouse Gas Emissions Checklist	3.7-1
Table 3.8-1	Hazards and Hazardous Materials Checklist	3.8-1
Table 3.8-2	Hazardous Materials Sites Identified Along the Project Route	3.8-3
Table 3.9-1	Hydrology and Water Quality Checklist	3.9-1

Table 3.10-1 Land Use and Planning Checklist 3.10-1

Table 3.11-1 Mineral Resources Checklist 3.11-1

Table 3.12-1 Noise Checklist 3.12-1

Table 3.12-2 Yuba County Noise Level Standards 3.12-3

Table 3.12-3 Proposed Construction Equipment Types and Typical Noise Emission Levels 3.12-5

Table 3.12-4 Predicted Construction-Related (Non-Helicopter) Upper Bound Noise Levels Along the Project Route 3.12-5

Table 3.13-1 Population and Housing Checklist 3.13-1

Table 3.13-2 Regional Population Trends 3.13-1

Table 3.13-3 Housing in the Project Area 3.13-2

Table 3.13-4 Employment in the Project Area 3.13-2

Table 3.14-1 Public Services Checklist 3.14-1

Table 3.15-1 Recreation Checklist 3.15-1

Table 3.15-2 Recreational Facility Locations 3.15-1

Table 3.16-1 Transportation/Traffic Checklist 3.16-1

Table 3.16-2 Construction Phases, Workers, Truck Trips, Schedule, and Activities 3.16-4

Table 3.17-1 Utilities and Service Systems Checklist 3.17-1

Table 3-17-2 Utilities and Service Systems Summary by Jurisdiction 3.17-2

Table 3.18-1 Mandatory Findings of Significance Checklist 3.18-1

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan 5-3

This page intentionally left blank

Figures

Figure 1.8-0 Yearly Peak Demand and System Capability ... 1-5

Figure 1.8-1 Forecasted Emergency Loadings on the Palermo–Rio Oso 115-kV Lines ... 1-7

Figure 1.8-2a Project Description ... 1-11

Figure 1.8-2b Project Description ... 1-13

Figure 1.8-2c Project Description ... 1-15

Figure 1.8-2d Project Description ... 1-17

Figure 1.8-2e Project Description ... 1-19

Figure 1.8-2f Project Description ... 1-21

Figure 1.8-3 Conceptual Structure Drawings ... 1-23

Figure 1.8-4 Hybrid Pole Typical Design ... 1-25

Figure 3.1-1 Photo Viewpoint Locations ... 3.1-5

Figure 3.1-2a Landscape Unit 1: Visual Character Photographs ... 3.1-7

Figure 3.1-2b Landscape Unit 1: Visual Character Photographs ... 3.1-9

Figure 3.1-2c Landscape Unit 2: Visual Character Photographs ... 3.1-11

Figure 3.1-2d Landscape Unit 2: Visual Character Photographs ... 3.1-13

Figure 3.1-2e Landscape Unit 3: Visual Character Photographs ... 3.1-15

Figure 3.1-3 Existing View and Visual Simulation: Baldwin Avenue at Railroad Avenue ... 3.1-19

Figure 3.1-4 Existing View and Visual Simulation: Fernwood Drive near Wildwood Drive ... 3.1-21

Figure 3.1-5 Existing View and Visual Simulation: Highway 70 at Highway 65 ... 3.1-23

Figure 3.1-6 Existing View and Visual Simulation: View Northeast from Highway 70 .... 3.1-25

Figure 3.2-1 Prime Farmland Along the Project Route 3.2-5

Figure 3.6-1 Geological Map of the Regional Area 3.6-3

Figure 3.7-1 Relationship Between Global Temperature and Carbon Dioxide 3.7-2

Figure 3.9-1 Feather River Tributary Crossings 3.9-3

Acronyms and Abbreviations

AB	California Assembly Bill
ABAG	Association of Bay Area Governments
AFB	Air Force Base
APMs	Applicant Proposed Measures
AST	Aboveground Storage Tank
BA	Biological Assessment
BCAG	Butte County Association of Governments
BMPs	Best Management Practices
BP	Before Present
CA FID UST	Facility Inventory Database, Underground Storage Tanks
CAISO	California Independent System Operator
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CDC	California Department of Conservation
CDF	California Department of Finance
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CERCLIS-NFRAP	CERCLIS No Further Remedial Action Planned
CESA	California Endangered Species Act
CFG	California Fish and Game
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
COI	California-Oregon Intertie
CPUC	California Public Utilities Commission
dB	Decibel
DFG	California Department of Fish and Game
DLRP	Division of Land Resource Protection
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances and Chemicals
DWR	California Department of Water Resources
EDR	Environmental Data Resources Inc.
ERNS	Emergency Response Notification System
ESA	Federal Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FINDS	Facility Index System
FIRM	Flood Insurance Rate Maps

FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GWPC	Great Western Power Company
HCP	Habitat Conservation Plan
Hz	Hertz
KOPs	Key Observations Points
Ldn	Day-Night Level
Leq	Sound Equivalent Level
LOS	Level of Service
LSP	Lattice Steel Poles
LSTs	Lattice Steel Towers
MBTA	Migratory Bird Treat Act
mg/L	Milligrams Per Liter
MM	Mitigation Measure
MRZs	Mineral Resource Zones
MW	Megawatts
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NERC	North American Electric Reliability Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priority List
NRCS	Natural Resources Conservation Service
PAHS	Polynuclear Aromatic Compounds
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
RCRIS	Resource Conservation and Recovery Act Information System
ROWs	Rights-of-Ways
SACOG	Sacramento Area Council of Governments
SLIC	Spills, Leaks, Investigations and Cleanups
SPCCP	Spill Prevention Control and Countermeasure Plan
SR	State Route
SRRE	Source Reduction and Recycling Element
SSAC	Steel-Supported Aluminum Cable
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
TPH	Total Petroleum Hydrocarbons
TPHd	Total Petroleum Hydrocarbons TPH as Diesel
TPHg	Total Petroleum Hydrocarbons TPH as Gasoline
TSPs	Tubular Steel Poles
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Properties

VELB	Valley Elderberry Longhorn Beetle
WWTP	Wastewater Treatment Plant
YSD	Yuba-Sutter Disposal, Inc.

1.0 Background Information

1.1 Project Title

Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project

1.2 Lead Agency Name and Address

California Public Utilities Commission (CPUC)
Energy Division
505 Van Ness Avenue
San Francisco, California 94102

1.3 Lead Agency Contact Person and Phone Number

Mr. Iain Fisher, Project Manager
Energy Division
Phone: (415) 355-5580
Email: aei@cpuc.ca.gov

1.4 Project Location

The project is located entirely within existing easements between PG&E's Palermo and East Nicolaus Substations within the unincorporated areas of Butte, Sutter, and Yuba counties, in northern California. The project route would also cross land within the City of Oroville.

1.5 Project Sponsor's Name and Address

Pacific Gas & Electric Company (PG&E)
Environmental Planning and Permitting
Land and Environmental Management Department
350 Salem Street
Chico, California 95928

1.6 General Plan Designation

The Butte, Sutter, and Yuba County general plan land use designations for the area along the project route include agricultural, agricultural residential, industrial, commercial, single and multiple family residential, and public/open space. Within the City of Oroville, the project would cross or be adjacent to properties designated for industrial land uses. The project would be located entirely within existing easements.

1.7 Zoning

The Butte, Sutter, and Yuba County zoning for the area along the project route include agricultural, agricultural residential, light commercial, light industrial, flood plain, recreational, single and medium density residential, general commercial, general industrial, and public facilities.

1.8 Description of the Project

PG&E's electric transmission system serving Butte, Yuba, and Sutter counties is comprised of 230-kV, 115-kV, and 60-kV networks and facilities. The 230-kV and 115-kV facilities, crossing the area from north to south, are part of the bulk transmission system and also serve as connections to the surrounding generation facilities including hydro generation produced around Feather River and Lake Oroville. To meet the present and forecasted electric demands for the area, PG&E (hereafter, "the applicant") is proposing several capacity and reliability improvement projects to area transmission facilities; one of the projects is the Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project between Palermo Substation near Oroville and East Nicolaus Substation south of Marysville.

1.8.1 Project Overview and Location

The subject transmission line is an existing double-circuit tower line that carries two individual 115-kV circuits between the applicant's Palermo and East Nicolaus Substations. Both circuits would be reconductored. In order to accommodate reconductoring, replacement of the existing lattice steel towers (towers) is required. The existing Milliken towers, originally constructed in the early 1900s, would not support the new conductor because of higher tension loads. The towers would be replaced with a combination of hybrid tubular steel poles (hybrid poles), tubular steel poles (TSP), and lattice steel poles (LSP). A capacity increase to the system would result from the replacement of existing copper conductor with new 1113 All Aluminum conductors for each circuit from the Palermo Substation south to Rio Oso Junction and with either 1113 all-aluminum or 457 steel-supported aluminum cable (SSAC) conductor from Rio Oso Junction to East Nicolaus Substation. The new conductor would enable an increase in the existing rating of the lines and eliminate forecasted line overloads. In addition, a limited number of towers on a single-circuit line that runs parallel to the Palermo–East Nicolaus 115-kV Transmission Line would be replaced for consistency with the spans on the Palermo–East Nicolaus 115-kV Transmission Line (project).

1.8.2 Applicant's Purpose and Need

Three Palermo–Rio Oso 115-kV lines are located in Yuba and Sutter Counties. The transmission lines range in length from 46 to 57 miles and are constructed on towers built in the early 1900s. These lines provide power to the Honcut, Pease, East Marysville, Olivehurst, Bogue, and East Nicolaus distribution substations, among others. Table 1.8-1 describes the characteristics of the three Palermo–Rio Oso 115-kV Lines.

Table 1.8-1 Palermo-Rio Oso 115-kV Lines

Transmission Line Name	Length (Miles)	Limiting Conductor Type	Summer Normal/Emergency Line Rating (Amps)
Palermo-Nicolaus-Rio Oso			
Palermo-Nicolaus	41.3	3/0 Cu	361/416
Rio Oso-Nicolaus	5.5	3/0 Cu	326/416
Palermo-Pease-Rio Oso			
Palermo-Pease	21.2	397 AAL	440/514
Pease-Rio Oso	27.7	397 AAL	440/514

Table 1.8-1 Palermo-Rio Oso 115-kV Lines

Transmission Line Name	Length (Miles)	Limiting Conductor Type	Summer Normal/Emergency Line Rating (Amps)
Palermo-Bogue-Rio Oso			
Palermo-Bogue	35.7	3/0 CU	361/416
Bogue-Rio Oso	21.4	397 AAL	440/514

In addition to providing 115-kV power to the area's electric customers, the Palermo–Rio Oso 115-kV lines also serve as an important transmission path of bulk electricity coming from nearby hydroelectric generating facilities and the California-Oregon Intertie (COI), comprised of several 500-kV power lines that were built by Western Area Power Administration, PG&E, and PacifiCorp in the early 1970s to 1990s, linking power grids in the Southwest with power grids in the Pacific Northwest.

There are several hydroelectric powerhouses in the area, particularly along Feather River between Lake Almanor and Lake Oroville. Most of them are interconnected to the 230-kV systems of the Table Mountain and Rio Oso substations and to the 115-kV system of the Palermo Substation. The power plants listed below have a total installed capacity of 287 megawatts (MW).

- Yuba County Water Agency's Deadwood Creek Powerhouse
- Oroville-Wyandotte Irrigation District's Forbestown
- Sly Creek Powerhouse
- Wood Leaf Powerhouse
- Calpine's Greenleaf I
- Calpine's Greenleaf II
- Feather River Energy Center

Power from these power plants, together with imported power from COI going through the Table Mountain Substation, is transported to load centers in Sutter and Yuba counties through the Palermo–Rio Oso 115-kV lines.

Some capacity upgrades to the Palermo–Rio Oso 115-kV circuits were made in the past including rerating some sections to a higher wind speed assumption and reconfiguring the network to balance line loadings. However, these upgrades only provided near-term capacity increase and did not eliminate the forecasted overloads.

Power flow studies indicate that if an outage were to occur on the Pease–Rio Oso 115-kV Line while the Greenleaf I generator was unavailable during high hydroelectric generation, summer peak periods, and COI import power conditions, the 115-kV circuit between the Palermo Substation and the Bogue Tap sections could exceed emergency rating by up to1 percent in 2010. The normal and emergency loads are projected to be 306 and 420 amps, respectively, whereas the current capacity of the limiting conductor on the circuit is 361 amps normally and 416 amps under emergency conditions. Projected load growth is anticipated to exacerbate the problem going forward.

An outage of the Pease–Rio Oso 115-kV Line and the Greenleaf I generator is considered a Category B disturbance by the California Independent System Operator (CAISO). Under CAISO, a Category B disturbance is either a single-element outage or the outage of a single transmission line with a generator already out of service. Under the North American Electric Reliability Council (NERC)/Western Electricity Coordinating Council Planning Standards, a Category B contingency is an outage of a single bulk electric system element. CAISO and NERC standards require that during a single-element outage, the transmission system be capable of serving customer demand and keeping line and equipment load within emergency ratings.

Thus, if the Pease–Rio Oso Line and the Greenleaf I generator were to fail, especially during peak-demand load levels, the existing system would not be able to meet planning criteria for reliability under CAISO and NERC. This combined failure is expected to result in an overload of both the Palermo–East Nicolaus and Palermo–Bogue 115-kV lines. The overload could prevent the applicant from serving customer demand because the applicant would need to drop customer load to keep the transmission facilities within emergency ratings. CAISO Planning Standards require that the system meet performance requirements for keeping line and equipment loading within emergency ratings following a single transmission-circuit outage with one generator already out of service. Under NERC Planning Standards, the combined outage of the two facilities would be considered a Category C outage—the loss of two or more bulk electric system elements. NERC Category C outages need to meet the same system performance standards as Category B; the difference is that controlled load dropping is allowed under Category C. Load drop following a Category B disturbance/contingency is not allowed under NERC or CAISO standards.

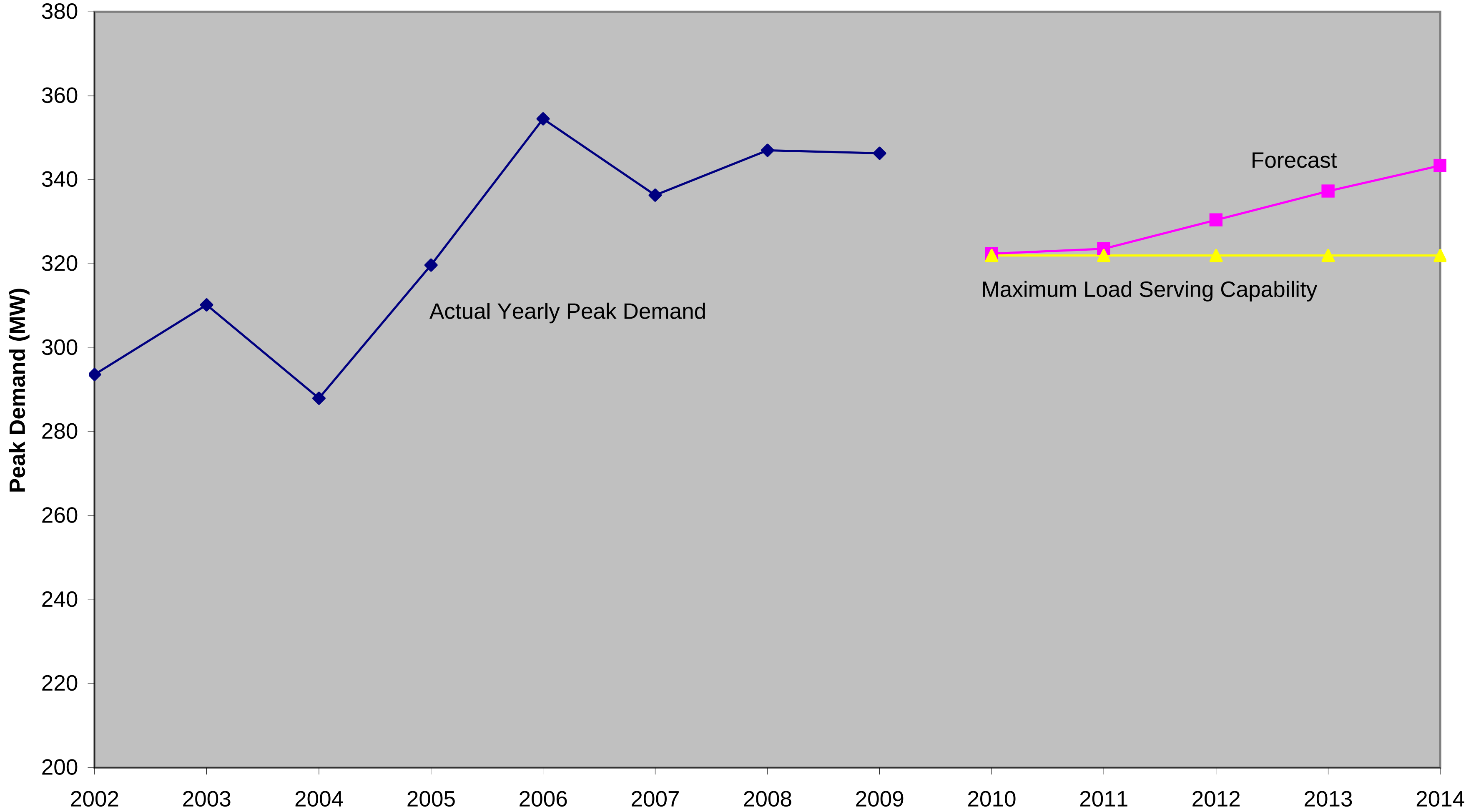
The existing system has a maximum load-serving capability of about 322 MW with loss of the Pease–Rio Oso 115-kV Line while the Greenleaf I generator is unavailable (Figure 1.8-0). Maximum load serving capability would have been exceeded multiple times from 2005 to 2009 if the Pease–Rio Oso 115-kV Line and the Greenleaf I generator had failed (i.e., during a Category B disturbance as defined by CAISO). The potential for exceeding maximum load serving capability in the event of a CAISO Category B disturbance is forecasted to increase from 2010 and onward due to projected increases in customer demand for electricity (Figure 1.8-1). The substations in Sutter and Yuba counties, and within the sphere of influence of the City of Marysville, recorded a historical total peak load of 347 MW in the summer of 2008.

The recent economic downturn and customer conservation efforts resulted in a peak load of 346 MW in 2009. Even with the reduction of peak load, the forecasted peak demand levels are expected to rebound to their previous levels. The load increase is due to the area demographics, among other things. The proportion of domestic customers to the total customers in the area is over 80 percent. To account for this, the distribution facilities have been designed to allow for future growth due to imminent residential housing developments along State Highway 70. In the future, the load in these two counties is forecasted to grow at a rate of 5 MW or 1.5 percent per year—1 MW serves approximately 1,000 residential homes. As a result, it is forecasted that maximum load serving capability will be exceeded during every disturbance involving the combined outages of the Pease–Rio Oso 115-kV Line and the Greenleaf I generator starting in the summer of 2010 during peak-load conditions (Figure 1.8-1). Peak-load conditions generally occur during summer on-peak hours.

The applicant reported that though 2009 summer peak demand levels had not yet been released at the time of application, the project area typically experiences highest electricity demand between July and September. According to follow-up information provided by the applicant, preliminary analysis of early 2009 data indicated that on several occasions, the Palermo–East Nicolaus and Palermo–Bogue 115-kV lines were at risk of overloading had there been an outage of the Pease–Rio Oso 115-kV line while the Greenleaf I generator was out of service.

Figure 1.8-0

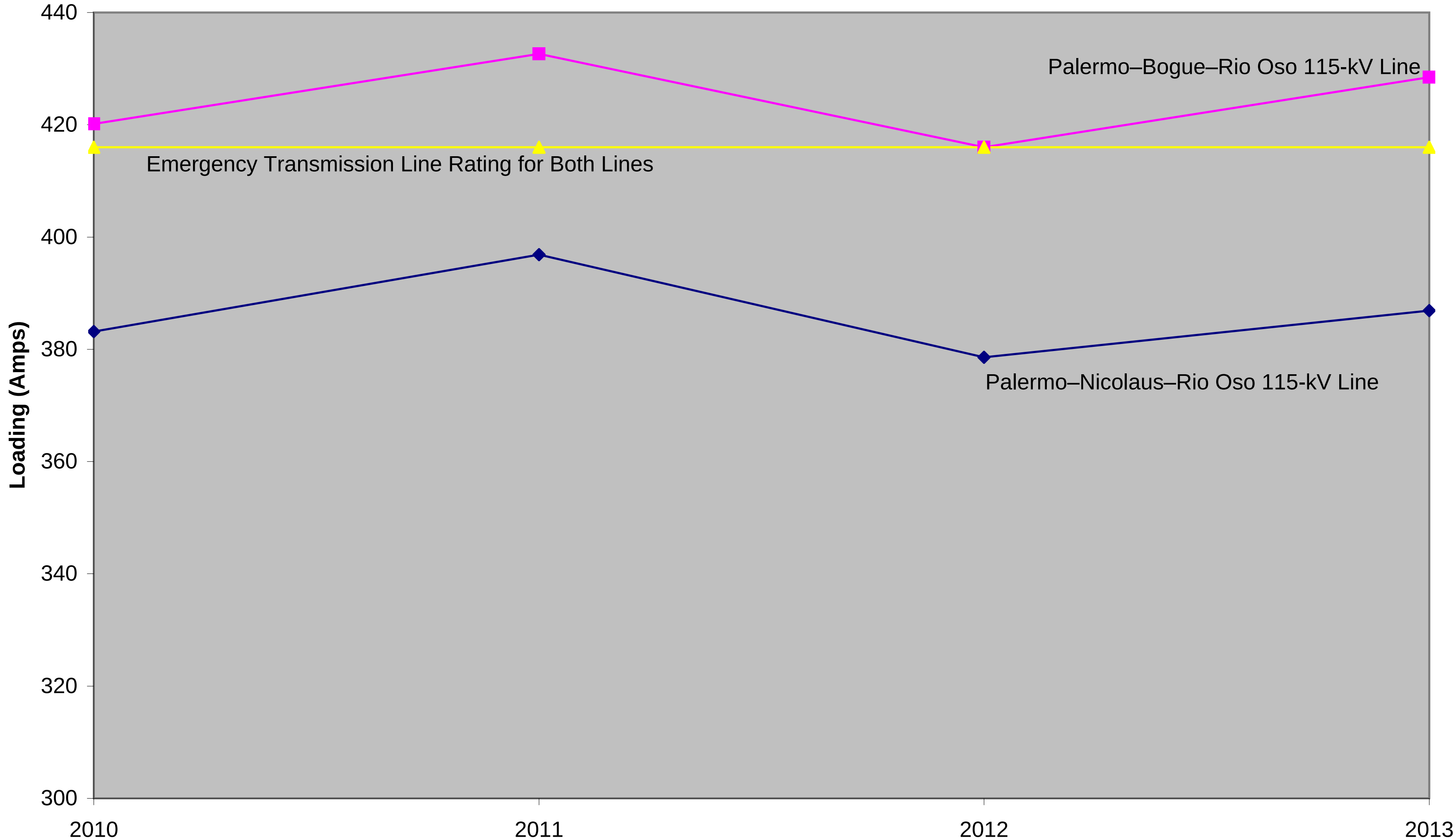
Yearly Peak Demand and System Capability



This page intentionally left blank

Figure 1.8-1

Forecasted Emergency Loadings on the Palermo–Rio Oso 115-kV Lines



Note: Assumes that Pease–Rio Oso 115-kV Line and the Greenleaf I Generator are unavailable.

This page intentionally left blank

With implementation of the project, reconductoring and replacement of the existing towers would result in an increase in the existing transmission line rating to 825 amps when under normal conditions and 975 amps under emergency conditions. The capacity increase would eliminate forecasted line overloads and allow the applicant to reliably serve electric customers as well as transport bulk power to load centers in Sutter and Yuba counties.

1.8.3 Project Objectives

The project is needed to improve reliability and transmission capacity in Yuba, Sutter, Butte counties to continue to provide safe and reliable electric service to customers. The applicant's local 115-kV transmission system is at risk of overloading problems should there be a loss of the Pease–Rio Oso 115-kV Line while the Greenleaf I generator is unavailable. Reconductoring the two individual 115-kV circuits between the applicant's Palermo and East Nicolaus Substations would help meet future demand, maintain compliance with applicable grid reliability criteria, and make it easier to maintain the transmission system. The basic objectives of the project include:

1. **Ensure transmission system reliability.** The main project objective is to ensure that the transmission system serving the Yuba, Sutter, and Butte county area continues to meet planning standards and criteria established by CAISO and NERC and ensure the safety and reliability of the transmission system. These planning criteria must be met by the project.
2. **Replace aging facilities.** The second objective is to replace aging and dilapidated facilities in a cost effective and environmentally sensitive manner.
3. **Implement the CAISO Board of Governor's May 21, 2008 Resolution.** The third objective is to implement the May 21, 2008 California CAISO Board of Governors' resolution approving the project for addition to the CAISO-controlled grid.

1.8.4 Project Facilities

The project would include the following:

- Replacement of existing steel towers with a combination of new hybrid tubular steel poles, tubular steel poles, and lattice steel poles on the Palermo-East Nicolaus 115-kV double-circuit transmission line.
- Replacement of a limited number of existing lattice steel towers on the adjacent single-circuit line with new steel poles for consistency with the spans on the Palermo-East Nicolaus 115-kV double-circuit transmission line.
- Conductor replacement.
- Construction of temporary access roads and limited improvements to permanent access roads.
- Revegetation of disturbed areas following construction.

Construction is expected to take 12 to 18 months. Specific details for each of these activities are presented in the following sections.

1.8.4.1 Transmission Line/Conductors

The Palermo–East Nicolaus 115-kV Transmission Line would be reconductored using new 1113 all-aluminum conductors for each circuit from the Palermo Substation south to Rio Oso Junction and with either 1113 all-aluminum or 457 SSAC conductor from Rio Oso Junction to East Nicolaus Substation.

1.8.4.2 Poles/Towers

The project would require the replacement of a majority of the existing towers on the double-circuit line and a limited number of towers on the adjacent single-circuit line. Existing towers range in height from 75 feet to 95 feet tall, with the typical height being 76 feet.

Various types of new pole designs would be used depending on site conditions. The existing towers would be replaced with a combination of hybrid tubular steel poles (hybrid poles), tubular steel poles (TSPs), and lattice steel poles (LSP). Figures 1.8-2a through 1.8-2f depict the location of proposed reconstruction. New structure designs are shown in Figure 1.8-3. Table 1.8-2 and Table 1.8-3 identify the type of pole planned for use at each location.

A typical design of the hybrid poles is shown in Figure 1.8-4. The hybrid pole is so called because it is a hybrid between conventional tubular steel and spun concrete to form a sectional composite pole design. The pole is direct buried and does not require a poured concrete foundation. It is installed by auguring the hole for the concrete lower-portion of the pole, which is approximately 35-feet long, installing the lower concrete base using a heavy crane, and then fitting the TSP onto the concrete base. The upper pole would be galvanized and dull grey colored. The hybrid poles would be approximately 80–120 feet tall.

TSPs would be used at angle, dead-end, conductor transposition,[1] and equipment (switch) poles where a stronger structure is needed. TSPs have a prefabricated steel upper-portion that is bolted to a poured-in-place concrete foundation. The pole would also be galvanized and dull grey colored. A heavy crane or helicopter would be used to install the TSPs. They would be 80–120 feet tall.

LSPs, which can be installed without a heavy crane, would be used in areas where access is limited. The poles would be approximately 85-feet tall. Similar to TSPs, the prefabricated LSPs would be installed by helicopter onto a poured-in-place foundation.

Of the existing 320 towers, approximately 265 would be replaced with steel poles, and approximately 40 would remain in place. The first ten towers from the Palermo Substation and the last nine towers into the East Nicolaus Substation would not be replaced. The total number of structures would be reduced by approximately 15. Table 1.8-2 and Table 1.8-3 provide information regarding pole types and heights for the Palermo–East Nicolaus and Palermo–Pease lines. The span lengths would be altered slightly from the existing spans as new pole placement has been designed to avoid sensitive resources.

1.8.4.3 Palermo and East Nicolaus Substations

No major work at the substations would be done as a part of this project. Minor relay replacement or setting changes may be required. All work would be within the existing substation control buildings.

---

[1] Conductor transposition refers to the modification of conductor orientation to improve the flow of electrical current.

Pole Replacement Site

Eliminate Tower

Existing Tower - No Structure Work

15 Structure numbers *(see Table 1.8-2 for details)*

10 Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*

Work Area / Pull Site

Helicopter Landing Zone

Temporary Access Road

Existing Access Road

Transmission Line

Cities

County Boundary

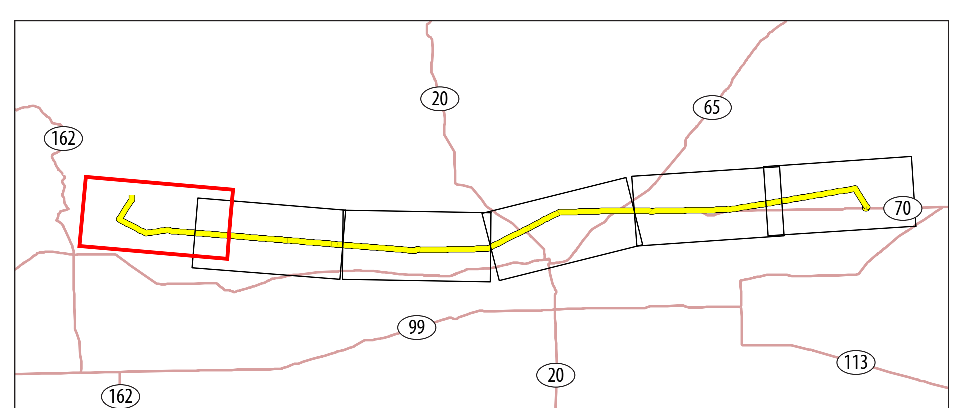
Urban Area: No Night Work

N

Miles

0.5 0 0.5

Aerial Photo Source: PG&E 2005, 2007



Reference: Fig. 3-2, Project Description, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009

PALERMO-EAST NICOLAUS 115-KV TRANSMISSION LINE

Figure 1.8-2a

Project Description

002803.CP10.03.q1_rev01 (2010 CD Archives - Vol 4) 07/26/2010

Pole Replacement Site

Eliminate Tower

Existing Tower - No Structure Work

15 Structure numbers *(see Table 1.8-2 for details)*

10 Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*

Work Area / Pull Site

Helicopter Landing Zone

Temporary Access Road

Existing Access Road

Transmission Line

Cities

County Boundary

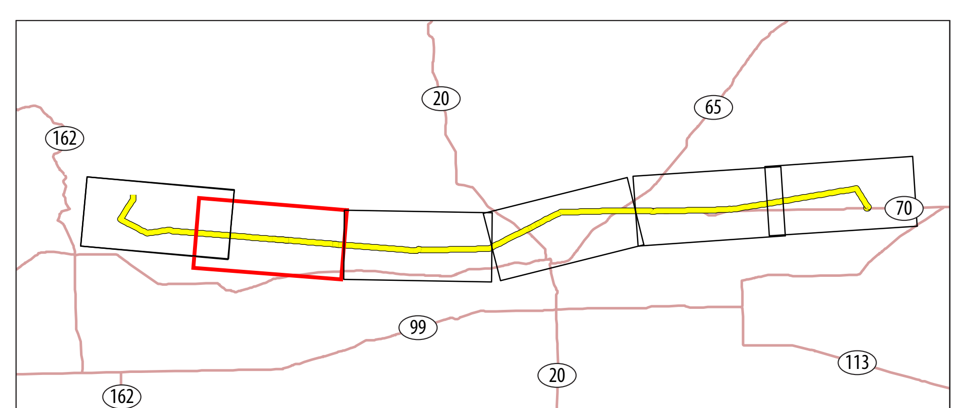
Urban Area: No Night Work

N

Miles

0.5 0 0.5

Aerial Photo Source: PG&E 2005, 2007



Reference: Fig. 3-2, Project Description, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project,*** ICF Jones & Stokes, February 2009

PALERMO-EAST NICOLAUS 115-KV TRANSMISSION LINE

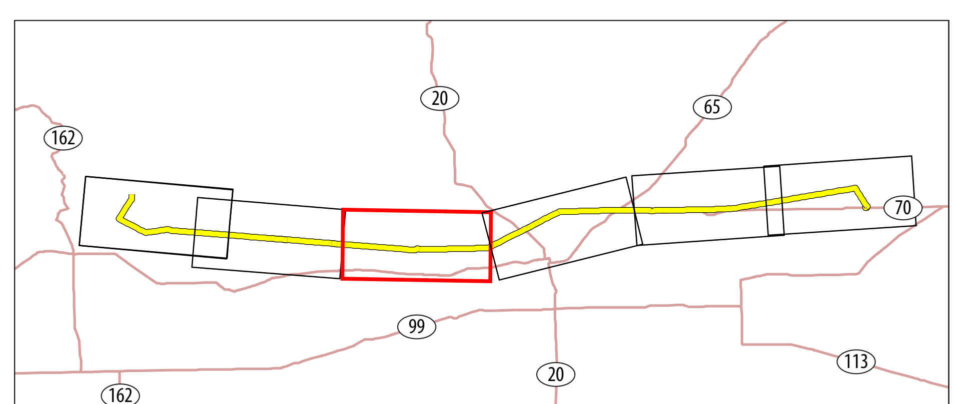
Figure 1.8-2b

Project Description

002803.CP10.03.q2_rev01 (2010 CD Archives - Vol 4) 07/26/2010

Pole Replacement Site
Eliminate Tower
Existing Tower - No Structure Work
15 Structure numbers *(see Table 1.8-2 for details)*
10 Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*
Work Area / Pull Site
Helicopter Landing Zone
Temporary Access Road
Existing Access Road
Transmission Line
Cities
County Boundary
Urban Area: No Night Work

N
Miles
0.5 0 0.5
Aerial Photo Source: PG&E 2005, 2007



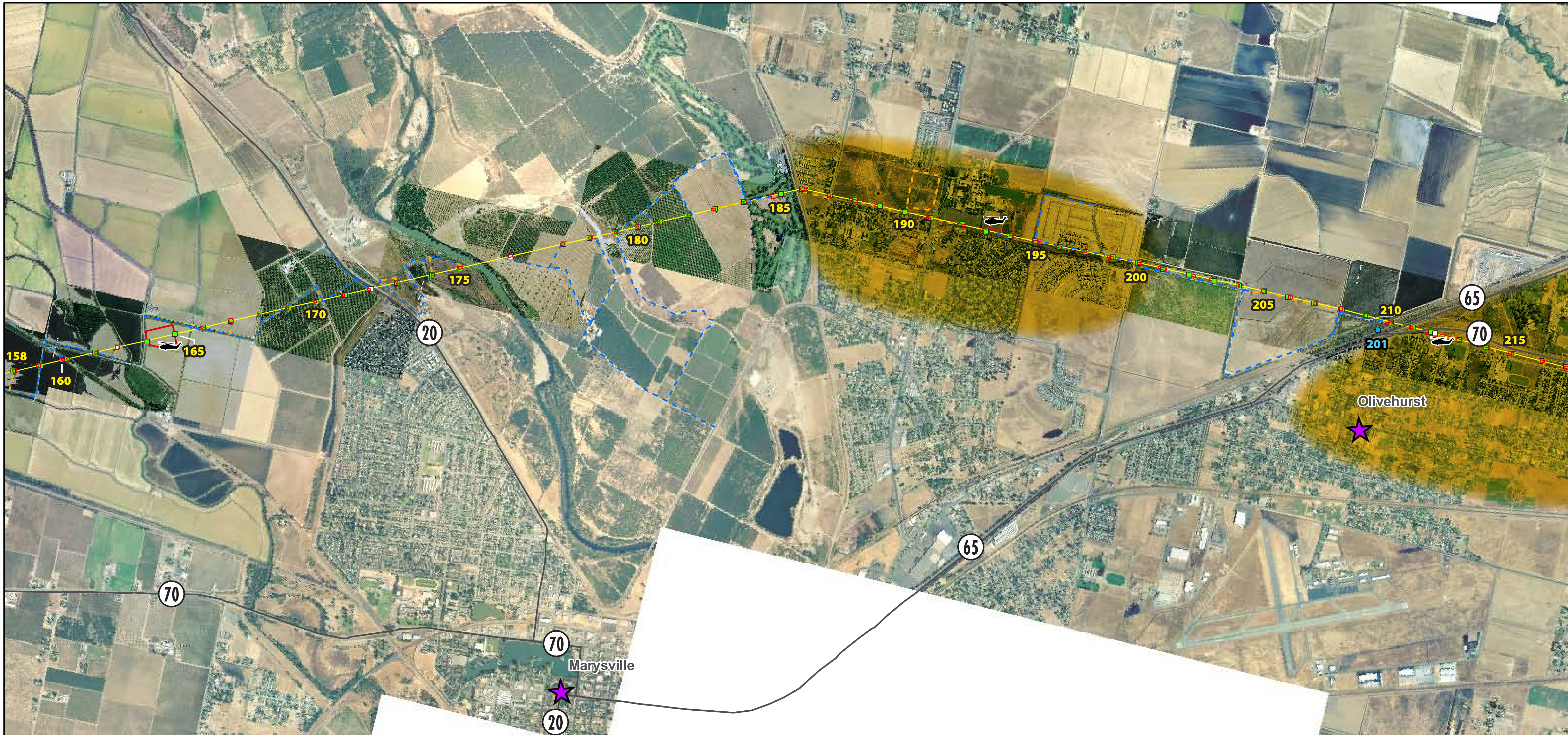
Reference: Fig. 3-2, Project Description, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project,*** ICF Jones & Stokes, February 2009

Palermo-East Nicolaus 115-kV Transmission Line

Figure 1.8-2c
Project Description

002803.CP10.03.q3_rev01 (2010 CD Archives - Vol 4) 07/26/2010

This page intentionally left blank



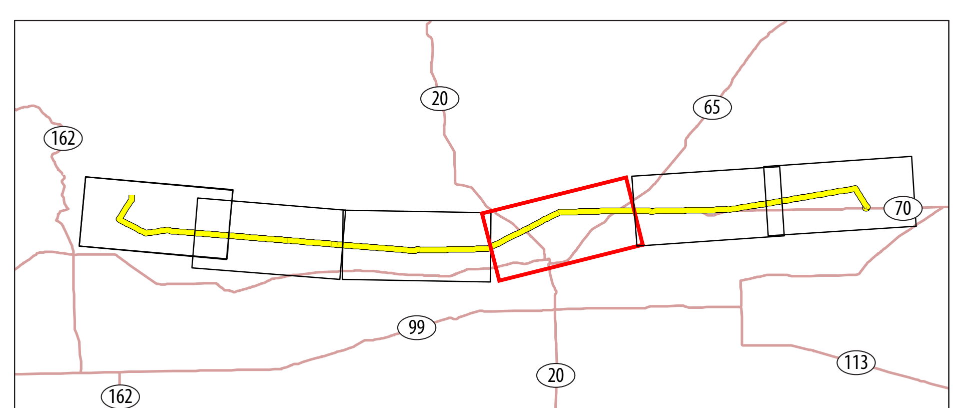
- Pole Replacement Site
- Eliminate Tower
- Existing Tower - No Structure Work
- 15 Structure numbers *(see Table 1.8-2 for details)*
- 10 Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*
- Work Area / Pull Site
- Helicopter Landing Zone
- Temporary Access Road
- Existing Access Road
- Transmission Line
- Cities
- County Boundary
- Urban Area: No Night Work

N

Miles

0.5 0 0.5

Aerial Photo Source: PG&E 2005, 2007



Reference: Fig. 3-2, Project Description, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009

PALERMO-EAST NICOLAUS 115-KV TRANSMISSION LINE

Figure 1.8-2d

Project Description

002803.CP10.03.q5_rev01 (2010 CD Archives - Vol 4) 07/22/2010

Pole Replacement Site

Eliminate Tower

Existing Tower - No Structure Work

Structure numbers *(see Table 1.8-2 for details)*

Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*

Work Area / Pull Site

Helicopter Landing Zone

Temporary Access Road

Existing Access Road

Transmission Line

Cities

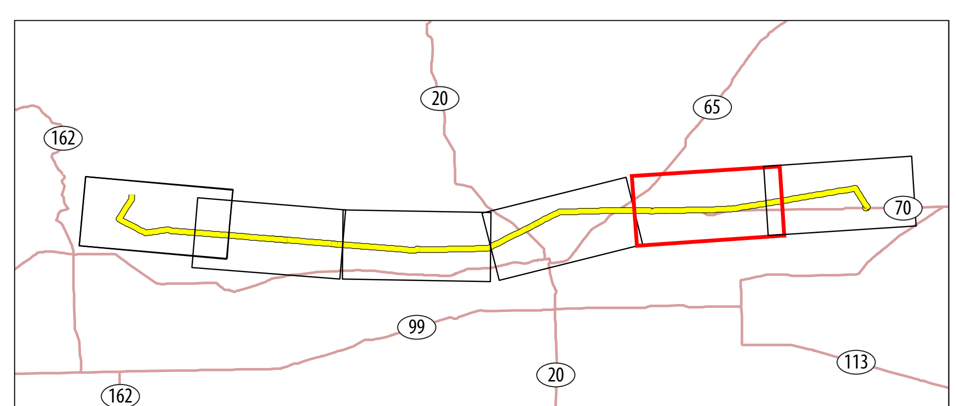
County Boundary

Urban Area: No Night Work

Miles

0.5 0 0.5

Aerial Photo Source: PG&E 2005, 2007



Reference: Fig. 3-2, Project Description, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

PALERMO-EAST NICOLAUS 115 KV TRANSMISSION LINE

Figure 1.8-2e

Project Description

002803.CP10.03.q6_rev01 (2010 CD Archives - Vol 4) 07/22/2010

Pole Replacement Site

Eliminate Tower

Existing Tower - No Structure Work

15 Structure numbers *(see Table 1.8-2 for details)*

10 Palermo - Pease Line & Structure numbers *(see Table 1.8-3 for details)*

Work Area / Pull Site

Helicopter Landing Zone

Temporary Access Road

Existing Access Road

Transmission Line

Cities

County Boundary

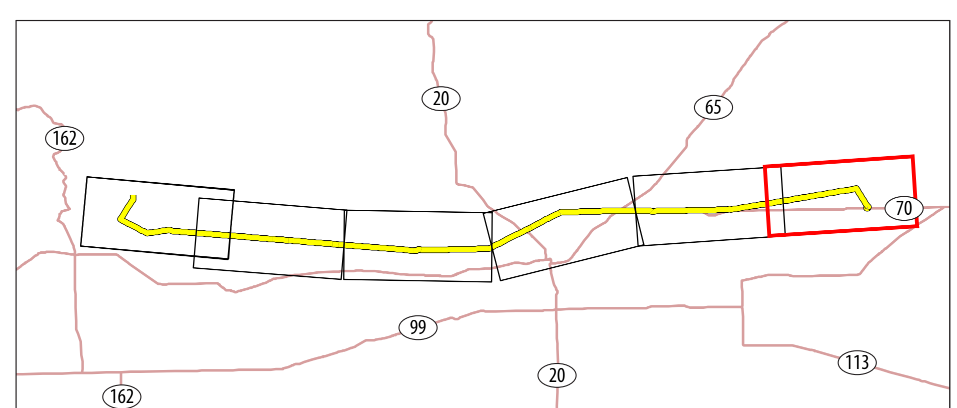
Urban Area: No Night Work

N

Miles

0.5 0 0.5

Aerial Photo Source: PG&E 2005, 2007



Reference: Fig. 3-2, Project Description, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009

PALERMO-EAST NICOLAUS 115-KV TRANSMISSION LINE

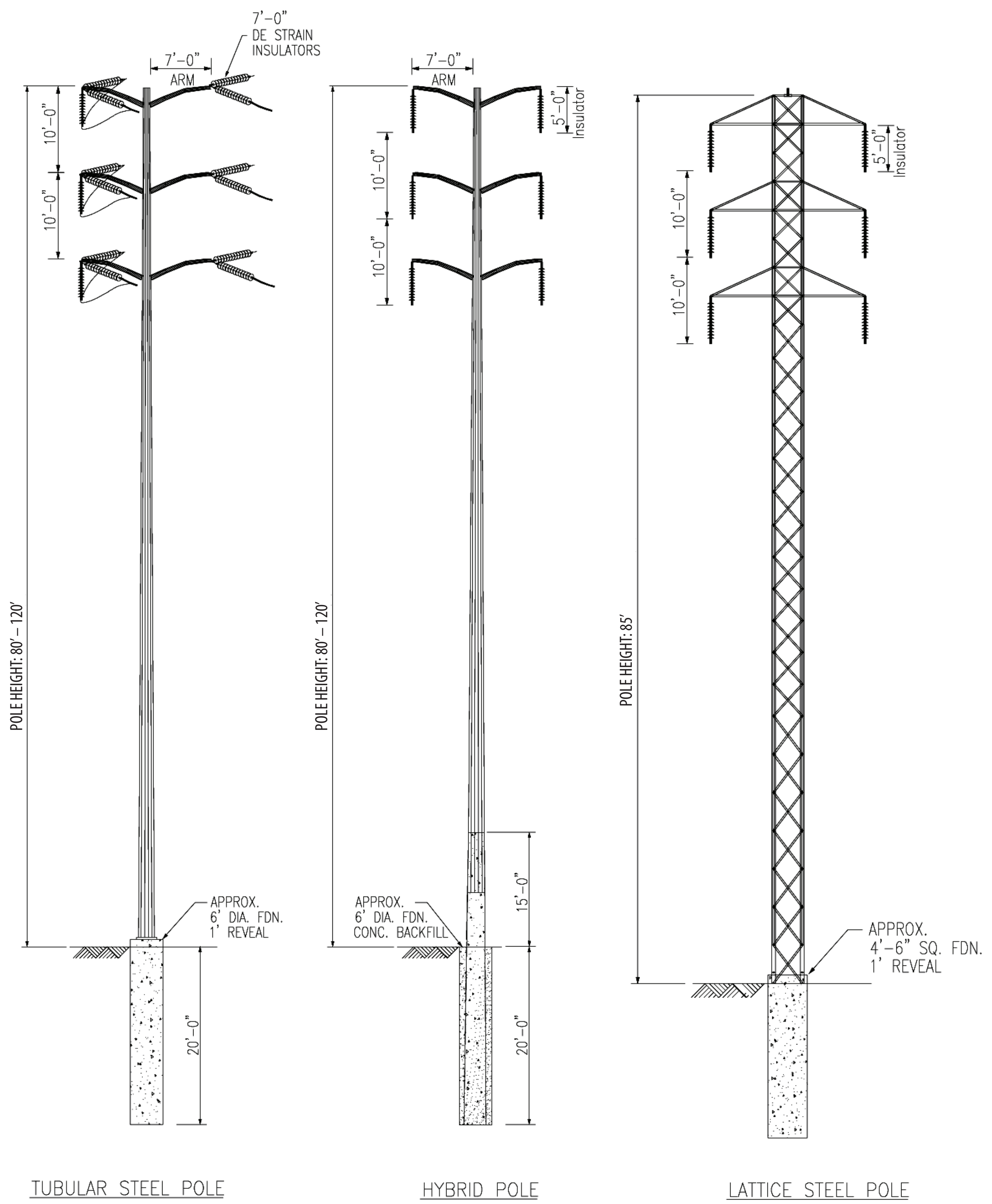
Figure 1.8-2f

Project Description

002803.CP10.03.q6_rev01 (2010 CD Archives - Vol 4) 07/27/2010

This page intentionally left blank

Reference: Fig. 3-3, Conceptual Structure Drawings, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009



00533.08 Proj Description (12-08)

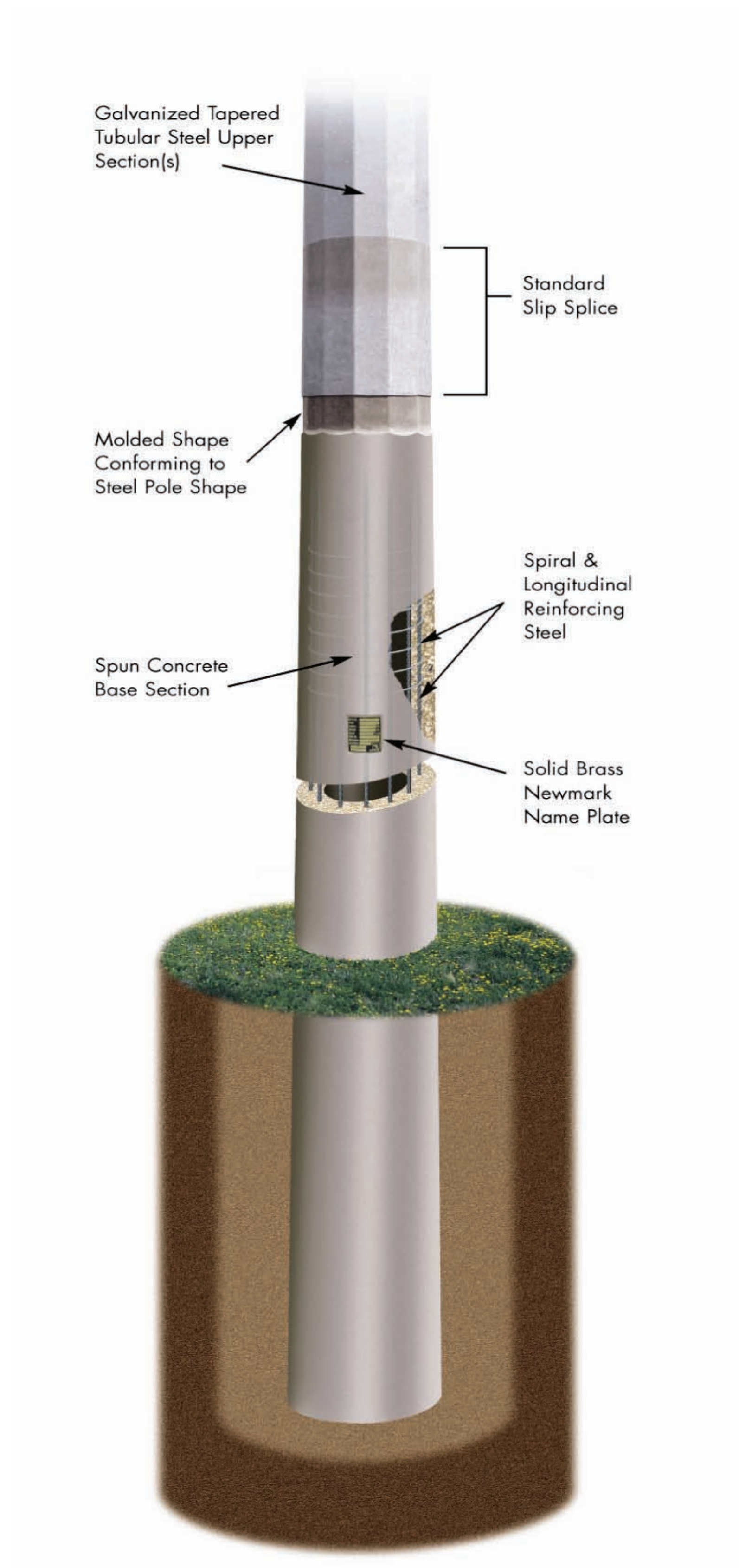
PALERMO–EAST NICOLAUS 115-KV TRANSMISSION LINE

002803.CP10.03.r (2009 CORP CD Archives - Vol 4) 06/24/2010

Figure 1.8-3

Conceptual Structure Drawings

This page intentionally left blank



PALERMO–EAST NICOLAUS 115-KV TRANSMISSION LINE

Figure 1.8-4

Hybrid Pole Typical Design

This page intentionally left blank

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
1–10	Existing to remain	N/A	No
11	TSP, DE	90	No
12	Hybrid	105	Yes
13	TSP, Transp.	80	Yes
14	Existing to be removed	N/A	Yes
15	Hybrid	100	Yes
16	Hybrid	105	Yes
17	Hybrid	85	Yes
18–20	Hybrid	90	Yes
21	Hybrid	105	Yes
22	Existing to be removed	N/A	Yes
23	TSP, DE	90	Yes
24–26	Hybrid	90	Yes
27	Hybrid	85	Yes
28	Hybrid	90	Yes
29	Hybrid	95	Yes
30, 31	Hybrid	90	Yes
32	TSP, DE	85	Yes
33	Existing to be removed	N/A	Yes
34	TSP, DE	90	Yes
35	Hybrid	90	Yes
36	Hybrid	95	Yes
37	Hybrid	90	No
38	Hybrid	100	No
39	TSP, Transp.	80	No
40	Existing to be removed	N/A	No
41	Hybrid	100	No
42–45	Hybrid	90	No
46, 47	Hybrid	95	No
48	Hybrid	90	No
49	Hybrid	85	No
50	Hybrid	90	No
51	Hybrid	100	No
52, 53	Hybrid	95	No
54, 55	Hybrid	90	No
56	Hybrid	95	No
57	Hybrid	90	No
58	Hybrid	95	No
59	Hybrid	100	No
60	Hybrid	90	No
61	Hybrid	95	No
62	Hybrid	90	No

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
63, 64	Hybrid	95	No
65	Hybrid	90	No
66	Hybrid	95	No
67	Hybrid	100	No
68	TSP, Transp.	80	No
69	Existing to be removed	N/A	No
70	Hybrid	95	No
71	Hybrid	105	No
72–74	Hybrid	100	No
75	Existing to be removed	N/A	No
76, 77	Hybrid	100	No
78, 79	Hybrid	105	No
80	TSP, SW	105	No
81	Hybrid	100	No
82	Hybrid	85	No
83–85	Hybrid	95	No
86	Hybrid	105	No
87	Existing to remain	N/A	No
88	TSP, SW	105	No
89	Hybrid	95	No
90	Hybrid	90	No
91	Hybrid	95	No
92, 93	Hybrid	100	No
94	Hybrid	95	No
95	Existing to be removed	N/A	No
96–98	Hybrid	100	No
99	TSP, Transp.	90	No
100	Hybrid	90	No
101, 102	Hybrid	95	No
103	Hybrid	90	No
104	Hybrid	95	No
105	Hybrid	90	No
106, 107	Hybrid	95	No
108	Hybrid	100	No
109	Hybrid	90	No
110, 111	Hybrid	95	No
112	Hybrid	90	No
113	Hybrid	95	No
114	Hybrid	90	No
115	Hybrid	100	No
116	Existing to be removed	N/A	No
117	Hybrid	95	No
118	Hybrid	90	No

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
119	TSP, Transp.	90	No
120	Existing to be removed	N/A	No
121–123	Hybrid	90	No
124	Hybrid	95	No
125, 126	Hybrid	90	No
127	TSP, DE	95	No
128	Existing to be removed	N/A	No
129	TSP, DE	95	No
130–133	Hybrid	85	No
134	Hybrid	90	No
135	Hybrid	95	No
136	Hybrid	90	No
137–139	Hybrid	95	No
140	Hybrid	90	No
141	Hybrid	95	No
142	Hybrid	90	No
143	Hybrid	95	No
144	Hybrid	100	No
145	TSP, Transp.	80	No
146	Existing to be removed	N/A	No
147	Hybrid	100	No
148	Hybrid	95	No
149	Hybrid	90	No
150	Hybrid	95	No
151	Hybrid	90	No
152	Hybrid	95	No
153	Hybrid	90	No
154	Hybrid	95	No
155	Hybrid	90	No
156	TSP, DE	80	No
157, 158	Hybrid	80	No
159	Hybrid	85	No
160	Existing to be removed	N/A	No
161	Hybrid	95	No
162	Hybrid	90	No
163	Existing to remain	N/A	No
164	Hybrid	100	No
165	Hybrid	90	No
166	Hybrid	95	No
167	Hybrid	90	No
168	TSP, SW	105	No
169–171	Hybrid	90	No
172	Existing to remain	N/A	No

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
173	Hybrid	110	No
174	Hybrid	95	No
175	TSP, DE	110	No
176	Existing to remain	N/A	No
177	TSP, DE	120	No
178	Hybrid	90	No
179	Hybrid	85	No
180	Hybrid	80	No
181, 182	Hybrid	95	No
183	Hybrid	90	No
184, 185	Hybrid	110	No
186	TSP, DE	80	Yes
187	TSP, SW	115	Yes
188–190	Hybrid	90	Yes
191, 192	Hybrid	100	Yes
193	Hybrid	85	Yes
194	TSP, Transp.	80	Yes
195	LSP	85	Yes
196	Existing to be removed	N/A	Yes
197–199	LSP	85	Yes
200, 201	Hybrid	85	Yes
202	Hybrid	90	No
203	Hybrid	80	No
204	Hybrid	85	No
205, 206	Hybrid	90	No
207, 208	Hybrid	85	No
209	Hybrid	95	No
210	TSP, SW, DE	105	No
211	TSP, DE	80	No
212	Existing to remain	N/A	Yes
213	Hybrid	90	Yes
214	TSP, SW	105	Yes
215	Hybrid	100	Yes
216	Hybrid	90	Yes
217–220	Hybrid	85	Yes
221, 222	Hybrid	95	Yes
223	Hybrid	85	Yes
224	Existing to remain	N/A	Yes
225, 226	Hybrid	90	Yes
227	Hybrid	85	No
228–234	Hybrid	90	No
235	Hybrid	95	No
236–238	Hybrid	90	No

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
239	Hybrid	95	No
240	Hybrid	90	No
241	Hybrid	95	No
242	Hybrid	90	No
243, 245	Hybrid	95	No
246, 247	Hybrid	90	No
248	Hybrid	95	No
249, 251	Hybrid	85	No
252	Hybrid	90	No
253	Hybrid	100	No
254	TSP, DE	80	No
255	Hybrid	80	No
256, 257	TSP, DE	80	No
258	Hybrid	100	No
259, 260	Hybrid	95	No
261	Hybrid	90	No
262	Hybrid	100	No
263–264	Hybrid	90	No
265	Hybrid	90	Yes
266	Hybrid	95	Yes
267	Hybrid	90	Yes
268	Hybrid	105	Yes
269	Hybrid	85	Yes
270–273	Hybrid	90	Yes
274	TSP, DE	90	Yes
275	Existing to be removed	N/A	Yes
276	Existing to be removed	N/A	Yes
277–280	Existing to remain	N/A	No
281	Existing to remain	N/A	No
282	Hybrid	95	No
283	TSP, DE	85	No
284	Hybrid	85	No
285	Hybrid	95	No
286–290	Hybrid	90	No
291	Hybrid	100	No
292	Hybrid	100	No
293	Hybrid	90	No
294	Hybrid	100	No
295	Hybrid	95	No
296	Hybrid	90	No
297	Hybrid	95	No
298	Hybrid	100	No

Table 1.8-2 Palermo–East Nicolaus Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
299	TSP, Transp.	80	No
300	Existing to be removed	N/A	No
301	Hybrid	100	No
302	Hybrid	95	No
303	Hybrid	95	Yes
304	Hybrid	95	Yes
305	Hybrid	120	Yes
306, 306A–I	Existing to remain	N/A	Yes

Notes:
DE = dead end
LSP = lattice steel pole
SW = switch
Transp. = conductor transposition
TSP = tubular steel pole
[1] The term *urban area* is defined in Section 1.8.5.8, Nighttime Construction. The applicant would limit nighttime work (work done after 7:00 pm and before 7:00 am) to outside of urban areas.

Table 1.8-3 Palermo–Pease Line Structures to be Replaced, Left in Place, or Removed

Structure Nos.	Structure Type	Proposed Structure Height (Ft.)	Urban Area [1]
70A	TSP, DE	80	No
71	Existing to be removed	N/A	No
71A	Hybrid	95	No
72	Existing to be removed	N/A	No
72A	TSP, DE	70	No
201	TSP, SW	75	No
214	Existing to remain	N/A	Yes
214A	TSP, SW	80	Yes
215	Existing to remain	N/A	Yes

Notes:
DE = dead end
SW = switch
TSP = tubular steel pole
[1] The term *urban area* is defined in Section 1.8.5.8, Nighttime Construction. The applicant would limit nighttime work (work done after 7:00 pm and before 7:00 am) to outside of urban areas.

1.8.5 Construction

This section describes construction methods to be used for this project. Reconstruction work on the project would include the following general types of activities:

- Structure replacement/modifications

- Temporary crossing structure installation
- Wire pulling and tensioning
- Tower demolition/removal
- Structure replacement and reconductoring work area development
- Material/equipment staging and lay-down area development
- Access to all these activity areas

Construction is expected to take 12 to 18 months. Tables 1.8-4 to 1.8-6 provide specific details about project construction.

Table 1.8-4 Site Grading and Soil Excavation

Construction Phase	Maximum Daily Grading Acres	Total Acres for Whole Project	Maximum Daily Excavation (CY)	Total Excavation (CY) for Whole Project
Construction of staging areas/helicopter landing zones and new temporary roads	1 acre	130	40	40
Existing tower removal and tower site recovery	N/A	N/A[1]	4 CY	1600 CY
Pole site excavation, concrete base construction, and new pole installation	1 acre[2]	100	160 CY[3]	16,000 CY
Transmission line installation	N/A[4]	N/A	N/A	
Staging areas/helicopter landing zones recovery	1 acre	109	N/A	

Notes:
1 Part of the area being disturbed for new construction.
2 Assumes 4 poles per day max with a 50x200 area.
3 Assumes 40 cubic yards (CY) per structure.
4 Assumes pull sites included in staging areas.

Table 1.8-5 Soil Disposal and Concrete Importing

Construction Phase	Maximum Daily Exported Soil (CY)	Total Exported Soil (CY) for Whole Project	Maximum Daily Imported Concrete (CY)	Total Imported Concrete (CY) for Whole Project
Construction of staging areas/helicopter landing zones and new temporary roads	N/A[1]	0	N/A[2]	0
Existing tower removal and tower site recovery	Included above	0	N/A	0
Pole site excavation, concrete base construction, and new pole installation	Include above	0	80 CY	3,000 CY
Transmission line installation	N/A	0	N/A	0
Staging areas/helicopter landing zones recovery	None[3]	0	None	0

Notes:
1 Minor scraping for weed abatement and grading only. Soil would not be exported.
2 No concrete but may import rock base for locations that are expected to be used during the wet months. If needed, assume 5” cover over entire area.
3 Only grading would be required at these sites.

Table 1.8-6 On-Road Construction Equipment and Material Delivery Trucks (Except Dump Trucks for Exported Soil and Concrete Trucks for Imported Concrete)

Construction Phase	Maximum Daily Delivery Trucks	Total Delivery Trucks for the Project
Construction of staging areas/helicopter landing zones and new temporary roads	5	50
Existing tower removal and tower site recovery	5	500
Pole site excavation, concrete base construction, and new pole installation	10	1,000
Transmission line installation	5	500
Staging areas/helicopter landing zones recovery	2	20

1.8.5.1 New Structure Installation/Tower Removal

The hybrid pole design proposed for use at the majority of locations along the project alignment enables a two-part installation process that would reduce the length of time that the existing lines need to be taken out of service (line clearances). A concrete base can be installed separately from the steel top and can usually be done without taking a line clearance, although installing the upper pole segment would still require a line clearance. Each hybrid pole hole would be augured to a maximum diameter of 7.5 feet and a depth of approximately 20 feet; the pole hole would be compacted with road base and slurry after the pole is inserted.

The project would be constructed in segments to balance taking the existing lines out of service as well as environmental seasonal constraints. The poles would be 80–120 feet tall when complete and would be well suited to conditions encountered in the field (prolonged inundation and/or saturated soils associated with wetlands and rice crops).

Installation of the hybrid poles, TSPs, and LSPs involves these steps.

- Staking the pole location.
- Flagging the work area.
- Installing silt fencing (if required).
- Preparing the crane pad (if required).
- Excavating the hole (all structures would have a maximum 7.5-foot diameter excavation).
- Installing forms, rebar, and anchor bolts (for TSP and LSP structures).
- Pouring concrete.
- Removing forms.
- Placing gravel around and grooming the base area.
- Installing the new pole.
- Removing the old conductor and stringing the new conductor.
- Spreading the excess soil on site and trucking other construction materials offsite for disposal.

Hybrid poles would not require forms, rebar, and anchor bolts.

The existing lattice steel towers would be dismantled and removed upon new structure completion and transfer of conductor. A crane or helicopter would be used to take down the tower and remove it from the project area. Where removal could otherwise cause extensive environmental impacts, towers would be partially dismantled, with the bases left behind (e.g., towers with large elderberry shrubs growing within the tower footprint). Tower footings would be cut down to below ground level or left depending on the environmental sensitivity of the site.

Installation of wood poles (shoo-flys) involves these steps.

- Staking the pole location.
- Flagging the work area.
- Excavating a two to three foot diameter hole.
- Installing the pole.
- Backfilling with native spoils or gravel.
- Transferring wire and equipment.
- Removing the pole.
- Backfilling.

Pole locations would be sited to avoid environmentally sensitive areas. At each pole location, the work area would be flagged by the applicant and/or the environmental monitor prior to construction. For pole installations near wetlands, riparian habitat, or special-status plant or wildlife habitat, a biological monitor (a trained professional biologist) would approve the type and placement of environmental protections and would monitor the area during construction activities.

A work area of about a 25-foot radius around each pole would be required. Some work areas may require removal of vegetation and installation of silt fencing (e.g., during the wet season). Work areas around transmission poles generally would not require grading or surfacing. Some areas that are saturated or inundated with water for prolonged periods (e.g., wetlands and rice crops) would require dewatering to minimize impacts on wildlife during pole installation. The installation of temporary berms would be needed for some wetland and rice cropland areas to be dewatered.

1.8.5.2 Conductor Replacement

Conductor pull and tension sites would be regularly spaced along the alignment. This activity is usually the last step in the construction process and entails either stringing the new structures with pulling rope or using the existing conductor to pull the new one through. If the new conductor cannot be pulled through using the existing conductor, then a helicopter or crane can be used to install the rope onto rollers that are affixed to the end of insulators where the conductor is normally attached. The rope is flown along and snapped into each roller or placed with a crane and then is pulled onto the tension spools with the new conductor behind it.

Locations where the alignment crosses busy roadways, railroads, and other aerial utilities would first have crossing guard structures installed to keep the conductor from falling down across those areas while pulling. The existing conductor would be placed in a hoist and attached at one end to the steel tower to support the down strain load, hence removing load on the existing insulator strings. The old insulators would be removed and new insulators placed, along with conductor rollers. Rollers and insulators would be brought in by truck or helicopter to each tower site.

In sensitive areas, monitors would coordinate with ground crews to determine appropriate access. The crew may be required to access some towers on foot and by pick-up trucks, or materials may be delivered by helicopter. With the roller in place, the hoist would lower the existing conductor into the roller. When all rollers have been installed in a given section of the tower line, a cable would be attached from the puller truck to one end of the conductor; new conductor would be attached to the existing conductor at the opposite end of the pull section, and the reconductoring process would begin. The old conductor would be removed while the new conductor was simultaneously pulled in.

Once the new conductor is in place, the crews would sag the new conductor, clip it into the new insulators, and remove the rollers from the section. Helicopters would also be used to remove the rollers and to clip in the new conductor to the insulators.

The pull and tension sites may require preparation. Temporary crane pads may need to be built if the terrain would not allow for safe operation of a crane. The size of the pad would vary based on the terrain. Pull/tension sites would consist of a relatively flat area in line with the conductor. Where possible, these sites would be placed on previously disturbed areas. Minor grading may be required to establish these sites. Matting traditionally used for wetland crossings or rock would be placed if wet conditions are forecast. Disturbed areas would be recontoured and reseeded as necessary. Water baffles and other erosion control measures would be used as necessary to minimize erosion during work at the sites during the wet season.

The equipment at the pull site would be utilized for four pulls, two in one direction and two in the other. Equipment includes rope trucks or tensioners, reels of conductor to receive the old conductor as it is removed, reels of new conductor to feed out, and trucks or other equipment to handle the weight of the conductor reels and to move them on and off site.

Due to the environmental sensitivity of critical vernal pool habitat and similar areas, efforts would be made to minimize any construction impact at these locations. Whenever possible, vehicles would remain on established roadways. To the extent possible, previously disturbed areas would be utilized for access and work sites. When off-road access is necessary, vehicles and equipment would stay within designated routes and utilize construction mats. Vehicles would include pick-up trucks, tensioner and cable pullers mounted on a line truck, and a rubber-tired crane truck or helicopter. No grading would be performed at sensitive sites.

1.8.5.3 Crossing Structures

Crossing structures would be installed at all major road, railroad and other aerial utility crossings along the alignment to prevent injury or damage from the inadvertent falling of the conductor.

These structures typically consist of paired, single-Y configured pole structures, or paired wood poles with cross bracing designed to catch falling conductor; a network of cables and netting may also be tied into these poles. A line truck would be used to auger and set the required number of wooden poles on each side of a crossing; these poles may also be guyed for stability. In some instances boom vehicles/equipment would be used instead of utility poles to catch any falling conductor.

These structures would be installed along roadsides in disturbed areas and would cause relatively little disturbance. These protective structures would be installed from paved roads whenever possible. Where this is not possible, guard and crossing structure sites would be accessed on existing dirt roads and installed in such a way to minimize soil disturbance. Following reconductoring activities, crossing structure poles would be removed, the holes backfilled, and the disturbed areas recontoured and reseeded as necessary.

Near sensitive areas, monitors would coordinate with ground crews to determine appropriate placement of structure poles. Features to be avoided would be flagged. If sensitive areas cannot be avoided, temporary footings may be used to hold the poles in place in lieu of auguring holes.

1.8.5.4 Access

Access to the staging areas would primarily be by existing major roadways suitable for truck traffic, including highways, county roads, and other major roadways.

Construction crews would use existing paved or graveled roads along most of the transmission line corridor to access tower/pole sites; these include existing paved roads and farm roads, in addition to existing maintenance access to the existing transmission lines. Where necessary, existing access roads would be widened to a maximum of 16 feet, and new, temporary, access roads would be constructed; where ground conditions allow, crew would simply follow a designated overland route that would not require improvements. In environmentally sensitive areas, new, temporary access roads would be restored to pre-construction conditions. Stream crossings would be designed as described in Table 1.8-7, below, as needed. Where restrictions on vehicular use and heavy equipment use are noted, foot traffic and helicopter use would still be acceptable.

Table 1.8-7 Proposed Stream and Wetland Crossings

Tower Access	Type of Crossing	Construction/Design	Construction Constraints
Towers 10–12	Mats/plating	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	Vehicular traffic and heavy equipment use would be scheduled for the dry season; crews would implement mitigation as necessary to avoid significant damage or soil compaction within features along route. If work during the wet season is required because of the construction schedule, work would only occur in the areas specified in Appendix B-2.
Towers 44–50	Mats/plating	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	
Towers 54–64	Mats/plating	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	
Towers 66–69	Repair existing road (washouts), plating	The existing roadway has been damaged by erosion and would be improved for construction; one existing narrow culvert may require plating to accommodate larger/heavier vehicles.	
Towers 70–71	Mats/plating/ bridge	Mat, plate, or bridge over small seasonal stream.	

Table 1.8-7 Proposed Stream and Wetland Crossings

Tower Access	Type of Crossing	Construction/Design	Construction Constraints
Towers 73–82	Mats/plating/ bridge	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	
Towers 83–86	Repair and widen existing road, plating	The existing roadway is inadequate for construction and would be temporarily improved and widened for construction; existing narrow culverts/irrigation valves may require plating to accommodate larger/heavier vehicles.	
Towers 89–96	Bridge	The existing access road has several "wet" crossings (cobble base) that may be impassible for larger/heavier construction vehicles, therefore portable bridges (that would span top of bank to top of bank) are proposed.	Vehicular traffic and heavy equipment use to be scheduled for the dry/low flow season. If bridging is not possible, construction would utilize sky crane helicopters to transport materials to job sites. If work during the wet season is required because of the construction schedule, work would only occur in the areas specified in Appendix B-2.
Towers 97–98	Plating/bridge	One existing narrow culvert may require plating to accommodate larger/heavier vehicles.	Vehicular traffic and heavy equipment use would be scheduled for the dry season; crews would implement mitigation as necessary to avoid significant damage or soil compaction within features along route. If work during the wet season is required because of the construction schedule, work would only occur in the areas specified in Appendix B-2.
Towers 117–125	Plating/bridge	Option 1: Plate across narrow irrigation canal that runs parallel to and adjacent tower line to create a work surface over canal segment at each tower site. Option 2: Create a plated crossing (or use bridge) to cross onto the east side of the tower line (across ditch) and travel up that side from tower to tower; crossings would be set up at intervals along this tower line segment to accommodate the work.	
Towers 231–276	Mats/plating	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	Vehicular traffic and heavy equipment use to be scheduled for dry season; crews would implement mitigation as necessary to avoid significant damage or soil compaction within features along route. Many of the previously identified features along this segment of line have been eliminated or severely altered by recent highway and levee construction projects; an existing access is now present along the tower bases. If work during the wet season is required because of the construction schedule, work would only occur in the areas specified in Appendix B-2.

Table 1.8-7 Proposed Stream and Wetland Crossings

Tower Access	Type of Crossing	Construction/Design	Construction Constraints
Towers 288–291	Mats/plating	Route designed to avoid/minimize impacts on identified features; crews would lay mitigation down to cross features along route that cannot be avoided (as soil conditions dictate).	As the construction schedule allows, vehicular traffic and heavy equipment use to be scheduled for dry season; crews would implement mitigation as necessary to avoid significant damage or soil compaction within features along route. If work during the wet season is required because of the construction schedule, work would only occur in the areas specified in Appendix B-2.

Encroachment permits would be obtained from the California Department of Transportation (Caltrans) and the appropriate counties for crossing of jurisdictional roadways or highways. In addition, a Stormwater Pollution Prevention Plan (SWPPP) would be written for the entire project as described in APM HYDRO-1, and workers would receive written and tailboard instructions on the plan.

Traffic control may be required for work along major roadways. All required permitting and notification would be made to comply with permit conditions. Occasionally, it may be necessary to temporarily close one lane of traffic, and appropriate traffic control and safety measures would be taken. A traffic control plan would be prepared according to Caltrans requirements and submitted for approval by the local County Public Works Departments.

Helicopters (light and heavy duty) would be used to remove and deliver structures, materials, equipment, concrete, and workers to pole locations and to other locations where vehicular access is difficult because of topography and vegetation. Helicopters would be used to install poles in locations where overland access would not be possible or difficult due to terrain. Prior to construction, laydown/staging/helicopter landing areas would be prepared to provide space for materials delivery, storage, and preparation; equipment storage; and crew parking as shown in Table 1.8-8. Helicopters would use the temporary landing areas to pick up and drop off crew and materials as well as to stage and refuel.

Table 1.8-8 Laydown, Staging, Landing, and Pull Sites

Type of Construction Site	Area per Site	Number of Sites
Laydown / Staging / Helicopter Landing [1]	1.24–7.41 acres	16
Pull Sites	0.27–2.4 acres	16

Note:
[1] A minimum area of 200 by 200 feet would be required within the staging area for helicopter clearance.

Laydown, Staging, Helicopter Landing, and Pull Sites

Various pull and tension sites are planned along the project alignment (Table 1.8-8). Figures 1.8-2a to 1.8-2f and Appendix B-1 identify work areas, including pull and tension sites.

Prior to transmission line construction, approximately 16 laydown/staging/helicopter landing zone areas roughly 1.24 acres each would be prepared to provide space for materials delivery, storage, and preparation; equipment storage; crew parking prior to installation. If construction activities were to take place during winter, areas would be winterized to allow for construction activities to proceed. Upon completion of the project, the areas would be left as agreed to by the property owner. The site layouts would be approved by the project's environmental monitor, and work crew activities would follow all of the applicant's environmental guidelines. Staging areas would be set back at least 50 feet from streams, creeks, or other water bodies to avoid impacts to riparian habitat.

1.8.5.5 Cleanup and Post-Construction Restoration

Crews would be required to maintain clean work areas as they proceed along the line and would be instructed that no debris may be left behind at any stage of the project. The cleanup and restoration process would include reseeding disturbed areas to restore the landscape. In many cases, the land would be left for replanting of crops by landowners/land managers of agricultural lands.

Once the cleanup has been completed, on a case by case basis, the work areas would be inspected on foot with the specific property owners to make sure that their concerns have been addressed. When all construction is completed, there would be a final walk down of the work areas with the crews and the biological monitor to ensure that proper cleanup and landscape restoration has been carried out. The final walk down would include access roads, pull sites, landing zones, staging areas, and pole locations.

Project Damage Assessment and Resolution Program

As part of the applicant's Project Damage Assessment and Resolution Program and per the applicant's right-of-way joint use policy, farmers would be fully compensated for the temporary loss of the portion of their land affected by the project; furthermore, any damage to or removal of orchard trees would also be fully compensated.

1.8.5.6 Construction Workforce and Equipment

Equipment that may be used includes: a line truck, water truck, four-wheel–drive pick-ups, 70-ton crane, helicopter, auger, bulldozer, hand tools, rope truck for reconductoring, and a truck-mounted rope puller and conductor tensioner. Project construction would require an excavation crew, a light-duty helicopter crew, a heavy-duty helicopter crew, a pole crew, line crew, substation crew, and environmental monitor. Table 1.8-9 describes the maximum number of construction workers needed daily for each construction phase. Table 1.8-10 describes the roles of each crew.

Table 1.8-9 Construction Workers

Construction Phase	Maximum Daily Workers
Construction of staging areas/helicopter landing zones and new temporary roads	30
Existing tower removal and tower site recovery	30
Pole site excavation, concrete base construction, and new pole installation	50
Transmission line installation	30
Staging areas/helicopter landing zones recovery	20

Table 1.8-10 Crews Expected To Be Used during Project Construction

Crew	Roles
Excavation	The excavation crew would be a contract crew to PG&E responsible for development of the staging areas, access roads, and pull sites. In addition, the excavation crew would perform construction cleanup activities.
Light-duty helicopter	The light-duty helicopter crew would be a contract crew to PG&E responsible for Federal Aviation Administration (FAA) permits, the helicopter (including maintenance and refueling), transporting work crews and materials to pole sites, and removal and installation of the sock line, as needed.
Heavy-duty helicopter	The heavy-duty helicopter crew would be a contract crew to PG&E responsible for FAA permits, the helicopter (including maintenance and refueling), transporting new poles to pole sites, and installation of poles using a sky crane, as needed.

Table 1.8-10 Crews Expected To Be Used during Project Construction

Crew	Roles
Tower	The tower crew (either a PG&E or contract crew) would be responsible for the excavation contractor, the heavy-duty helicopter contractor, the light-duty helicopter contractor, the development of pole-related staging areas, installation of steel pole foundations, and installation of transmission line steel poles.
Line	The line crew (either a PG&E or contract crew) would be responsible for managing an excavation crew and a light-duty helicopter crew, development of line-related staging areas, establishment of pull and tension sites, installation of rollers and crossbeams, removal/installation of the sock line, replacement of wood poles, and installation of new conductor.
Environmental and biological monitors	The environmental monitor would be a contractor to PG&E and would be responsible for inspection of all project construction activity, including inspection of work sites prior to the start of construction activity, monitoring of activities and cleanup, preparing and submitting California Public Utilities Commission (CPUC) compliance reports, and otherwise ensuring compliance with the CPUC Permit to Construct. If warranted, a qualified biological monitor would be used in areas with sensitive biological resources.

Table 1.8-11, Table 1.8-12, and Table 1.8-13 present specific information regarding equipment expected to be used during project construction.

Table 1.8-11 Equipment Expected To Be Used during Project Construction

Type of Equipment	Use
Aerial lifts	Remove old conductor and install new
Backhoe	Excavate foundations, spoil removal, backfill
Boom truck	Erect structures
Low Drill	Auger foundations
Concrete mixer truck	Haul concrete
Crane	Erect structures
Crew-cab truck/pick-ups	Transport personnel, tools, and materials
Dump truck	Haul material
Equipment/tool vans and cargo containers	Tool storage
Grooming/grading equipment: Dozer, water truck, line truck, loader, grader, rock transport, roller	Road construction (staging, pull sites): Move/compact soils, compact soils and control dust, properly pitch road for run-off, deliver road base for access roads, staging areas, and pull sites, compact road and surfaces
Helicopters (light and heavy duty)	Erect poles, install sock line, haul materials, equipment, and people
Hole auger	Excavate holes
Line truck and trailer	Haul conductor, poles, equipment, materials, and people, and to install pole/conductor
Materials storage units	Store material/tools
Mobile offices	Supervision and clerical office
Puller	Install conductor
Reel dolly	Install and move conductor
Tensioner	Install conductor

Table 1.8-12 On-Site Construction Equipment and Usage

Construction Phase	Equipment Type and Pieces	Operation Hours/Day	Total Operation Days for Whole Project
Construction of staging areas/helicopter landing zones and new temporary roads	D-8 or similar bulldozer, grader, loader, backhoe, dump truck, line truck and pick-up truck	12 hrs	120

Table 1.8-12 On-Site Construction Equipment and Usage

Construction Phase	Equipment Type and Pieces	Operation Hours/Day	Total Operation Days for Whole Project
Existing tower removal and tower site recovery	Backhoe, bulldozer, grader, line truck, dump truck, crane, helicopter and pick-up truck	12 hrs	120
Pole site excavation, concrete base construction, and new pole installation	Digger, backhoe, crane, concrete truck, dump truck, line trucks, helicopter and pick-up truck	12 hrs	300
Transmission line installation	Crane, line truck, pick-up truck and helicopter	12 hrs	200
Staging areas/helicopter landing zones recovery	D-8 or similar bulldozer, grader, loader, backhoe, dump truck , line truck and pick-up truck	12 hrs	100

Table 1.8-13 Helicopter Usage

Construction Phase	Helicopter Type	Pieces and Type/Make	Operation Hours/Day	Total Hours for Project
Existing tower removal and tower site recovery	Heavy Duty Light Duty	2-Bell 214 2-Hughes 500	4 Hours 4 Hours	200 640
Pole site excavation, concrete base construction, and new pole installation	Heavy Duty Light Duty	1-Bell 214 2-Hughes 500	4 Hours 4 Hours	400 800

1.8.5.7 Construction Schedule

Table 1.8-14 provides a summary of the currently proposed construction schedule phases for the project. The construction period for the transmission line is expected to last approximately 12–18 months. Project construction would be performed in approximately six geographic stages along the line, with each stage ranging from one to three months in duration.

Table 1.8-14 Average Duration of Construction Phases

Construction Phase	Average Duration (Days) for Each Segment
Construction of staging areas/helicopter landing zones and new temporary roads	30 days
Existing tower removal and tower site recovery	Would be done in stages, top portion of the tower would be removed when new structures are built; the remainder of the tower and foundations would be removed later, 3 days per tower, followed by site remediation as required.
Pole site excavation, concrete base construction, and new pole installation	Foundations for TSPs require 5 days per, then return to install new pole about 2 days. Hybrid poles- install concrete bottom 1 day and then return to install steel top and transfer conductors- 1 day per.
Transmission line installation	Conductoring requires two to four weeks per phase.
Staging areas/helicopter landing zones recovery	Assume one week per site.

The construction schedule would be determined by the project’s environmental requirements and electric line clearance restrictions. Pending the outcome of environmental review and permitting, construction activities are proposed to begin late 2010 or early spring 2011. It is anticipated (due to the various environmental and operational restrictions) that construction would occur year round but would be seasonal along certain portions of the project alignment. Up to ten or more construction crews (one crew per structure installation/removal site) may be working on the project at any time in order to meet the project construction schedule.

1.8.5.8 Nighttime Construction

In some areas, work would be conducted at night to reduce impacts from temporary electrical outages that would be required for project construction. The applicant would limit nighttime work (work done after 7:00 pm and before 7:00 am) to outside of *urban areas* (Figures 1.8-2a to 1.8-2f, Tables 1.8-2 and 1.8-3). To ensure that there would not be substantial effects on wildlife, lighting would be restricted to those areas necessary for worker safety and task execution, would be directional and shielded as feasible to avoid intrusion into non-necessary work areas and adjacent habitat, and would be situated to avoid light trespass on aquatic habitat.

The applicant has stated that the only construction activities that would occur at night would be those required to raise towers. A maximum of three crews would work simultaneously with each crew raising one tower. The crews would work in 12-hour shifts. The majority of construction staging activities, including onsite and offsite vehicle movement, would occur during the day. Nighttime construction would only occur from June 1st to October 1st.

Urban Areas

The applicant identified urban areas based on an evaluation of aerial photographs, zoning maps, and general plan maps (Figures 1.8-2a to 1.8-2f, Tables 1.8-2 and 1.8-3). Field survey data was considered to account for changes along the project route since the aerial photographs were taken. For the purposes of this Initial Study, areas were designated as urban if they had:

1. A concentration of more than two residential units that each fronted a street in an area of single family residential density;
2. At least five residential units per acre;
3. A zoning or general plan designation of residential; or
4. Single residences on large lots that did not appear to be used for routine agricultural production and were located near other residential lots.

Shielding

Nighttime construction lighting would be shielded with cutoffs or shades. There would be two primary types of lights used for nighttime construction. For general work-area illumination, the applicant would use mobile light towers. These types of towers are generally directional and are shielded on the sides and back. For illumination of specific work areas, the applicant would use directional spotlights that the applicant anticipates would be shielded on the sides. The applicant would consult with onsite biological experts and monitors to position and direct lights to minimize intrusion on adjacent sensitive habitats to the extent feasible with regard to workplace safety.

1.8.6 Operation and Maintenance

The regular inspection of transmission lines, instrumentation, and control and support systems is critical for safe, efficient, and economical operation of electric transmission facilities. Early identification of items needing maintenance, repair, or replacement would ensure continued safe operation of the project and continued reliable service to the uniform process used for transmission lines.

No additional maintenance is required as a result of the project beyond the existing ongoing maintenance. The existing maintenance process involves three types of inspections: aerial inspection, ground inspection, and climbing (aerial and climbing only if there was a problem or a ground inspection indicates the need for a closer inspection). The frequency of inspection may vary depending on factors such as the age of the system, pole type, vegetation conditions, and other factors. For the transmission lines, it is generally assumed that the applicant's troublemen would inspect all structures from the ground annually for corrosion, misalignment, deterioration, and foundation failures. In addition, ground inspection would occur on selected lines to check the condition of hardware, insulators, and conductors. Inspection would include checking conductors and fixtures for corrosion, breaks, broken insulators, and failing splices. The applicant would conduct inspections by driving to the poles in a pick-up truck where feasible.

Troublemen would use an all-terrain vehicle or go by foot where needed to minimize surface disturbance and in certain areas where access is difficult. Aerial inspection using helicopters may be conducted (if conditions indicate the need) annually using infrared technology. Any specific access requirements that may result from right-of-way negotiations with property owners would be documented and provided to the troublemen with instructions to comply with these access requirements during inspection and maintenance. (For more detail, please refer to the applicant's Overhead Line Inspection Guideline).

Maintenance of the transmission line would be generally on an as-needed basis, when the troublemen discover something needing repair or in response to an emergency situation. Specific access requirements that may result from right-of-way negotiations with property owners would be documented and provided to the transmission line troublemen, with instructions to comply with these access requirements during inspection and maintenance.

The applicant's vegetation management inspector would inspect and document vegetation conditions annually. Where needed, vegetation inspections may be conducted more frequently.

1.8.7 Project Design Considerations/Applicant Proposed Measures (APMs)

As part of the applicant's standard construction practices, environmental commitments have been incorporated into the project design and would be implemented to avoid or minimize impacts. The applicant has proposed resource-specific measures to ensure that potential impacts are less than significant. These applicant-proposed measures (APMs) are included in Table 1.8-15.

1.9 Surrounding Land Uses and Setting

The project setting is primarily rural, with surrounding agricultural fields and low density residential within the unincorporated areas of Butte, Yuba, and Sutter counties in northern California. The cities of Oroville, Marysville, Yuba, and Olivehurst surround the project. The approximately 45 mile project route crosses the following water features from north to south: Wyandotte Creek, North Honcut Creek, South Honcut Creek, Jack Slough, Yuba River, Reeds Creek, Dry Creek and Bear River. The project is located entirely within existing easements.

Table 1.8-15 Applicant Proposed Measures (APMs)

APM AIR-1	Implement best management practices to reduce construction tailpipe emissions. The applicant would implement all applicable and feasible measures to reduce tailpipe emissions from diesel-powered construction equipment. This requirement would be incorporated into the construction contract for the Project. Applicable and feasible measures include: • Maximize use of diesel construction equipment meeting CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines. • Use emission control devices at least as effective as the original factory-installed equipment. • Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors. • Substitute gasoline-powered for diesel-powered equipment when feasible. • Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. • In the event that line-stringing activities would be required during peak ozone season, ground equipment would be used in place of helicopters, where practicable.
APM AIR-2	Implement mitigation measures for construction fugitive dust emissions. The applicant would implement all applicable and feasible fugitive dust control measures required by FRAQMD and BCAQMD including those listed below. This requirement would be incorporated into the construction contract for the Project. Applicable and feasible measures include: • Watering all active construction sites at least twice daily in dry conditions, with the frequency of watering based on the type of operation, soil, and wind exposure. • Prohibit all grading activities during periods of high wind (over 20 miles per hour). • On-site vehicles limited to a speed that minimizes dust emissions on unpaved roads. • Cover all trucks hauling dirt, sand, or loose materials. • Cover inactive storage piles. • Install wheel washers at the entrance to construction sites for all exiting trucks. • Sweep streets if visible soil material is carried out from the construction site. • Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person would respond and take corrective action within 48 hours. The phone number of the FRAQMD and BCAQMD also would be visible to ensure compliance with FRAQMD and BCAQMD rules regarding nuisance and fugitive dust emissions. • Limit the area under construction at any one time.

Table 1.8-15 Applicant Proposed Measures (APMs)

APM AIR-3	Minimize greenhouse gas emissions during construction. The applicant would incorporate the following measures into the construction contract to reduce greenhouse gas (and other air pollutant) emissions: • Encourage the use of biodiesel fuel for diesel-powered equipment and vehicles. • Encourage construction workers to carpool. • Encourage recycling construction waste.
APM AIR-4	Implement SMMs. The applicant would implement all feasible SMMs, including: • A fugitive dust control plan would be prepared and submitted to the FRAQMD and BCAQMD prior to the start of construction work. • Construction equipment exhaust emissions shall not exceed FRAQMD Rule 3.0, Visible Emissions or BCAQMD Rule 201, Visible Emissions. Operators of vehicles and equipment found to exceed opacity limits shall take action to repair the equipment within 72 hours or remove the equipment from service. • The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation. • Minimize idling time to 5 minutes. • When possible, utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators. • Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites. During construction, demonstrate to the CPUC-designated environmental monitor that the required local permits were obtained for all roadway encroachment locations. • Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require CARB portable equipment registration with a state or local air district permit. The owner/operator shall be responsible for arranging appropriate consultations with CARB or the local air district to determine registration and permitting requirements prior to equipment operation at the site.
APM AIR-5	Implement all Appropriate BAMMs. The applicant would implement all feasible BAMMs. These measures include the following: • The applicant would assemble a comprehensive inventory list (i.e. make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower [hp] and greater) that would be used an aggregate of 40 or more hours for the construction project. • The applicant would provide a plan for approval by FRAQMD and BCAQMD demonstrating that heavy-duty (equal to or greater than 50 hp) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, would achieve a project wide fleet-average 40 percent NOx reduction and 45 percent particulate reduction compared to the most recent ARB fleet average at time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district offsite mitigation projects, and/or other options as they become available. The FRAQMD and BCAQMD would be contacted to discuss alternative measures.

Table 1.8-15 Applicant Proposed Measures (APMs)

	• An operational water truck would be onsite at all times to apply water to control dust as needed to prevent dust impacts offsite. • No open burning of removed vegetation during infrastructure improvements. Vegetative material should be chipped or delivered to waste to energy facilities.
APM AIR-6	Avoid concurrent daytime and nighttime construction emissions. To reduce impacts at any one location, daytime project construction work would not be allowed on the day proceeding or on the day after nighttime project construction work that occurs in the same air district as the daytime construction work.
APM BIO-1	Conduct a preconstruction tree survey and avoid or compensate for tree removal. Prior to construction, the applicant would conduct a tree survey to map and identify any protected trees in the Project that may be affected by the project. If feasible, the identified trees would be avoided during construction. If avoidance is not feasible, trees would be replaced or compensation would be provided, as stipulated in applicable local regulations.
APM BIO-2	Implement general protection measures for wetlands and other waters. During construction, the applicant would implement the following general measures to minimize or avoid impacts on wetlands and other waters: • Establish exclusion zones and minimize the amount of area disturbed to the minimum amount necessary to complete the work. • Restrict travel to established and temporary roads and work areas. • Restrict construction personnel and equipment from entering fenced protected areas. • Conduct all fueling of vehicles at least 100 feet from water bodies and 250 feet from wetlands and vernal pools. • To the extent feasible, complete road construction in wetlands and other waters in the dry season, generally from June 1 to October 15. If it is not feasible to complete road construction work during the dry season, appropriate erosion control measures for the site would be used. Additionally, the applicant or its contractor would prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter Counties. These BMPs would be selected to achieve maximum sediment removal and represent the best available technology (BAT) that is economically achievable. (See APM HYDRO-1).
APM BIO-3	Conduct mandatory contractor/worker awareness training for construction personnel. Before the start of construction activities, the applicant shall ensure that a qualified biologist would conduct mandatory contractor/worker awareness training for construction personnel. The awareness training would be provided to all construction personnel to brief them on the need to avoid impacts on wetlands and on the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor would ensure that the personnel receive the mandatory training before starting work.
APM BIO-4	Install construction barrier fencing to protect wetlands and other waters adjacent to the project area. The applicant or its contractor would install construction barrier fencing that clearly identifies wetlands that are to be avoided. Wetlands located within work areas would be fenced off to avoid disturbance in these areas. Before construction, the construction contractor would work with the project engineer and a resource specialist to identify the locations for the barrier fencing and would place stakes around the wetland areas to indicate their locations. The protected area would be designated an environmentally sensitive area and clearly identified on the construction specifications. Temporary fences would be furnished, constructed, maintained,

Table 1.8-15 Applicant Proposed Measures (APMs)

	and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer.
APM BIO-5	Restore temporarily impacted wetlands and other waters to pre-construction condition. • Minimize ground disturbance wherever possible. • Remove construction materials. • Save and replace topsoil and re-grade where necessary to pre-construction topographic contours. • Re-seed with native local weed-free seed source in highly disturbed areas.
APM BIO-6	Monitor during and after disturbance in wetlands and other waters. • Monitor to avoid travel through wetlands and other waters wherever possible. • Monitor to assure that restoration to pre-construction condition is completed. • Monitor to make sure no noxious weed species are introduced. A Noxious Weed Survey was conducted prior to project initiation which contains a list of pre-existing weeds of concern. If weeds are introduced or spread initiate a treatment plan. • The length of time period for monitoring will be determined in consultation with resource agencies, with a 5 year monitoring period likely to be required.
APM BIO-7	Compensate for permanent impacts on wetlands and other waters caused by new structures. Within the project study area there would be 56 new structures placed in wetlands and other waters. The placement of the new structures would result in a total of 0.054 acres of permanent impacts on wetlands and other waters. The applicant would compensate for permanent impacts on wetlands and other waters to ensure no net loss of wetland habitat functions and values. The compensation would be provided at a minimum ratio of 1:1 (1 acre restored or created for every acre filled), but final compensation ratios would be based on site-specific information and determined through coordination with 1) the U.S. Army Corps of Engineers (USACE), in consultation with the U.S. Fish and Wildlife Service (USFWS) for the Section 404 and Section 7 permit process; and 2) the California Department of Fish and Game (DFG) for the 2081 permit and Streambed Alteration Agreement. Compensation may be a combination of onsite restoration, offsite restoration and creation, and mitigation credits. Onsite creation will not be considered. The applicant would retain an environmental consultant with the appropriate design/engineering experience (e.g., restoration ecologist, hydrologic engineer, landscape architect) as needed to evaluate the project study area and determine if onsite wetland habitat restoration/creation is feasible.
APM BIO-9	Avoid impacts on special-status plants. Wherever possible, the project components would be redesigned to avoid impacts to special-status plants. The applicant would, under the direction of a qualified botanist and to the extent possible, adjust the location of work areas, access roads, and other project components to completely avoid impacts on brown fox sedge and other special-status plants that may be located within the study area prior to construction. If this avoidance measure is not feasible, the applicant would implement APM BIO-10 (Minimize impacts on special-status plants) and APM BIO-11 (Compensate for the loss of special-status plants).
APM BIO-10	Minimize impacts on special-status plants. If full avoidance of fox sedge and other special-status plants identified in the project area is not possible during construction, the applicant would minimize impacts by limiting the work area to the smallest area necessary to complete the work and would establish avoidance areas. Avoidance areas would be clearly staked and flagged in the field by a qualified botanist prior to construction. Where temporary disturbance is necessary, the applicant would conduct project activities and necessary ground disturbance in a manner that is consistent with the successful reestablishment of the species to the

Table 1.8-15 Applicant Proposed Measures (APMs)

	extent feasible. A list of specific actions necessary to ensure successful reestablishment of the species following temporary disturbance, and the locations where these actions would be implemented, would be prepared by a qualified botanist prior to construction and implemented during construction. The environmental awareness education program should include information on the location of special-status plants in the project area and the measures that would be implemented to avoid or minimize impacts on the plants.
APM BIO-11	Restore habitat for special-status plants disturbed during construction. If impacts on special-status plants are unavoidable, the applicant would develop a special status plant restoration plan in consultation with DFG and with the USFWS as well in the event that a federally listed plant is found. No impacts to special-status plants would be allowed until agency requirements are determined and implemented. The specific actions necessary would depend on the biology of the species in question and the type of impact; however, the actions would be designed to ensure successful reestablishment of the species following disturbance. The plan would be prepared by a qualified botanist prior to construction and would indicate when and where the actions would be implemented during construction. The plan would include a restoration and reseeding plan specific to the special-status plant habitat which was disturbed.
APM BIO-12	Implement management practices to control the introduction and spread of invasive plants. Prior to construction, the applicant would identify the location of noxious weed species of concern within areas that would be disturbed as part of the project. Appropriate management practices would be designed by a botanist and implemented during construction to reduce the likelihood of spreading already established weeds into new areas or increasing their abundance, and of introducing new weed species to the project area. The SWPPP to be prepared for the project would include best management practices (BMPs) such as using construction equipment that has been cleaned of soil and plant parts, including seeds, before entering the project area; using weed-free straw for erosion control, weed free gravel or fill for road construction, and revegetating with appropriate seed mixes that may include native species and/or sterile nurse crops. A post-construction survey for new weeds in areas that were disturbed during construction would also be conducted. If weed populations not previously found adjacent to project-disturbed areas were found following construction, they would be controlled using the most effective and least environmentally harmful methods. Implementing the management practices described above would reduce potentially significant impacts from invasive plants to a less-than-significant level.
APM BIO-13	Avoid or minimize effects on valley elderberry longhorn beetle during construction. Direct impacts to VELB would be avoided when feasible by minimizing the amount of suitable habitat that would be trimmed or removed. Suitable habitat is considered all elderberry stems greater than one-inch in diameter when measured at ground-level. Work areas and structure locations would be designed or selected such that elderberry shrubs are avoided whenever possible. The transmission line and construction area would avoid potential impacts by spanning riparian forest vegetation along the Yuba River and Bear River where many of the elderberry shrubs in the study area are located. Additional shrubs within the study area are separated from potential project effects by a distinct barrier, such as a railroad or canal. Potential impacts to 44 elderberry shrubs located within 100 feet of the project area but greater than 20 feet from the project area would be avoided through project design and implementation of BMPs. These shrubs are subject to potential indirect impacts from project construction; however, reconstruction and maintenance activities would not require ground disturbance within 20 feet of the drip-lines of these shrubs. The applicant does not expect impacts to VELB habitat located greater than 20 feet from the transmission facilities or project access routes. Potential impacts to 26 elderberry shrubs located within 20 feet of the project area would be minimized through implementation of these measures and as detailed in the Valley Elderberry Longhorn Beetle Conservation Program (PG&E 2003). • A qualified biologist would survey for the presence of elderberry plants within 20 feet of the work area and mark the minimum set-back distance with construction flagging. • Field workers would be briefed on the location of elderberry plants in or near the work area and would

Table 1.8-15 Applicant Proposed Measures (APMs)

	review the appropriate avoidance, protection, and minimization measures.
	• Ground-disturbing activities would include erosion control measures that prevent soil from leaving the work area or encroaching on an elderberry shrub. • A qualified biologist would survey all project access roads prior to conducting routine road maintenance or road grading. Construction vehicles would avoid traveling near elderberry shrubs that are located within 20 feet of an existing or temporary access road. Shrub numbers 1, 3-11, 26, and 55 are located directly beneath existing transmission towers. Most of these shrubs are greater than 25 feet in height, having grown up through and around portions of the tower structures. To avoid potential impacts from traditional demolition, these towers would be dismantled and removed only to ground level where feasible. Where the elderberry shrub has grown into or is entwined with the tower to the extent where the tower cannot be removed completely without trimming the shrub, that portion of the tower would be left in place. In order to protect public safety, the applicant's BMPs call for removal of non-functional facilities. Therefore, this measure would be implemented to the extent feasible without jeopardizing public safety. In general, metal tower structures would be dismantled and removed from the site while concrete footings would remain in place or be dismantled to ground-level.
APM BIO-14	Compensate for loss of valley elderberry longhorn beetle habitat and potential loss of individuals. The applicant would compensate for permanent and temporary loss of habitat and potential loss of individual VELB through participation in the Valley Elderberry Longhorn Beetle Conservation Program (PG&E 2003). The program was developed to compensate for trimming approximately 250 elderberry plants and removing approximately 20 plants per year. The applicant would continue to fund the recovery of VELB and increase habitat through acquisition, restoration, or protection of lands in areas that provide the greatest conservation to the species. Habitat locations identified during technical studies for the project would be added to the applicant's database or VELB habitat. Elderberry shrub locations and project activities would be incorporated in the applicant's biennial monitoring report.
APM BIO-15	Avoid or minimize impacts on habitat for vernal pool species during construction. The applicant would implement measures that would substantially reduce the risk of incidental take of vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot in the project area. Prior to and during construction, the applicant would perform the following actions: • Where feasible, the project would be designed to avoid direct and permanent impacts to vernal pool species and their habitat; new structures would be located outside of suitable habitat features; and work areas and access routes would be designed to avoid vernal pool habitats. • Where existing towers are located within a suitable habitat feature, the removal of those towers would be conducted in a way that minimizes potential ground disturbance. Lattice towers would be removed from habitat using a helicopter or crane lift so that construction equipment would not enter the habitat area. Existing foundations proposed to be removed from habitat would be demolished only to ground level to avoid unnecessary ground disturbances. • Conduct a preconstruction survey for Western spadefoot and monitor construction activities within suitable aquatic habitat. A USFWS-approved biologist would conduct a preconstruction survey in suitable habitat no more than 48 hours before construction and would be onsite during construction activity in potential aquatic habitat. The construction area would be resurveyed whenever there is a lapse in construction activity of two weeks or more. If a Western spadefoot is encountered within the construction work area, the biologist would relocate the frog to a suitable aquatic habitat, outside the construction area. For each spadefoot encountered, the biologist would submit a completed CNDDB field survey form

Table 1.8-15 Applicant Proposed Measures (APMs)

	(or equivalent) to DFG no more than 90 days after completing the last field visit to the project site. • Temporary construction disturbances to vernal pools, seasonal wetlands, and ponds would be minimized to the extent practicable. All project-related vehicle traffic would be restricted to established roads, temporary access roads, or designated construction areas. • Ground-disturbing activities within 250 feet of suitable aquatic habitat would be conducted during the dry season (generally May 1 to October 15) where possible. Work areas where ground disturbing activities would likely be required during the wet season are shown in Appendix B-2. • If construction activities occur during the wet season, temporary silt fencing should be installed at the limits of the affected work areas to prevent amphibians from moving into the work areas. The location of the fencing would be determined by the environmental monitor and the construction supervisor. • An environmental monitor would monitor construction activities within 250 feet of suitable aquatic habitat for vernal pool species. • Plastic monofilament netting (erosion control matting) or similar material would not be used for erosion control or other purposes in the construction area because amphibians may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or hydro-seeding. • The applicant would implement BMPs to prevent sediment from entering aquatic habitat near the work areas. Measures include silt fencing, sterile hay bales, no cleaning of equipment in drainages or other wetlands, and temporary sediment disposal. • Within 1 week of completion of the project, all habitats subject to temporary ground disturbances would be re-contoured, if appropriate in the opinion of the onsite biologist, and re-vegetated to promote restoration of the area to natural conditions.
APM BIO-16	Compensate for impacts to habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Consistent with the USFWS's existing programmatic consultation for vernal pool crustaceans, direct impacts on aquatic habitat for federally listed vernal pool crustaceans will be compensated through habitat preservation at a 2:1 ratio, and creation at a 1:1 ratio. The habitat preservation and creation will be achieved at a USFWS-approved conservation bank, or other location with comparable conservation values, subject to USFWS approval. Adequate funding, monitoring, and adaptive measures will be incorporated into the compensation program that will ensure the protected habitat is conserved in perpetuity.
APM BIO-17	Minimize potential impacts on giant garter snake during construction within suitable habitat. To avoid and minimize impacts on giant garter snake, the applicant would implement the following measures: • As feasible, construction activity within giant garter snake aquatic and upland habitat in and around agricultural ditches would be conducted within the active period for giant garter snakes (between May 1 and October 1). Depending on weather conditions and consultation with USFWS and DFG, it may be possible to extend the construction period into mid or late October. This would reduce direct impacts on the species because the snakes would be active and may respond to construction activities by moving out of the way. • Prior to any construction within suitable giant garter snake aquatic habitat (agricultural ditches), the habitat would be dewatered and must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of dewatered habitat. • A USFWS-approved biologist would conduct a preconstruction survey in suitable habitat no more than 24 hours before construction and would be onsite during construction activity in potential aquatic and upland habitat. The construction area would be resurveyed whenever there is a lapse in construction activity of two weeks or more. • If a giant garter snake is encountered within the construction work area, construction activities must cease until the snake moves out of the work area unassisted. Capture and relocation of trapped or

Table 1.8-15 Applicant Proposed Measures (APMs)

	injured individuals can only be attempted by USFWS-permitted personnel. The applicant or its contractors would notify USFWS within 24 hours and submit a report, including dates, locations, habitat description, and any corrective measures taken to protect the snake(s) encountered. For each giant garter snake encountered, the biologist would submit a completed CNDDB field survey form (or equivalent) to DFG no more than 90 days after completing the last field visit to the project site. • Construction personnel would participate in a USFWS-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of giant garter snake and the terms and conditions of the BO. Proof of this instruction would be submitted to USFWS Sacramento field office. • To ensure that construction equipment and personnel do not affect giant garter snake aquatic habitat outside the construction work area, orange barrier fencing would be erected to clearly delineate the aquatic habitat to be avoided. • A post-construction compliance report prepared by a qualified biologist would be forwarded to the chief of the Endangered Species Division of USFWS Sacramento field office within 60 days after completion of the Project. This report would include dates that construction occurred, pertinent information about the applicant's success in implementing project mitigation measures, an explanation of any failures to implement mitigation measures, any known project impacts on federally listed species, any occurrences of incidental take of federally listed species, and any other pertinent information.
APM BIO-18	Compensate for loss of aquatic and upland habitat for giant garter snake. Any giant garter snake habitat temporarily impacted by project related activities will be restored to pre-project conditions within the same season or, at most, the same calendar year. PG&E will conduct one year of monitoring consistent with a habitat monitoring plan to include measurable criteria for restoration success, and a defined restoration and monitoring timeline. A monitoring report will be due to USFWS and DFG one year from the restoration implementation, including photo-documentation with pre- and post-project photos, and other information as specified in the monitoring plan. To compensate for the permanent loss of 0.12 acre of suitable habitat for giant garter snake, PG&E will purchase off-site giant garter snake habitat credits at a 3:1 ratio from a USFWS- and DFG- approved conservation bank.
APM BIO-19	Conduct a preconstruction survey for western pond turtles and monitor construction activities within suitable aquatic and upland habitat. To avoid construction-related impacts on northwestern pond turtles, the applicant would retain a qualified wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction in work areas that are within suitable upland habitat (grasslands within 1,300 feet of aquatic habitats). The preconstruction survey would be conducted in conjunction with giant garter snake and western spadefoot surveys. The wildlife biologist would look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If an adult western pond turtle is located in the construction area, the biologist would move the turtle to a suitable aquatic site, outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the applicant would consult DFG to determine and implement appropriate avoidance measures, which may include a "no-disturbance" buffer around the nest site until the hatchlings have moved to a nearby aquatic site.
APM BIO-20	Conduct preconstruction surveys for active burrowing owl burrows. DFG (1995) recommends that preconstruction surveys be conducted at all construction sites (except paved areas) in the project study area and in a 250-foot-wide buffer zone around the construction site to locate active burrowing owl burrows. The applicant would retain a qualified biologist to conduct preconstruction surveys for active burrows according to the DFG guidelines. Surveys typically include a nesting season survey and a wintering season survey. The surveys would cover all affected areas, including the transmission line route, staging areas, pull sites, and areas of access road improvements where ground disturbance is required. If no burrowing owls are detected, no further mitigation is required. If active burrowing owl burrows are

Table 1.8-15 Applicant Proposed Measures (APMs)

	detected, the applicant would implement APM BIO-21 (Implement DFG guidelines for burrowing owl mitigation, if necessary).
APM BIO-21	**Implement DFG (1995) guidelines for burrowing owl mitigation, if necessary.** The applicant would implement the following measures based on DFG Guidelines if active owl burrows are located within 250 feet of the project area. • Occupied burrows would not be disturbed during the nesting season (February 1–August 31). PG&E would consult with DFG to determine the appropriate no disturbance buffer around active burrows, if owls are located near the project area. • When destruction of an occupied burrow is unavoidable during the non-breeding season (September 1–January 31), unsuitable burrows would be enhanced (enlarged or cleared of debris) or new burrows created by installing artificial burrows at a ratio of 2:1 on protected lands approved by DFG. Newly created burrows would follow guidelines established by DFG. • If owls must be moved away from the project construction area, passive relocation techniques, such as installing one-way doors at the burrow entrance, would be used instead of trapping the owls. At least 1 week would be necessary to accomplish the passive relocation and allow the owls to acclimate to alternative burrows. • If active burrowing owl burrows are found and the owls must be relocated, the applicant would offset the loss of foraging and burrow habitat in the project construction area by acquiring and permanently protecting a minimum of 6.5 acres of foraging habitat per occupied burrow identified in the project construction area. The protected lands should be located adjacent to the occupied burrowing owl habitat in the project construction area or at another occupied site near the project construction area. The location of the protected lands would be determined in coordination with DFG. The applicant also would prepare a monitoring plan and provide long-term management and monitoring of the protected lands. The monitoring plan would specify success criteria, identify remedial measures, and require an annual report to be submitted to DFG. • Avoidance would be the preferred method of addressing potential impacts. Avoidance would involve preventing disturbance within 160 feet of occupied burrows during the nonbreeding season (September 1–January 31) or within 250 feet during the breeding season. Avoidance also requires that at least 6.5 acres of foraging habitat (calculated based on an approximately 300-foot foraging radius around an occupied burrow), contiguous with occupied burrow sites, be permanently preserved for each pair of breeding burrowing owls or single unpaired resident bird. The configuration of the protected site would be submitted to DFG for approval.
APM BIO-22	**Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season.** To avoid removal of active nests, tree trimming, vegetation removal, and removal of towers with active nests or in close proximity to areas with active nest sites, should be conducted during the non-breeding season (generally August 16 through February 28).
APM BIO-23	**Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds.** Construction activities are anticipated to occur mainly during the nesting season for migratory birds and raptors (March 1–August 15). The applicant would retain a qualified wildlife biologist to conduct preconstruction surveys for nesting birds, for all construction activities that occur within or near suitable breeding habitat. Due to the long linear nature of the project, construction activities would be conducted in distinct sections of the transmission line. The preconstruction surveys would be conducted for each section no more than 1 week prior to the start of construction activities in that section. Surveys would cover all affected areas, which is the transmission line route, staging areas, pull sites, and areas of access road improvements where ground disturbance or vegetation clearing is required. Preconstruction surveys would be repeated if

Table 1.8-15 Applicant Proposed Measures (APMs)

	construction activities are dormant in a section for longer than 1 week. If surveys indicate that migratory bird or raptor nests occur in areas that would be directly affected by construction activities, a no-disturbance buffer would be established around the nest site to avoid disturbance or destruction of the nest site until after the breeding season or until a wildlife biologist determines that the young have fledged. Generally, the buffer zones are 50–100 feet for nesting passerine birds, 300 feet up to 2,640 feet for nesting raptors, and 500 feet up to 2,640 feet for golden eagles. However, the extent of these buffers would be determined through coordination with DFG and would depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors would be analyzed to make an appropriate decision on buffer distances. All active nests occurring in or near the project area would be monitored during construction by the onsite monitor for signs of stress. If the onsite monitor determines that birds on the nest are stressed, construction would be halted and PG&E would contact DFG to determine a further course of action.
APM BIO-24	Avoid disturbance of active nests by helicopter use. Use of helicopters would be restricted to necessary trips to install and remove poles, install transmission lines, and deliver and remove equipment to areas lacking vehicle access. If active nests occur under planned helicopter flight paths, coordination with DFG would be required to determine whether modification of the flight path is necessary to avoid disturbance of active nests.
APM CR-1	Stop work if previously unknown cultural resources are discovered. If buried cultural resources such as chipped or ground stone, historic debris, or building foundations are inadvertently discovered during site preparation or construction activities, work would stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the applicant and other appropriate agencies. (With the archaeologist's approval, work may continue on other portions of the site.) The applicant would be responsible for ensuring that the archaeologist's recommendations for treatment are implemented.
APM CR-2	Stop work if previously unknown paleontological resources are discovered. Training should be conducted for construction personnel, and work should be ceased if paleontological resources are encountered. Construction is defined to include any excavation, paving, building construction, or landscaping.
APM CR-3	Stop work if human remains are discovered. If human remains are encountered during site preparation or construction, work would stop within a 100-foot radius of the find and the county coroner would be notified immediately, as required by state law *(California Health and Safety Code [CHSC]. 7050.5)*. A qualified archaeologist also would be notified immediately. If the county coroner determines that the remains are Native American, the coroner would contact the NAHC, pursuant to *CHSC 7050.5[c]*. There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the county coroner has determined that (1) no investigation of the cause of death is required; and (2) if the remains are of Native American origin, the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of with appropriate dignity the human remains and any associated grave goods as provided in *PRC 5097.98*—unless the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 48 hours after being notified by the commission.
APM GEO-1	Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards. For overhead transmission lines, tower replacement(s), and any other associated project activities, site-specific, design-level geotechnical investigations would be performed at specific locations where required to evaluate the potential for the presence of soft and/or loose soils, unstable slopes, surface fault rupture, ground

Table 1.8-15 Applicant Proposed Measures (APMs)

	shaking, liquefaction hazard, slope stability in the vicinity of river crossings, and expansive soils. Where significant potential for these hazards exists, pole locations would be adjusted when possible in order to minimize any potential for damage.
APM HAZ-1	Implement a Spill Prevention Plan. A Spill Prevention Plan would be implemented for each staging area, and workers would receive written instructions and training on the plan. This plan would include: • A Hazardous Substance Control and Emergency Response Plan addressing preparations for quick and safe cleanup of accidental spills. The plan would prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and include an emergency response program. The plan would identify areas where refueling and vehicle maintenance activities and storage of hazardous materials would be permitted. • An Environmental Training and Monitoring Program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and applicable best management practices to all construction and operations personnel. A monitoring program would be implemented to ensure that the plans are followed during project construction.
APM HAZ-2	Conduct construction soil sampling and testing if soil contamination is suspected. The applicant would conduct soil sampling along the project alignment, as needed, before construction begins. Soil information would be provided to construction crews, to inform them about soil conditions and potential hazards. In the event that contaminated soil is encountered during excavation activities along the transmission line alignment, work would be stopped and the soil would be segregated and tested to determine appropriate disposal and treatment options. If the soil test results positive for hazardous materials, the soil would be properly handled, transported, and disposed of in accordance with federal, state, and local regulations.
APM HAZ-3	Conduct groundwater sampling and testing if suspected contaminated groundwater is encountered during construction. If suspected contaminated groundwater is encountered in the proposed project construction areas, samples would be collected and submitted for analysis of petroleum hydrocarbons, metals, volatile organic compounds, and semi-volatile organic compounds. If necessary, groundwater would be collected during construction, contained, and disposed of in accordance with all applicable regulations. In addition to APM HAZ-1, APM HAZ-2, and APM HAZ-3, Mitigation Measures MM HAZ-1 (Additional Investigation of Contaminated Sites along the Project Alignment) and MM HAZ-2 (Contaminated Soil and Groundwater Contingency Plan) are proposed to be implemented to reduce potential impacts associated with significant hazard to the public or the environment through exposure to contaminated sites.
APM HAZ-4	Develop and Implement a Helicopter Lift Plan. The applicant would require the helicopter vendor to prepare a Helicopter Lift Plan for approval by the FAA prior to any construction helicopter operations. Any specific transportation needs (e.g., temporary road closures) would be identified in the Plan and would be coordinated with the appropriate jurisdictions.
APM HAZ-5	Prepare a Health and Safety Plan. The applicant would prepare a Health and Safety Plan that would address emergency medical services to be provided in case of an emergency. The Plan would list procedures, specific emergency response, and evacuation measures to be followed during emergencies. The applicant would prepare this manual and distribute it to all the applicant and contract workers involved in the project prior to construction and during operation of the proposed project. The applicant would provide project maps to emergency personnel, which describe tower and pole locations as well as access roads, to ensure proper emergency response to all parts of the proposed project alignment.

Table 1.8-15 Applicant Proposed Measures (APMs)

APM HAZ-6	Develop and Implement a Fire Risk Management Plan. The applicant follows a standard practice of developing and implementing a Fire Risk Management Plan that addresses fire-suppression equipment and procedures to be used during construction and training of construction and maintenance crews. Additionally, fire suppression equipment and materials would be kept adjacent to all areas of work and in staging areas, and would be clearly marked. Detailed information for responding to fires would be provided in the project's Fire Risk Management Plan. Information contained in the Plan and location of fire-suppression materials and equipment would be included as part of the employee environmental training discussed in APM HAZ-1. Furthermore, water tanks would be sited in the project area to protect against fire, and all vehicles shall carry fire suppression equipment. The applicant would contact and coordinate with local and county fire departments to determine the minimum amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks.
APM HYDRO-1	Prepare and implement a storm water pollution prevention plan. The applicant or its contractor would prepare and implement an SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter Counties. These BMPs would be selected to achieve maximum sediment removal and represent the BAT that is economically achievable. BMPs to be implemented as part of the project-specific SWPPP may include, but are not limited to, the following control measures. • Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) would be employed to control erosion from disturbed areas. • Drainage facilities in downstream offsite areas would be protected from sediment using BMPs acceptable to Butte, Sutter, and Yuba Counties and the CVRWQCB. • Pervious/porous pavement would be used to reduce runoff when economically feasible. The pavement is a unique cement-based concrete product with a porous structure, which allows rainwater to pass directly through the pavement and into the soil. Vegetative cover would be established on the disturbed areas as soon as possible after disturbance. Final selection of BMPs would be subject to review by the applicant.
APM HYDRO-2	Develop and implement a spill prevention control and countermeasure plan. The applicant or its contractor would develop and implement an SPCCP to minimize the potential for, and effects of, spills of hazardous, toxic, or petroleum substances during all construction activities. The SPCCP would be completed and included in the SWPPP before any construction activities begin. The applicant would routinely inspect the construction areas to verify that the control measures specified in the SPCCP are properly implemented and maintained. The applicant would notify its contractors immediately if there is a noncompliance issue and would require compliance. If an appreciable spill occurs, a detailed analysis would be performed by a registered environmental assessor to identify the likely cause of contamination. This analysis would conform to American Society for Testing and Materials (ASTM) standards and would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the applicant and its contractors would select and implement additional measures to control contamination, with a performance standard that groundwater quality and surface water quality must be returned to baseline conditions.
APM HYDRO-3	Perform a drainage study and comply with setback requirements and county standards. A drainage study would be performed for all of the areas that require grading and new roadways in addition to placement of tower footings in the 100-year floodplain. The drainage study would include calculations for the potential increases in stormwater runoff from related construction activities. The study would also include drainage improvements to minimize the risk of flooding to downstream areas based on any potential increase

Table 1.8-15 Applicant Proposed Measures (APMs)

	in flood areas from the proposed project. The applicant would incorporate the recommendation s for the drainage study into construction plans and would comply with county standards for construction in 100-year floodplains.
APM NOISE-1	Employ noise-reducing construction practices during temporary reconstruction activities. The applicant would employ noise-reducing construction practices so that noise produced by construction activities is in compliance with applicable local noise level standards and ordinances where feasible. Measures to be implemented may include but are not limited to the measures listed here. • Ensure that all equipment is equipped with mufflers that meet or exceed factory new equipment standards. • Locate stationary equipment as far as practical from noise sensitive receptors. • Limit unnecessary engine idling. • Use equipment that is specifically designed for low noise emissions and employ equipment that is powered by electric or natural gas engines as opposed to those powered by diesel or gasoline reciprocating engines. • In the vicinity of noise-sensitive receptors, use cranes wherever feasible as opposed to helicopters to install poles and replace transmission towers. • Design helicopter flight paths over land use areas that are not noise sensitive (i.e. agricultural and vacant). • Locate helicopter staging areas as far from residential locations as is practical. • Limit all construction activity in urban areas to the hours of 7 a.m. to 7 p.m. Monday through Saturday. • Use temporary enclosures or noise barriers (i.e. wood and/or noise blankets) around loudest pieces of equipment when practical and necessary. • Notify communities and neighborhoods that would be most heavily impacted by construction activities, including but not limited to written notice and the posting of signs with contractor contact number on construction site fences. Signs would also include contact details for the PG&E noise complaint officer for the project. • Locate vehicle access roads as far from noise sensitive receptors as practical. • Schedule construction activities that would occur within 300 feet of schools and learning institutions (such as Yuba Community College) on days when classes are not in session. • PG&E proposes that night work not occur in urban areas or areas with substantial concentrations of residences.
APM PS-1	Maintain secured facilities during construction activities. The applicant would implement the following measures during construction activities. • All unattended equipment would be locked and secured at the most secure locations available. • Contract security would be made available for use at active pull/tension sites, lay-down, and storage areas outside work hours. • All open holes would be covered and secured once activity at that location stops (after hours). • Anchor bolts on foundations without structures would be capped. • Safety structures would be placed at road crossings during overhead wire installation activity to protect traffic and pedestrians.

Table 1.8-15 Applicant Proposed Measures (APMs)

APM TRAN-1	**Restriction of Simpson Lane during p.m. peak hours.** During p.m. peak hours, Simpson Lane shall not be used by the project for construction related activities.
APM USS-1	**Conduct a pre-construction records search/field survey to identify specific locations of water wells and well fields.** To ensure minimal disturbance or alteration of water wells or well fields within the project alignment, PG&E would conduct a pre-construction records search and field survey to identify specific locations of water wells and well fields.
APM USS -2	**Notify underground service alert at least 14 days prior to initiation of construction activities in the underground portion of the power line.** The applicant would ensure that Underground Service Alert is notified at least 14 days prior to initiation of construction activities of the underground portion of the power line. Underground Service Alert verifies and physically marks the location of all existing underground utilities in the area of anticipated construction activities to prevent accidental disturbance.

1.10 Other Public Agencies Whose Approval is Required

The applicant has submitted an application for a Permit to Construct (Application No. A. 09-02-023) from the CPUC pursuant to Public Utilities Code Section 1001 and General Order 131-D. Although the CPUC has exclusive authority to issue a Permit to Construct, CPUC General Order 131-D, Section III C requires that, "the utility to communicate with, and obtain the input of, local authorities regarding land use matters and obtain any non-discretionary local permits." Permits, approvals, and notifications involving the following agencies have been identified for the project:

- U.S. Army Corps of Engineers (Endangered Species Act Section 7 consultation, CWA 404 Nationwide Permit 12)
- Department of Fish and Game and California Endangered Species Act (DFG code 2081 incidental take permit for giant garter snake and Swainson's hawk)
- Department of Fish and Game (1600 Permit)
- State Lands Commission (leases for river crossings)
- State Water Resources Control Board (CWA 402, National Pollutant Discharge Elimination System)
- Central Valley Regional Water Quality Control Board (Clean Water Act [CWA] 401)
- Central Valley Flood Protection Board (permit)
- Caltrans (encroachment permit for State Highway 20 crossing)
- Butte County (encroachment permit)
- Sutter County (encroachment permit)
- Yuba County (encroachment permit)
- Butte County Air Quality Management District (demolition notification/permit and fugitive dust control plan)

- Feather River Air Quality Management District (demolition notification/permit and fugitive dust control plan)
- City of Marysville (encroachment permit)
- City of Oroville (encroachment permit)
- Western Pacific / Union Pacific Railroad (encroachment permit)

This page intentionally left blank

2.0 Environmental Determination

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklists in Chapter 3 for the following resources areas:

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities and Service Systems	☐ Mandatory Findings of Significance

2.2 Determination

Determination: (To Be Completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	7/30/2010 Date
Iain Fisher, Project Manager Energy Division	Agency: California Public Utilities Commission

3.0 Evaluation of Environmental Impacts

This Initial Study provides an analysis of the environmental issues listed below. These issues are the same as those identified in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, California Code of Regulations Section 1500 et. seq.

3.1	Aesthetics	3.10	Land Use and Planning
3.2	Agriculture and Forestry Resources	3.11	Mineral Resources
3.3	Air Quality	3.12	Noise
3.4	Biological Resources	3.13	Population and Housing
3.5	Cultural Resources	3.14	Public Services
3.6	Geology and Soils	3.15	Recreation
3.7	Greenhouse Gas Emissions	3.16	Transportation/Traffic
3.8	Hazards and Hazardous Materials	3.17	Utilities and Service Systems
3.9	Hydrology and Water Quality	3.18	Mandatory Findings of Significance

The Proponent's Environmental Assessment (PEA) for the project, as prepared by PG&E (the applicant) and submitted to the California Public Utilities Commission (CPUC) as part of Application No. A. 09-02-023 for a Permit to Construct, contains project information that was incorporated into the Initial Study. The PEA was used extensively to develop Chapter 1.0, particularly the Description of the Project and the Applicant's Purpose and Need. The full PEA is available for public review on the Internet at: http://www.cpuc.ca.gov/Environment/info/ene/palermo/Palermo_East_Nicolaus.html

Additional project information was submitted by the applicant after the PEA filing date in response to CPUC requests for further information. The data requests and responses occurred over a period of time beginning on March 27, 2009 and ending on August 3, 2010. The applicant's responses to the requests for further information were incorporated into the Initial Study and will be available in the Administrative Record prepared at the completion of the CEQA process.

3.1 Aesthetics

Table 3.1-1 Aesthetics Checklist

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?	☐	☐	☒	☐

3.1.1 Setting

The Palermo–East Nicolaus 115-kV Transmission Line Project would be located in the northern Sacramento Valley in Butte, Sutter, and Yuba Counties. The project would run approximately 40 miles from the Palermo Substation at the eastern edge of the town of Palermo in southern Butte County southwards to the East Nicolaus Substation in the town of East Nicolaus in Sutter County.

The existing double-circuit 115-kV transmission line is carried by lattice steel towers (LSTs). The project would entail the replacement of the approximately 75- to 95-foot tall LSTs on the existing Palermo-East Nicolaus transmission line with approximately 85- to 120-foot tall hybrid steel poles (hybrid poles) and tubular steel poles (TSPs) and 85-foot tall lattice steel poles (LSPs). The span lengths will be altered slightly from the existing spans. Of the existing 320 towers, approximately 265 would be replaced with steel poles, and approximately 40 would remain in place. The total number of structures would be reduced by approximately 15 (Table 1.8-2).

The Palermo-East Nicolaus Transmission Line runs parallel to the single-circuit 115-kV Palermo-Pease Transmission Line carried by LSTs. The project would also require the replacement of five existing 75-foot LSTs and the removal of two LSTs (Table 1.8-3) on the adjacent single-circuit line with new steel poles for consistency with the spans on the Palermo-East Nicolaus 115-kV Transmission Line.

Construction of the project would require approximately sixteen lay-down/staging/helicopter landing zone areas ranging from 1.24 to 7.41 acres each and sixteen pull sites ranging from 0.27 to 2.4 acres each (Table 1.8-8). Access to staging areas would rely primarily on existing roadways suitable for truck traffic; however, the project would require the construction of some temporary access roads as well as improvements to existing access roads. Improvements to existing roads include the widening of roadways to 16 feet. All land disturbed by the project would be reseeded to restore the landscape to its preexisting condition.

The majority of the route passes through unincorporated portions of Sutter, Yuba, and Butte Counties. The lands can be classified as agricultural lands with scattered rural residences and associated agricultural structures. Urbanized areas along the route include Marysville, Linda, Olivehurst, and Palermo. The project route also passes alongside the edge of Yuba Community College. In southern Yuba County, the route passes within two miles of the Lake of the Woods State Wildlife Area.

The project area offers distant views of the Sierra Foothills and the Sutter Buttes. The Butte County General Plan recognizes the scenic qualities of the Sierra Foothills and the extensive scenic views that are available of the foothills and mountains toward the east from the valley but does not contain specific policies to protect those visual resources (Butte County 2000). The Sutter County General Plan identifies the Sutter Buttes as a visual resource and directs development to preserve views of this distinctive landform (Sutter County 1996).

The route crosses several rivers and creeks including the Bear River and the Ping Slough in Sutter County; the Yuba River (near Marysville) and Jack Slough in Yuba County; North and South Honcut Creeks on the border between Yuba and Butte Counties; and Wyandotte Creek and the Wyman Ravine in Butte County. The Yuba County General Plan describes the Bear Creek and Yuba River corridors as "visually appealing" to many people (Yuba County 1996).

The project route would not cross or pass within the viewshed of any designated or eligible state scenic highways. In Butte County, Highway 70 north of Highway 191 and, in Yuba County, Highway 49 are located 10 and 25 miles from the project, respectively, and are both considered eligible state scenic highways. Sutter County has no officially designated or eligible state scenic highways.

Highway 20 is a proposed Yuba County scenic route (Yuba County 1968). State Highway 70/Marysville Bypass to the Butte County line and State Highway 49 (Yuba County 1968) is a potentially eligible new corridor within Yuba County. The project would be located more than two miles from all other designated or eligible scenic routes within Yuba County. The Yuba County General Plan Open Space and Conservation Element Policy 34-OSCP protects scenic qualities from the county's roads, specifically addressing outdoor advertising and parking facilities.

The Marysville General Plan recognizes Highway 70 crossing the Yuba River Bridge as providing a scenic view of the Yuba River (City of Marysville 1985). The Plan does not include specific policies pertaining to development along or within viewshed of the Yuba River Bridge. The project route would be located approximately 2.5 miles from the bridge.

The route would not cross or lie in proximity to a Butte County scenic highway. The Land Use Element of the Butte County General Plan identifies Highway 70 north of 149 as a county scenic highway (Butte County 2000). This portion of the roadway is located approximately 11 miles from the northern terminus of the project and nine miles from the northernmost point of the project.

The project route would be located within the vicinity of Highway 20 in Sutter County. The Land Use Element of the Sutter County General Plan requires that development along Highway 20 protect views of the Sutter Buttes in the background (Sutter County 1996). Additionally, the Sutter County General Plan is in the process of being updated. The 2008 Background Report for the Sutter County General Plan update identifies a number of visually and aesthetically scenic roadways throughout Sutter County. These consist of roadways such as those around and through the Sutter Buttes and those along the Sacramento and Feather Rivers (Sutter County 2008). There are no policies currently in place to designate these as county scenic roadways.

Landscape Units

Landscape Units are distinct visual environments traversed by the project. Landscape units have been identified for purposes of documenting and describing the project's foreground viewshed. Within each distinct Landscape Unit are homogenous topographic, vegetation, and/or development patterns that visually distinguish the unit from surrounding areas.

The project would be located within three Landscape Units (Figure 3.1-1). The Landscape Units are described below, and photos of typical views within these areas are shown in Figures 3.1-2a through 3.1-2e. Landscape Unit 1 encompasses the Palermo Substation (the route's northern terminus) and the route down to its Highway 20 crossing in Yuba County. Landscape Unit 2 covers the route from the Highway 20 crossing to McGowan Parkway near Highway 70 in Olivehurst. Unit 3 runs from McGowan Parkway to the route's southern terminus outside of the town of East Nicolaus in Sutter County.

Landscape Unit 1: Palermo Substation to Highway 20

Landscape Unit 1 runs from the Palermo Substation to where the route crosses Browns Valley Road (Highway 20) on the outskirts of Marysville. The route crosses through the southern limits of the City of Oroville, but the majority of views are characterized by the lower Sierra foothill community of Palermo and the farmland in the northern Sacramento Valley.

The visual setting in this unit is a gently rolling landscape of mature forests giving way to creeks and low-lying grasslands that make up the valleys of the Wyandotte and Honcut Creeks. Elevations along the northern portion of the route reach almost 400 feet, whereas the center of Palermo lies at about 160 feet and farmlands further south vary between 60 to 150 feet. The area is sparsely populated outside of the town of Palermo. Views of the project are available from a small number of residences and agricultural buildings.

Vegetation outside of the town of Palermo consists of grasslands and farms, riparian corridors and orchards. The route crosses several waterways including South Honcut Creek and Jack Slough. Riparian trees such as cottonwoods are characteristic of the vegetation in these areas. The Sutter Buttes provide a distinctive landscape backdrop feature in eastern-facing views from some locations within this landscape unit. The Buttes lie approximately 12 miles away from the southern end of this unit.

The Palermo Substation is located in a flat area off of Stageline Road, west of Drescher Tract Road. The substation is visible from adjacent properties (Photo 1). More distant views of the project route from the south, east, and west are screened by vegetation and topography. Limited views toward the substation are available from the north, including views from the Feather Falls Casino and the associated Kampgrounds of America campground on Lower Wyandotte Road 0.75 miles away. Due to an intervening low and forested ridge that reaches about 400 feet in elevation, the substation is not visible from most of the town of Palermo, located 1.5 miles to the southwest.

The project route follows an existing transmission route for approximately 1.5 miles from the substation west then northwest, crossing Upper Palermo Road (and Pinecrest Road). The project route parallels three existing routes at this point (Photo 2), then turns southwest near the intersection of Lincoln Boulevard and Ophir Road, and from Ophir Road proceeds approximately 1.5 miles southwest, where it crosses Lincoln Boulevard near Firloop Circle (Photo 3). It continues southeast for about 1.3 miles between the railroad corridor and Railroad Avenue. Photo 4, taken from Baldwin Avenue at Railroad Avenue represents views from this area looking west toward the project. A half mile south of South Villa Avenue, at what would be the extension of Louis Avenue, the line crosses the Union Pacific Railroad tracks and continues on the west side of the tracks. As shown in Photos 5 and 7, for most of this Landscape Unit the route runs within 100 feet west of the Union Pacific Railroad corridor.

In Landscape Unit 1, the route crosses various local roads including Cox Lane, Central House Road, Middle and Lower Honcut Roads, Ramirez Road, Ellis Road, Kimball Lane, and Jack Slough Road.

These rural roads connect residents of the area to Highway 70 and to the towns of Palermo, Honcut, Wyandotte, and Gridley. Photo 6 shows the crossing at Lower Honcut Road, a well-traveled roadway that joins Honcut to the east with Highway 70. As shown in Photo 8, at the southern end of the unit, the route crosses Highway 20.

Distant views of the project are also available from the heavily traveled Palermo-Honcut Highway and from Highway 70. Palermo-Honcut Highway runs parallel to the route approximately one to three miles to the east, and Highway 70 runs parallel to the route one to three miles to the west.

Landscape Unit 2: Highway 20 to McGowan Parkway

Landscape Unit 2 runs approximately six miles from Browns Valley Road (Highway 20) near the northeast edge Marysville to the Highway 70 route crossing at McGowan Parkway in Olivehurst. Landscape Unit 2 includes the most populated areas of project corridor, passing through the communities of Linda and Olivehurst as well as the city limits of Marysville. Elevations in this area are fairly constant, ranging from approximately 55 to 75 feet above sea level.

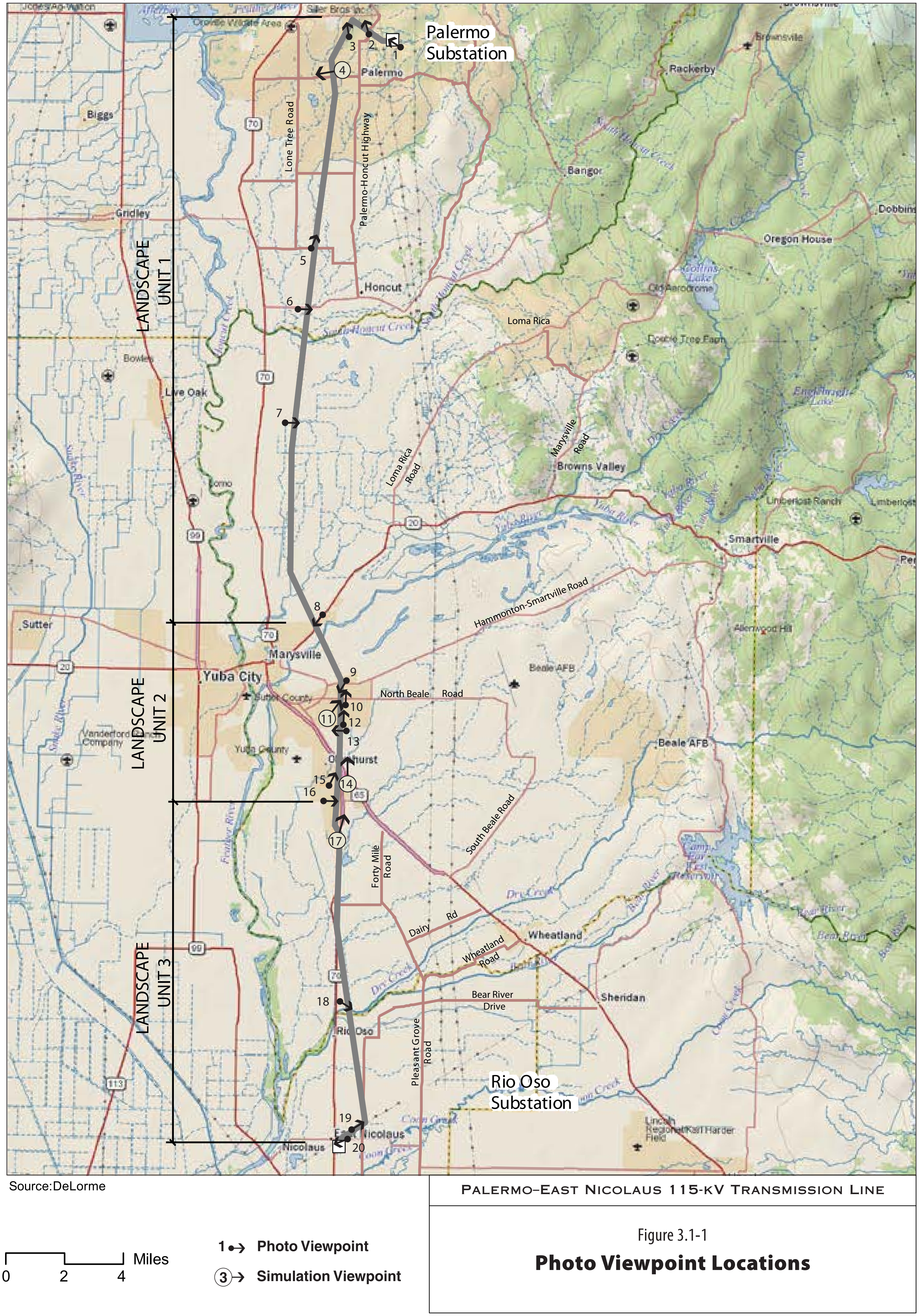
Highway 20, a proposed Yuba County scenic route, runs east and west and connects smaller foothill communities with Marysville and Yuba City. Views from Highway 20 encompass low-lying farmlands as well as distant views of the Sierra Nevada foothills and the Sierra Buttes. In this area, the line passes within 0.25 miles of an existing residential area. Where the route briefly crosses through Marysville, views of the transmission line are screened by a levee that separates the residential areas from farmland to the northeast.

After crossing Highway 20, the route runs southeast for about two miles and crosses the Yuba River and orchard land before entering the residential community of Linda, a suburb of Marysville. On the north edge of Linda the route passes through the Peach Tree Golf & Country Club, a private club built in 1960.

Near Linda the route crosses a number of local and regional roadways including Hammonton-Smartville Road (shown in Photo 9), North Beale Road (an entry road for Beale Air Force Base), and Erle Road (Photo 13). For slightly more than 1.5 miles the project traverses the Linda community passing adjacent to the Yuba Community College campus (Photo 10). Photo 11 and Photo 12, respectively, are views from a recently built suburban development and a nearby walking trail in Linda.

Highways 65 and 70 are heavily-traveled north-south-running routes that connect Roseville and Sacramento with the communities of Lincoln and the Marysville/Yuba City area. Photo 14, taken from Highway 65, shows the project route where it crosses near the junction of the two highways. This view includes existing lattice towers of the project line along with a parallel transmission line as well as existing distribution lines. After this roadway crossing, the project route continues parallel to and within 0.25 miles of Highway 70. At this location the route enters Olivehurst, where it also travels parallel to and within 100 feet of a residential area along Powerline Road for one mile. Photo 15, taken from Yuba Gardens School on Powerline Road near 11th Avenue shows a view of this area. Photo 16 shows the route at McGowan Parkway just before its second Highway 70 crossing.

Reference: Fig. 3.1-1, Photo Viewpoint Locations, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009



Source: DeLorme

Palermo–East Nicolaus 115-kV Transmission Line

Figure 3.1-1

Photo Viewpoint Locations

002803.CP10.03.e (2009 CORP CD Archives - Vol 4) 06/24/2010

Reference: Fig. 4.1-2a, Landscape Unit 1 – Visual Character Photographs, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009

1. Stageline Road looking northwest toward Palermo Substation

2. Upper Palermo Road at Pinecrest Road looking northwest

3. Lincoln Boulevard at Firloop Circle looking north

4. Baldwin Avenue at Railroad Avenue looking west*

*Simulation shown in Figure 3.1-3

Palermo–East Nicolaus 115-kV Transmission Line

Figure 3.1-2a

Landscape Unit 1: Visual Character Photographs

5. Central House Road at route crossing looking northeast

6. Lower Honcut Road east of Highway 70 looking east

7. Ramirez Road east of Highway 70 looking east

8. Highway 20 westbound looking southwest

Palermo–East Nicolaus 115-kV Transmission Line

Figure 3.1-2b

Landscape Unit 1: Visual Character Photographs

This page intentionally left blank

9. Hammonton-Smartville Road near crossing looking southwest

10. Yuba Community College looking north toward North Beale Road

11. Fernwood Drive near Wildwood Drive looking northeast*

12. River Bank Drive near pedestrian path looking north

*Simulation shown in Figure 3.1-4

PALERMO–EAST NICOLAUS 115-KV TRANSMISSION LINE

Figure 3.1-2c

Landscape Unit 2: Visual Character Photographs

This page intentionally left blank

13. Erle Road near Edgewater Circle looking west

14. Highway 70 northbound at Highway 65 merge looking north*

15. Powerline Road at Yuba Gardens School looking northeast

16. McGowan Parkway at Powerline Road looking east

*Simulation shown in Figure 3.1-5

PALERMO–EAST NICOLAUS 115-kV TRANSMISSION LINE

Figure 3.1-2d

Landscape Unit 2: Visual Character Photographs

This page intentionally left blank

Reference: Fig. 4.1-2e, Landscape Unit 1 – Visual Character Photographs, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

17. Highway 70 northbound looking northeast*

18. Chalice Creek Drive looking southeast

19. Watts Avenue near Pacific Avenue looking northeast

20. East Nicolaus Substation (from East Nicolaus Avenue and Highway 70)

*Simulation shown in Figure 3.1-6

PALERMO–EAST NICOLAUS 115-kV TRANSMISSION LINE

Figure 3.1-2e

Landscape Unit 3: Visual Character Photographs

002803.CP10.03.j (2009 CORP CD Archives - Vol 4) 06/24/2010

This page intentionally left blank

Landscape Unit 3: McGowan Parkway to East Nicolaus Substation

Landscape Unit 3 extends approximately 12 miles from McGowan Parkway to the East Nicolaus substation. Although the route passes through a newer residential development in the northern portion, this unit's landscape is generally characterized by unpopulated agricultural areas typified by grasslands and rice fields. Railroad tracks, rural roads, and levees punctuate the landscape setting. The route crosses several waterways including the Bear River located at the border of Yuba and Sutter Counties and Yankee Slough. Elevations in this relatively flat landscape range between 40 and 60 feet above sea level.

For most of this unit, the route runs parallel to and within 0.25 miles of Highway 70. Approximately one mile south of McGowan Parkway, the route crosses Highway 70 (Photo 17). The existing transmission route continues to be one of two parallel lines supported by lattice towers throughout this unit.

As shown in Photo 18, south of Plumas Arboga Road the project route passes near several recently built residential developments along Highway 70 in the historic Plumas Lake area. In this area the route crosses then runs parallel to the Western Pacific Railroad tracks until it turns west at Pacific Avenue north of Watts Avenue.

The East Nicolaus substation on El Centro Boulevard (Highway 70) is the project's southern terminus and is situated in an area of residential, light industrial, commercial, and farmland in the East Nicolaus community (Photo 19). Photo 20, taken from approximately 200 feet away, shows a Highway 70 view looking toward the East Nicolaus Substation.

Key Observation Points

The photos or Key Observations Points (KOPs) described to illustrate the Landscape Units crossed by the project represent typical views of the project components and views from sensitive locations. These KOPs are used to help establish the baseline for the existing visual resources. The project's potential to change the visible landscape and likely viewer responses to those changes are compared using simulations of the project components prepared for select KOPs.

Simulations were prepared for four KOPs. The four simulation vantage points are delineated on Figure 3.1-1. They include the view from Baldwin Avenue and Railroad Avenue in Palermo (Viewpoint 4); the view from Fernwood Drive near Wildwood Drive in Linda (Viewpoint 11); the view from Highway 70 northbound at Highway 65 (Viewpoint 14); and the view from Highway 70 northbound near Algodon Road (Viewpoint 17). Existing views from these locations are described in greater detail below.

KOP 4: View from Baldwin Avenue and Railroad Avenue

KOP 4 (Figure 3.1-3) provides a view from Baldwin Avenue at Railroad Avenue in the town of Palermo, looking west toward the project and the railroad corridor. This vantage offers an unobstructed view of two existing 75- to 80-foot tall lattice towers. The tower on the left is situated within the project route while the structure seen to the right is associated with the adjacent existing transmission line. Large mature trees situated along Railroad Avenue are prominent in the foreground and scattered large trees and smaller orchard trees form the landscape backdrop seen beyond the railroad corridor.

KOP 11: View from Fernwood Drive near Wildwood Drive

KOP 11 (Figure 3.1-4) provides a view of the project from Fernwood Drive near Wildwood Drive. Existing residences are visible in the foreground. On the right in the background, two existing lattice towers appear against the sky behind the residences. The existing lattice tower situated within the project route is about 75-feet tall and is located approximately 300 feet away. Existing wood distribution poles are also visible behind the homes.

KOP 14: View from Highway 70 northbound at Highway 65

KOP 14 (Figure 3.1-5) provides a view of the project from northbound Highway 70 at the Highway 65 merge in Olivehurst. This view includes both the project route and a second existing transmission line that crosses Highway 70 in the foreground. Lattice towers associated with both lines appear prominently on each side of the roadway. In the background a wood-pole utility line crosses the roadway, and wood poles of another existing line appear on the right side of the roadway.

KOP 17: View from Highway 70 northbound near Algodon Road

KOP 17 (Figure 3.1-6) provides a view of the project from Highway 70 northbound near Plumas Arboga Road in the Plumas Lake area. This view includes existing lattice towers associated with the project route (seen on the right) as well as an adjacent transmission route to the left. Because of the area's flat, open landscape character, unobstructed close range and distant views of these transmission lines and structures are available from this portion of Highway 70.

3.1.2 Environmental Impacts and Mitigation Measures

Methodology

This aesthetics and visual resource analysis follows the methodology described in the Federal Highway Administration's (FHWA) Visual Impact Assessment for Highway Projects (FHWA 1988). The FHWA process, in widespread use for evaluation of project visual impacts, includes the following steps to assess potential impacts on visual resources:

1. Establish a visual environment for the project by identifying "landscape unit(s)" in which the project is located. Landscape units are areas with reasonably homogeneous views that contain continuous, similar, or interrelated visual elements.
2. Assess the visual resources of the project area by describing the visual character of the project area and assessing the visual quality. Visual character is described in terms of the four visual pattern elements: form, line, color, and texture. Visual quality is assessed based on the vividness, intactness, and unity of views.
3. Describe the potentially affected viewers in terms of viewer exposure to the project and the levels of viewer sensitivity. Viewer exposure considers the distance of the viewer to the project, the position of the viewer in terms of relative elevation, the direction of the view, approximate numbers of viewers, and the duration or frequency of views. Viewer sensitivity describes the viewer's expectation of a view based on viewer activity and awareness and any local or cultural significance of the site.
4. Develop simulations to predict the potential visual impact of the project. Visual impact is a function of the projected visual resource change and anticipated viewer response.

The FHWA assessment methodology was applied for the Palermo East Nicolaus 115-kV Transmission Line Project to establish a baseline environmental setting, identify and describe the project viewers, and develop simulations for select Key Observations Points (KOPs) from which to estimate the level of contrast that would be introduced by the project. The steps listed above were conducted in order to identify landscape areas that constitute logical units for analysis and to describe the existing visual resource setting and viewers.

Reference: Fig. 4.1-3, Visual Simulation, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

Existing view from Baldwin Avenue at Railroad Avenue looking west (VP 4)

Visual simulation of proposed project

Note: For viewpoint location, refer to Figure 3.1-1.

Figure 3.1-3

Existing View and Visual Simulation: Baldwin Avenue at Railroad Avenue

This page intentionally left blank

Reference: Fig. 4.1-4, Visual Simulation, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

Existing view from Fernwood Drive near Wildwood Drive looking northeast (VP 11)

Visual simulation of proposed project

Note: For viewpoint location, refer to Figure 3.1-1.

Figure 3.1-4

Existing View and Visual Simulation: Fernwood Drive near Wildwood Drive

This page intentionally left blank

Reference: Fig. 4.1-5, Visual Simulation, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

Existing view from Highway 70 northbound at Highway 65 merge looking north (VP 14)

Visual simulation of proposed project

Note: For viewpoint location, refer to Figure 5-1.

Figure 3.1-5

Existing View and Visual Simulation: Highway 70 at Highway 65

This page intentionally left blank

Reference: Fig. 4.1-6, Visual Simulation, ***Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project***, ICF Jones & Stokes, February 2009

Existing view from Highway 70 northbound looking northeast (VP 17)

Visual simulation of the proposed project

Note: For viewpoint location, refer to Figure 3.1-1.

Palermo–East Nicolaus 115-kV Transmission Line

Figure 3.1-6

Existing View and Visual Simulation: View Northeast from Highway 70

KOPs were used to represent both typical views of the site and views from sensitive locations. The project's potential to change the visible landscape and likely viewer responses to those changes were then assessed using simulations of the project components prepared for each KOP. The simulations were systematically compared against the baseline conditions to determine the nature and degree of potential impacts on visual resources. Levels of impacts are assessed by comparing FHWA rankings of existing views with rankings based on prepared simulations. The impact assessment also takes into account the number of viewers, the duration of views, and viewer expectation. Viewer expectation takes into account viewer activity, and takes into account any federal, state, or local regulations that protect visual resources in the area.

a. Would the project have a substantial adverse effect on a scenic vista?

NO IMPACT. For purposes of this evaluation a scenic vista is defined as a public view along a corridor or from a specific vantage point that is recognized and valued for its scenic quality. The Butte County General Plan contains language recognizing the scenic qualities of the Sierra Foothills (Butte County 2000), and the Sutter County General Plan contains language recognizing the Sutter Buttes as a visual resource (Sutter County 1996). Additionally, the Yuba County General Plan describes the Yuba River Corridor as "visually appealing" (Yuba County 1996).

The project route would cross the Yuba River near Marysville, and the project area offers distant views of the Sierra Foothills and the Sutter Buttes. However, because the project would involve the replacement of existing approximately 75- to 95-foot tall LSTs with a combination of approximately 85- to 120-foot tall hybrid poles, TSPs, and LSPs, the project would not alter existing views of the river or of distinctive land formations in the backdrop. Therefore, the project would have no impact under this criterion.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

NO IMPACT. The project is not within the viewshed of any designated or eligible state scenic highways. In Butte County, Highway 70 north of Highway 191 and, in Yuba County, Highway 49 are located 10 and 25 miles from the project, respectively, and are both considered eligible state scenic highways. Sutter County has no officially designated or eligible state scenic highways. The project would have no impact on scenic resources within view of a state scenic highway.

The project is within the viewshed of several eligible and designated county and local scenic highways. These include segments of Highway 20 (proposed Yuba County scenic route), State Highway 70/Marysville Bypass to the Butte County Line (eligible Yuba County scenic route), State Highway 49 (potentially eligible Yuba County scenic route), Highway 70 at the Yuba River Bridge (recognized as scenic in Marysville General Plan), and Highway 20 (recognized for views of the Sutter Buttes in the Sutter County General Plan). However, because the project would involve the replacement of existing approximately 75- to 95-foot tall lattice steel towers with a combination of approximately 85- to 120-foot tall hybrid poles, TSPs, and LSPs, the project would not alter existing views from these roadways. Therefore, the project would have no impact under this criterion.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

LESS THAN SIGNIFICANT. Construction of the project would not substantially degrade the existing visual character or quality of the site and its surroundings. Construction-related visual impacts would result from the presence of equipment, materials, and work crews along the route and at the substations.

Additionally, grading and clearing would be required for lay-down/staging/helicopter landing zone areas, pull sites, temporary access roads, and improvements to existing roads. Disturbed areas would be restored to preconstruction conditions, including revegetation of areas where vegetation removal is required for construction. Although these effects are relatively short term, they would be most noticeable to residents who live in close proximity to the project route and to motorists traveling along the route on public roadways. Project construction would take approximately 12 to 18 months. However, at any one tower location this time period would be considerably shorter. To minimize impacts to visual resources due to construction, the applicant would instruct all construction subcontractors to keep construction areas clean and construction activities inconspicuous. With the applicant's efforts to minimize impacts to visual resources due to construction and based on the temporary nature of these impacts, construction impacts to visual resources would be less than significant.

Operation of the project would not substantially degrade the existing visual character or quality of the project site and its surroundings. The project would replace the majority of existing transmission towers along the route. Most existing structures are LSTs that would be replaced with slightly taller hybrid pole structures. In specific locations, TSPs or LSPs would be used. The total number of poles along the route would be reduced (Tables 1.8-2 and 1.8-3).

The increased height and different model of poles may be noticeable when seen in foreground views in the project area. However, the change would be incremental and some viewers may consider the hybrid, TSP, and LSPs to have a more streamlined appearance; therefore, the impact under this criterion would be less than significant. Specific visual impacts on the existing character and quality of the landscape are described below as seen in the simulations prepared for the aesthetic resources analysis.

Simulation from KOP 4

This simulation shows an unobstructed view of the new replacement hybrid pole, which would be situated close to the location of the existing tower it replaces. The new structure would be 90 feet tall whereas the existing tower is approximately 75 to 80 feet tall. In comparison to the existing structure it would replace, the new pole would be slightly taller; however, its profile and form would appear more streamlined. In these respects the change to existing visual conditions is incremental. A comparison of the Figure 3.1-3 before and after images demonstrates that the visual change associated with the project would not substantially alter the existing landscape composition and aesthetic character at this location.

Simulation from KOP 11

This simulation view shows the replacement structure, an 80-foot steel pole. The particular pole shown would be a transposition pole. Its design is somewhat unique and more visually complex than a typical replacement pole. The new pole would be located slightly further from the photo viewpoint, and although it would be somewhat taller than the existing tower, it would look similar in scale. The new transposition pole would also be similar in general appearance to the existing utility structures in the area. As seen from this vantage point, the project would result in a minor visual change, which could be somewhat noticeable to the public. However, given the presence of existing utility structures in this area, it would not significantly alter the existing visual character or quality of the landscape setting.

Simulation from KOP 14

The simulation shows three new steel replacement poles, one on the left side of the roadway and two on the right side. The project replaces the existing 90- to 95-foot LST on the left side of the road with an 80-foot steel pole approximately 400 feet away. In addition, the existing 75-foot LST on the right is replaced by a 100-foot steel pole. This replacement structure would be about 900 feet from the photo viewpoint. The simulation also shows a lattice tower on the adjacent transmission line replaced by a steel pole.

The replacement poles would be similar in scale to the existing LSTs. While the new poles would appear somewhat more substantial than the lattice towers, their streamlined profile would result in a reduced sense of visual clutter at this location. A comparison of the existing view and the visual simulation demonstrates that, given the presence of existing transmission structures, this incremental visual change would not substantially alter the landscape composition or character at this location.

Simulation from KOP 17

The simulation shows a 90-foot hybrid pole. The new structure would replace the existing 90-foot LST. The replacement pole, approximately 450 feet away, would be somewhat closer to the viewpoint than the existing tower. The next replacement pole, about 1,100 feet away, would be a 90-foot hybrid pole that would replace a 70-foot lattice tower. As seen from this Highway 70 vantage point, the project would introduce structures that differ in form but are similar in scale to existing structures. This change represents a minor incremental visual effect that would not substantially alter the area's existing landscape character or quality given the presence of multiple existing large transmission structures.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

LESS THAN SIGNIFICANT. Construction and operation of the project would not create new sources of substantial light that would adversely affect day or nighttime views along the project route. In some areas, work would be done by night to limit periods of electrical outage. The applicant would limit nighttime work (work done after 7:00 pm and before 7:00 am) to outside of urban areas. Lighting would be restricted to those areas necessary for worker safety and task execution and would be directional and shielded to avoid intrusion into non-necessary work areas. Nighttime lighting required for construction activities would be temporary, shielded, and located away from most receptors; therefore, it would not result in a substantial new source of light.

Construction and operation of the project would not create new sources of substantial glare, which would adversely affect day or nighttime views along the project route. Replacement poles would have dull grey surfaces. After their installation, the new conductors may initially appear brighter or shinier than the existing conductors; however, it is expected that they would weather to a dull finish within a few years. Therefore, the project would not create a new source of substantial nighttime light or daytime glare, and impacts under this criterion would be less than significant.

References

Butte County. 2000. General Plan, Land Use Element.

Marysville, City of. 1985. General Plan.

Sutter County. 1996. General Plan Policy Document. November 25.

Sutter County. 2008. General Plan Update: Technical Background Report. Prepared by PBS&J. http://www.co.sutter.ca.us/doc/government/depts/cs/ps/gp/gp_documents. Accessed June 22, 2008.

Yuba County. 1968. General Plan Map. Wisley and Ham Consultants.

Yuba County Government. 1996. Yuba County General Plan. Marysville, CA. Prepared by QUAD Knopf Consultants. December.

3.2 Agriculture and Forestry Resources

Table 3.2-1 Agriculture and Forestry Resources Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☒	☐

Note: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

3.2.1 Setting

Environmental Setting

Agriculture is the most extensive single land use in Yuba, Butte, and Sutter Counties (Butte County 2007, Yuba County 2008, Sutter County 2008). As shown below in Table 3.2-2 about 55 percent of the total Yuba County area, 63 percent of the total Butte County area, and 88 percent of the total Sutter County area comprises agricultural croplands and pasture. The agricultural industry remains a strong and important component of these counties' economies, and the preservation of agricultural lands is regarded as a high priority for local land use planning agencies in the region, especially in light of encroaching urban development.

Table 3.2-2 Farmland in Project Regional Area

Area	Total Land Area (acres)	Designated[a] Farmland		Other[b] Farmland		Total Farmland Area (% total)	Farmland Converted (acres), 2004 to 2006
		Total	% Total Land Area	Total	% Total Land Area		
Butte County	1.03 million	242,058	24	407,678	40	63	-1,502
Yuba County	412,160	85,384	21	142,729	35	55	-2,299
Sutter County	389,443	292,256	75	51,516	13	88	-288
Totals:	1,831,603	619,698	34	601,923	33	67	-4,089 (-0.7%)

Source: PG&E 2009, Butte County 2007, Yuba County 2008, Sutter County 2008
Notes: a = Includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, per FMMP categories
b = Includes Farmland of Local Importance and Grazing Land, per FMMP categories
NA = Not Available

Applicable Regulations, Plans, and Standards

State of California

Conservation of agricultural land in California is supported on the state level through the Division of Land Resource Protection (DLRP), and specifically through the Farmland Mapping and Monitoring Program (FMMP) and the California Land Conservation Act of 1965 (commonly referred to as the Williamson Act). For the FMMP, U.S. Department of Agriculture soils surveys and existing land use observations recorded during even-numbered years are used to determine the nature and quality of farmland in 10-acre minimum units across the state. FMMP mapping categories for the most important statewide farmland include Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Other classifications include Farmland of Local Importance and Grazing Land. FMMP data are used in elements of some county and city general plans and associated environmental documents as a way of assessing the impacts of development on farmland, and in regional studies for assessing impacts due to agricultural land conversion.

The Williamson Act enables local governments to enter into rolling, 10-year contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual, farming, and open space uses, as opposed to potential market value.

County and City Plans, Regulations, and Consultation

In locating projects constructed by public utilities subject to the California Public Utilities Commission's (CPUC's) jurisdiction, the CPUC is required to consult with local agencies regarding land use matters, though the applicant is not subject to local land use regulations (CPUC 1995). "Initial consultations with local planning agencies in Butte County, Yuba County, and Sutter County have not revealed any apparent inconsistencies between the project and existing local plans and regulations addressing agriculture in these jurisdictions" (Boeck 2009, Palmieri 2009, Teitelman 2009, Wilson 2009). The project would not cross over any land within the cities of Oroville or Marysville zoned for agricultural uses (PG&E 2009).

The general plans of Butte, Yuba, and Sutter counties all include strong agriculture preservation policies. Goals and policies for agriculture in these general plans address preserving agricultural land and farming uses; promoting growth and expansion of farmland; ensuring the continuity of areas in agricultural uses; reducing land use or other conflicts between agricultural and non-agricultural land uses; restricting non-agricultural uses in farmland areas; establishing buffers between urban development and agricultural land; and ensuring long-term protection of agricultural production.

Some zoning ordinances for agricultural land in these jurisdictions include requirements that electric transmission facilities be developed under use permits or conditional use permits granted by the local government. The project, however, is exempt from these requirements (CPUC 1995).

3.2.2 Environmental Impacts and Mitigation Measures

In Butte, Yuba, and Sutter counties, the project would traverse land with FMMP designations of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Grazing Land (Figure 3.2-1). The project would traverse several areas in these counties zoned for agricultural uses. The project would not cross or border any Williamson Act parcels in these counties.

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

LESS THAN SIGNIFICANT. For the purposes of this discussion, and per FMMP categories, "designated farmland" refers to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. "Other farmland" or "non-designated farmland" refers to Farmland of Local Importance or Grazing Land. As shown below in Table 3.2-3, an estimated 215.79 acres of designated farmland would be temporarily disturbed by the project due to the construction of temporary access roads, grading sites to provide helicopter landing pads, and for use as work areas to remove or replace existing towers and the construction of new towers (PG&E 2009).

Table 3.2-3 Estimated Farmland Disturbed by Project

Area	Acres (%) Temporary Disturbance, Designated[a] Farmland	Acres (%) Permanent Loss, Designated[a] Farmland	Acres (%) Temporary Disturbance, Other[b] Farmland	Acres (%) Permanent Loss, Other[b] Farmland
Butte County	0 (0%)	0 (0%)	1.3 (62%)	0 (0%)
Yuba County	2.3 (1.07%)	0 (0%)	0.7 (30%)	0 (0%)
Sutter County	213.49 (98.93%)	0 (0%)	0.2 (8%)	0 (0%)
City of Oroville	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Totals:	215.79	0	2.2	0

Source: PG&E 2009
Notes:
[a] Includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, per FMMP categories
[b] Includes Farmland of Local Importance and Grazing Land, per FMMP categories

This temporary removal of designated farmland from productive use represents a very small portion (0.04%) of the total designated farmland in the affected jurisdictions of Butte, Yuba, and Sutter counties. Per the applicant's right-of-way joint use policy, farmers would be fully compensated for the temporary loss of the portion of their land affected by the project; furthermore, any damage to or removal of orchard trees would also be fully compensated (Section 1.8.5.5, Cleanup and Post-Construction Restoration). The total acreage of designated farmland affected by the project would be relatively small, and disturbance would be temporary. Therefore, impacts would be less than significant under this criterion.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

NO IMPACT. The project route would not conflict with existing zoning for agricultural use and does not cross or border Williamson Act parcels (PG&E 2009); therefore, there would be no impact under this criterion.

c. Would the project conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

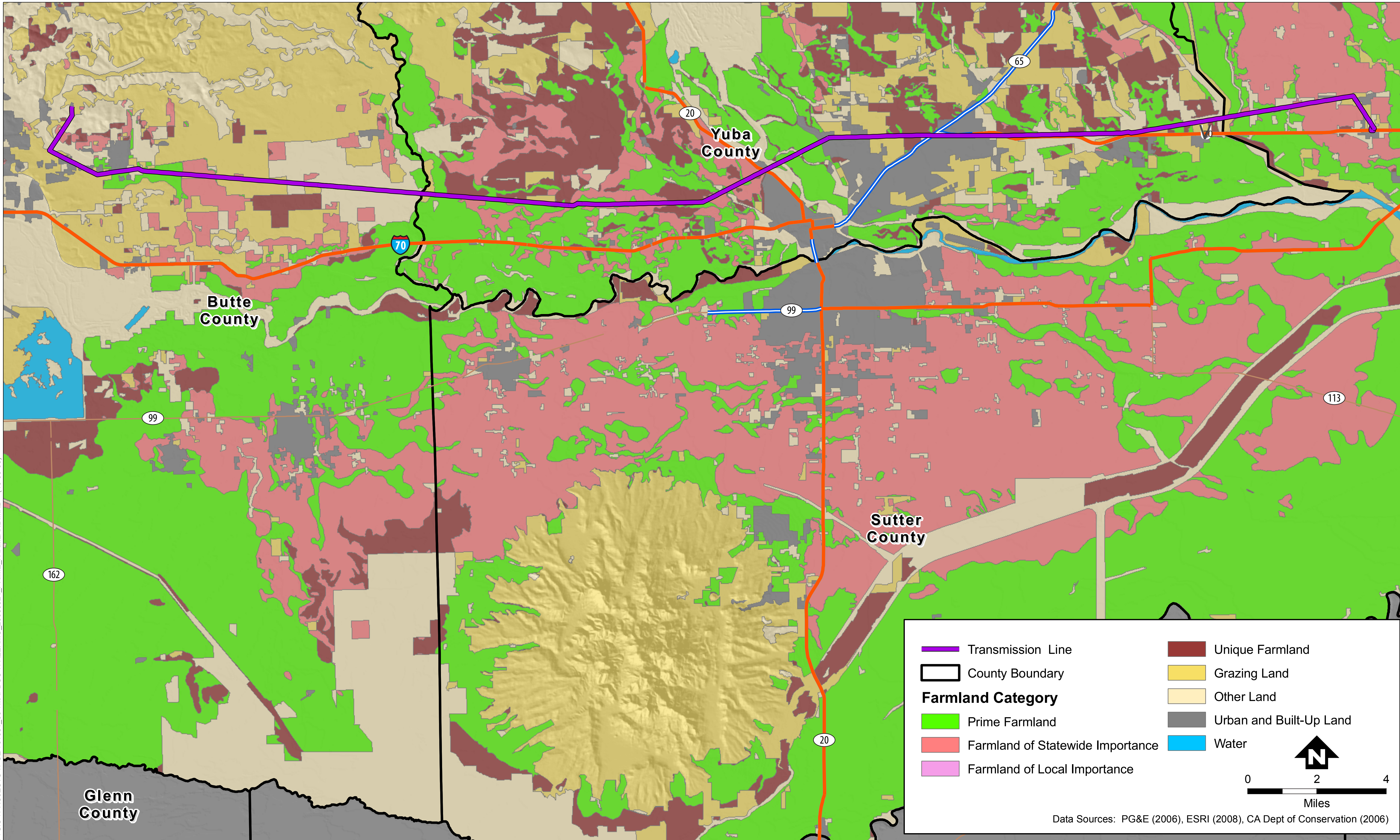
NO IMPACT. The project route would not cross forestland or timberland, and there would be no impact under this criterion.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

NO IMPACT. The project route would not cross forestland, and there would be no impact under this criterion.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

LESS THAN SIGNIFICANT. As shown above in Table 3.2-3, the project would temporarily remove about 2.2 acres of non-designated farmland from agricultural production due to the construction of temporary access roads, work areas, and helicopter landing sites (PG&E 2009). This temporary removal of non-designated farmland from productive use represents a very small portion (0.0004%) of the total non-designated farmland in the affected jurisdictions of Butte, Yuba, and Sutter counties. Per the applicant's right-of-way joint use policy, farmers would be fully compensated for the temporary loss of the portion of their land affected by the project; furthermore, any damage to or removal of orchard trees would also be fully compensated (Section 1.8.5.5, Cleanup and Post-Construction Restoration). The total acreage of non-designated farmland affected by the project would be relatively small, and disturbance would be temporary. In addition, the project route would not cross forestland. Therefore, impacts would be less than significant under this criterion.



S:\GIS\PROJECTS\PGE\61081_06\MAPDOC\PALERMO_20080924_PRIME_FARMLAND.MXD (10-30-08)

Reference: Fig. 4-2-1, Prime Farmland in the Project Vicinity, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009

002803.CP10.03.c (2009 CORP CD Archives - Vol 4) 06/24/2010

Palermo-East Nicolaus 115-kV Transmission Line

Figure 3.2-1

Prime Farmland Along the Project Route

This page intentionally left blank

References

Boeck, Van. 2009. Personal Communication. Initial Public Agency Consultation. Principal Engineer, Yuba County Public Works Department. May 27.

Butte County. 2007. Butte County General Plan Settings and Trends Report Public Draft. Prepared by Design, Community & Environment. August 2.

CPUC (California Public Utilities Commission). 1995. General Order No. 131-D, Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California. Adopted June 8, 1994. Decision 94-06-014. Modified August 11, 1995. Decision 95-08-038. August 11.

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo-East Nicolaus 115 kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services, by ICF Jones & Stokes. February.

Palmieri, Ed. 2009. Personal Communication. Initial Public Agency Consultation. Assistant Director, Yuba County Planning Division. May 27.

Sutter County. 2008. Sutter County General Plan Update Technical Background Report. Prepared by PBS&J. February.

Teitelman, Eric. 2009. Personal Communication. Initial Public Agency Consultation. Director, Community Development/Public Works Department, City of Oroville. May 27.

Wilson, Lisa. 2009. Personal Communication. Initial Public Agency Consultation. Chief, Sutter County Planning Division. May 27.

Yuba County. 2008. Yuba County General Plan Update Background Report: Agriculture. December.

This page intentionally left blank

3.3 Air Quality

Table 3.3-1 Air Quality Checklist

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 which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Setting

Project activities would be conducted within parts of Butte County, Yuba County, and Sutter County. These counties are located in the northern portion of the Sacramento Valley Air Basin (SVAB). The northern SVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the northern portion of the Sierra Nevada Mountains. These mountain ranges reach heights in excess of 6,000 feet above mean sea level (MSL), with individual peaks rising much higher. This provides a substantial physical barrier to both locally created pollution and the pollution that has been transported northward on prevailing winds from the Sacramento Metropolitan area. Although a significant area of northern SVAB is at elevations higher than 1,000 feet above MSL, the vast majority of its populace lives and works below that elevation. The valley is often subjected to inversion layers that, coupled with geographic barriers and high summer temperatures, create a high potential for air pollution problems (NSVPA 2006).

Criteria Air Pollutants

The Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants that are emitted from numerous and diverse sources considered harmful to public health and the environment. Primary NAAQS have been established to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary NAAQS have been established to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. The USEPA has set NAAQS for seven criteria pollutants:

- Carbon monoxide (CO);
- Lead;
- Nitrogen dioxide (NO_2);

- Ozone;
- Particulate matter less than or equal to ten microns in diameter (PM_{10});
- Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$); and
- Sulfur dioxide (SO_2).

Ozone is not emitted directly from emission sources but is created at near-ground level by a chemical reaction between oxides of nitrogen (NO_x) and reactive organic gases (ROGs) in the presence of sunlight. As a result, NO_x and ROGs are often referred to as ozone precursors and are regulated as a means to prevent ground-level ozone formation.

The State of California has also established California Ambient Air Quality Standards (CAAQS) for these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. NAAQS and CAAQS are summarized in Table 3.3-2. The historical frequency of violations of these standards and the air quality at air monitoring stations in the vicinity of the project are summarized in Table 3.3-3.

Table 3.3-2 Summary of National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS		CAAQS
		Primary	Secondary	
CO	8-hour	9 ppm[(a)]	-	9 ppm
	1-hour	35 ppm[(a)]	-	20 ppm
Lead	3-month (rolling average)	0.15 µg/m³	0.15 µg/m³	-
	Quarterly	1.5 µg/m³	1.5 µg/m³	-
	30-day	-	-	1.5 µg/m³
NO_2	Annual	0.053 ppm	0.053 ppm	0.030 ppm
	1-hour	-	-	0.18 ppm
Ozone	8-hour	0.075 ppm[(b)] (0.08 ppm³)[(b,c)]	0.075 ppm[(b)] (0.08 ppm³)[(b,c)]	0.070 ppm
	1-hour	0.12 ppm[(d)]	-	0.09 ppm
PM_{10}	Annual	-	-	20 µg/m³
	24-hour	150 µg/m³ [(e)]	150 µg/m³ [(e)]	50 µg/m³
$PM_{2.5}$	Annual	15.0 µg/m³ [(f)]	15.0 µg/m³ [(f)]	12 µg/m³
	24-hour	35 µg/m³ [(g)]	35 µg/m³ [(g)]	-
SO_2	Annual	0.03 ppm	-	-
	24-hour	0.14 ppm	-	0.04 ppm
	3-hour	-	0.5 ppm	-
	1-hour	-	-	0.25 ppm

Table 3.3-2 Summary of National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	CAAQS
Sulfates	24-hour	-	-	25 μg/m³
H_2S	1-hour	-	-	0.03 ppm
Vinyl chloride	24-hour	-	-	0.01 ppm
Visibility reducing particles	8-hour	-	-	Extinction coefficient of 0.23 per km visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

Sources: 40 CFR 50, 17 CCR §§ 70200
Key:
μg/m³ = micrograms per cubic meter
ppm = parts per million
Notes:
[a] Not to be exceeded more than once per year.
[b] To attain this standard, the 3-year average of the fourth highest daily maximum 8-hour average concentration over year must not exceed the standard.
[c] 1997 standard. The implementation rules for this standard will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
[d] As of June 15, 2005, 1-hour ozone NAAQS revoked in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact (EAC) Areas.
[e] Not to be exceeded more than once per year on average over 3 years.
[f] To attain this standard, the 3-year average of the 98th percentile must not exceed the standard.
[g] The 3-year average of the 98th percentile of 24-hour concentrations within an area must not exceed the standard.

Table 3.3-3 Ambient Air Quality Monitoring Data

Monitoring Station	Pollutant	Parameter	Averaging Period	2005	2006	2007
Yuba City	Ozone	Maximum Concentration (ppm)	1-hour	0.092	0.102	0.095
			8-hour	0.073	0.081	0.081
		Days with exceedances of NAAQS[a]	8-hour	0	0	0
		Days with exceedances of CAAQS[a]	1-hour	0	1	1
			8-hour	7	13	6
	CO	Maximum Concentration (ppm)	1-hour	4.4	3.1	-
			8-hour	3.4	2.3	-
		Days with exceedances of NAAQS[a]	1-hour	0	0	-
			8-hour	0	0	-
		Days with exceedances of CAAQS[a]	1-hour	0	0	-
			8-hour	0	0	-
	PM_{10}[b]	Maximum Concentration - Federal[c] (μg/m³)	24-hour	59	63	51
			Annual	24.7	23.0	19.7
		Maximum Concentration - State[d] (μg/m³)	24-hour	60	66	54
			Annual	25.0	-	-
		Days with exceedances of NAAQS[a]	24-hour	0	0	0
		Days with exceedances of CAAQS[a]	24-hour	5	4	1

Table 3.3-3 Ambient Air Quality Monitoring Data

Monitoring Station	Pollutant	Parameter	Averaging Period	2005	2006	2007
	$PM_{2.5}$[b]	Maximum Concentration - Federal[c] (µg/m³)	24-hour	45	42	45
			Annual	9.5	11.4	8.2
		Maximum Concentration - State[d,e] (µg/m³)	24-hour	47.2	51.6	55.8
			Annual	10.2	11.2	-
		Days with exceedances of NAAQS[a,f]	24-hour	0	0	0
Gridley	$PM_{2.5}$[b]	Maximum Concentration - State[d,e] (µg/m³)	24-hour	53.0	48.4	53.4
			Annual	-	-	9.2

Sources: CARB 2008, USEPA 2008
Key:
ppm = parts per million.
µg/m3 = micrograms per cubic meter.
CAAQS = California ambient air quality standards.
NAAQS = National ambient air quality standards.
Notes:
[a] An exceedance is not necessarily a violation.
[b] Measurements usually collected every 6 days.
[c] Based on standard conditions. Samplers using federal reference (or equivalent) method.
[d] Based on local conditions. Use of California-approved samplers.
[e] State criteria for calculating annual average concentrations are more stringent than the national criteria.
[f] Estimate of days with concentrations higher than the level of the standard.

USEPA compares ambient air criteria pollutant measurements with NAAQS to assess the status of air quality of regions within the states of the United States. Similarly, the California Air Resources Board (CARB) compares air pollutant measurements in California to CAAQS. Based on these comparisons, regions within the states of the U.S. and California are designated as one of the following categories:

- **Attainment.** A region is designated as attainment if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, areas that have been redesignated from nonattainment to attainment area are classified as a “maintenance area” for a 10-year period to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQS or CAAQS is exceeded for a pollutant, then the region is designated as nonattainment for that pollutant.
- **Unclassifiable.** An area is designated as unclassifiable if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

The air quality designations of the areas where project activities would occur are summarized in Table 3.3-4.

Table 3.3-4 Attainment Status within the Regional Area

Pollutant	Butte County		Yuba County		Sutter County	
	NAAQS	CAAQS	NAAQS	CAAQS	NAAQS	CAAQS
CO	Att/U	Att/U	Att/U	Att/U	Att/U	Att/U
Lead	Att/U	Att/U	Att/U	Att/U	Att/U	Att/U
NO_2	Att/U	Att/U	Att/U	Att/U	Att/U	Att/U
Ozone (1-hr)	-	NonAtt	-	NonAtt	-	NonAtt
Ozone (8-hr)	NonAtt	NonAtt	Att/U	NonAtt	NonAtt[a]	NonAtt
PM_{10}	Att/U	NonAtt	Att/U	NonAtt	Att/U	NonAtt
$PM_{2.5}$	Att/U	NonAtt	NonAtt[b]	Att/U	NonAtt[b]	Att/U
SO_2	Att/U	Att/U	Att/U	Att/U	Att/U	Att/U
Sulfates	-	Att/U	-	Att/U	-	Att/U
H_2S	-	Att/U	-	Att/U	-	Att/U
Vinyl Chloride	-	Att/U	-	Att/U	-	Att/U
VRP	-	Att/U	-	Att/U	-	Att/U

Key:
Att/U = attainment/unclassifiable area
NonAtt = nonattainment area
Notes:
a Ozone NAAQS nonattainment area includes only the southern portion of Sutter County.
b $PM_{2.5}$ NAAQS nonattainment area includes Sutter County and portions of Yuba County (Marysville area).

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants suspected or known to cause cancer, birth defects, neurological damage, or other-related issues. Except for lead, there are no established ambient air quality standards for TACs. Instead, the compounds are managed on a case-by-case basis depending on the quantity and type of emissions and proximity of potential receptors. Statewide and local programs identify industrial and commercial emitters of TACs and require reduction in these emissions. There are also federal programs that require control of certain categories of TACs. Diesel engines emit a complex mix of pollutants, the most visible of which are very small carbon particles or "soot", known as diesel particulate matter (DPM). CARB has identified DPM as a TAC.

Applicable Regulations, Plans, and Standards

Ambient air quality and air pollutant emissions from stationary and mobile sources are managed under a framework of federal, state, and local rules and regulations.

Federal

The USEPA is the principal administrator responsible for overseeing enforcement of CAA statues and regulations. The USEPA also oversees implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources. The sections of the CAA that are most applicable to the project include Title I (Air Pollution Prevention and Control) and Title II (Emission Standards for Mobile Sources).

Title I of the CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a state implementation plan (SIP) to EPA for areas in nonattainment with NAAQS. The SIP, which is reviewed and approved by the USEPA, must demonstrate how state and local regulatory agencies will institute rules, regulations and/or other programs to achieve attainment with NAAQS.

Title II of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks, standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.

State

The California Clean Air Act outlines a statewide air pollution control program in California. CARB is the primary administrator of California Clean Air Act while local air quality districts administer air rules and regulations at the regional level. CARB is responsible for establishing CAAQS, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and preparing the SIP. CARB utilizes air quality management plans prepared by local air quality districts as the basis of SIP development. State regulatory provisions applicable to the project include, but are not limited to:

Code of California Regulations Title 13, Section 2281 (13 CCR 2281): Sulfur Content of Diesel Fuel

The sulfur content of vehicular diesel fuel sold or supplied in California must not exceed 15 parts per million (ppm). Diesel supplied in California for project vehicles and equipment would be subject to this regulation and, therefore, must have a sulfur content less than or equal to 15 ppm.

Local

Local air districts in California are responsible for issuing stationary source air permits, developing emissions inventories, maintaining air quality monitoring stations, and reviewing air quality environmental documents required by CEQA. The California Clean Air Act also designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The Butte County Air Quality Management District (BCAQMD) is the administrator of air pollution rules and regulations within Butte County. The Feather River Air Quality Management District (FRAQMD) is the administrator of air pollution rules and regulations within Yuba County and Sutter County.

BCAQMD, FRAQMD, and other local air quality districts located within the northern SVAB developed the Northern Sacramento Valley Planning Area 2006 Air Quality Attainment Plan to address the area's nonattainment status for ozone. The purpose of the plan is to achieve and maintain healthy air quality throughout the northern air basin. The plan addresses the progress made in implementing the original air quality attainment plan submitted to CARB in 1991 and has been updated every three years, most recently in 2006. The plan focuses on the adoption and implementation of control measures for stationary sources, area wide sources, and indirect sources, and addresses public education and information programs. Projects directly related to population growth (e.g., residential projects) have been forecast in the plan. In general, population-related projects have been accounted for in the plan with the implementation of regional-wide control measures.

Local regulatory provisions applicable to the project include, but are not limited to:

- BCAQMD Rule 200: Nuisance. This rule prohibits emissions from any non-vehicular source in such quantity to cause injury or nuisance to a considerable number of persons or which endanger the comfort, health, or safety of the public or which cause damage to property.

- BCAQMD Rule 205: Fugitive Dust Emissions. This rule requires reasonable precautions be taken so as not to cause or allow the emissions of fugitive dust beyond of construction and/or operational activities.

- FRAQMD Rule 3.16: Fugitive Dust Emissions. This rule regulates operations which periodically may cause fugitive dust emissions into the atmosphere.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on cultural resources. See Chapter 1.0 for a complete list of APMs that the applicant has incorporated into the project to avoid or minimize impacts on all resources.

APM AIR-1: Implement best management practices to reduce construction tailpipe emissions

APM AIR-2: Implement mitigation measures for construction fugitive dust emissions

APM AIR-3: Minimize greenhouse gas emissions during construction

APM AIR-4: Implement standard mitigation measures

APM AIR-5: Implement all appropriate best available mitigation measures

APM AIR-6: Avoid concurrent daytime and nighttime construction emissions

3.3.2 Environmental Impacts and Mitigation Measures

Project construction is expected to take 12 to 18 months to complete. The construction phases along the transmission line corridor would include site preparation, tower work, and line stringing activities. Site preparation is expected to include the use of a bulldozer and backhoe and would occur over a 19-week period in the FRAQMD and an 8-week period within the BCAQMD. Tower work would require the use of numerous types of equipment (e.g., bulldozer, grader, crane, line truck) with a workforce of approximately 50 workers per day. Tower work would occur over a 19-week period in the FRAQMD and an 8-week period within the BCAQMD.

Two construction alternatives are proposed for line stringing: **Alternative 1** would use helicopters to string lines and **Alternative 2** would use ground equipment (i.e., crane and line truck) to string lines. Line stringing would occur over a 24-week period within the FRAQMD and a 6-week period within the BCAQMD. During the ozone season (May 1 through October 31), construction activities would occur over a 19-week period within the FRAQMD and a 7-week period within the BCAQMD. In order to reduce emissions and minimize impacts during the peak ozone season line stringing activities with helicopters would be replaced with ground equipment where practical.

The linear nature of project construction would mean construction work phases occurring at different locations spread out over the length of the corridor. Because construction would progress quickly, construction activities are not expected to take place near any one location for more than a few days.

Air pollutant emissions would be generated during each construction phase. Air pollutants would be emitted from engine exhaust of on-site construction equipment and on-road vehicles. On-site earthmoving activities and vehicle travel on local/access roads would also generate fugitive dust. Maximum daily and total air pollutant emissions were estimated for each construction phase using the URBEMIS 2007 emissions model and published emission factors. A summary of estimated daily emissions for each construction phase is presented in Table 3.3-5. These estimated daily emissions represent values prior to the implementation of APMs to reduce emissions. Potential emission reductions with APMs are addressed in the next section. Detailed emission calculations are presented in Appendix A.

Table 3.3-5 Estimated Daily Construction Emissions for Each Construction Phase

Construction Phase	Daily Emissions (lb/day)					
	ROGs	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	3.8	28	16	<0.01	1.8	1.6
Tower Work	12.6	125	69	1.1	5.8	5.8
<u>Line Stringing</u>						
(Alternative 1)	1.2	56	27	3.8	3.7	3.7
(Alternative 2)	2.2	21	10	<0.01	0.8	0.8

Key:
Alternative 1 = Line stringing work done with helicopters.
Alternative 2 = Line stringing work done with ground equipment.

For operation of the transmission line following construction activities, no additional maintenance is required beyond the existing ongoing maintenance. Therefore, it is assumed that there would be no long-term emission increases associated with the project.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

LESS THAN SIGNIFICANT IMPACT. Construction activities related to the project would not conflict with or obstruct implementation of the Northern Sacramento Valley Planning Area Air Quality Attainment Plan. This plans outlines the long-term strategies designed to have regional air quality comply with NAAQS and CAAQS. The emission inventory, as part of the plan, includes emissions from off-road equipment, such as construction equipment and fugitive dust. The emissions associated with project construction would be temporary and would only represent a very small fraction of the regional emission inventory included in the plan. Thus, project construction emissions are not expected to contribute significant burden to the regional emission budget. Project construction equipment would also be operated in compliance with applicable local, state, and federal regulations as outlined in the plan and related SIP. No long-term increases in operational emissions are anticipated for the project. Therefore, impacts would be less than significant under this criterion.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

LESS THAN SIGNIFICANT IMPACT. Emissions generated from construction activities are anticipated to cause temporary increases in ambient air pollutant concentrations. Given that construction activities would be transient and would impact specific locations for only limited durations, long-term impacts would not occur. The BCAQMD and FRAQMD consider short-term impacts to be less than significant so long as applicable standard mitigation measures (SMMs) and best available mitigation measures (BAMMs) are applied. Therefore, the applicant would implement APM AIR-1 through APM AIR-6 to reduce air pollutant emissions from construction activities, and impacts would be less than significant under this criterion.

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality

standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

LESS THAN SIGNIFICANT IMPACT. The project would occur in some areas that are designated as nonattainment for ozone, PM_{10}, and $PM_{2.5}$. A summary of estimated reduction in NO_x construction emissions for tower work and line stringing phase work is presented in Table 3.3-6. A summary of total reductions in maximum daily NO_x emissions for phase work being performed concurrently is presented in Table 3.3-7. During limited periods, more than one work crew may be used for each construction phase. BCAQMD and FRAQMD consider short-term impacts to be less than significant so long as applicable SMMs and BAMMs are applied. The applicant would implement APM AIR-1 through APM AIR-6 to reduce air pollutant emissions from construction activities, including reductions of emissions of ozone precursors (NO_x and ROGs), PM_{10}, and $PM_{2.5}$. Therefore, impacts would be less than significant under this criterion.

Table 3.3-6 Estimated Daily NO_x Emissions for Tower Work and Line Stringing Phases

Construction Phase	Equipment Type	Unmitigated Daily NO_x Emissions (lb/day)	Mitigated Daily NO_x Emissions (lb/day)
Tower Work	Ground Equipment	108.4	68.7
	Helicopters	16.3	16.3
	Total	*125*	*85*
Line Stringing	Helicopters[1]	56	56
	Ground Equipment[2]	21	14

Notes:
[1] Also known as Alternative 1.
[2] Equipment used when helicopters are not used (Alternative 2).

Table 3.3-7 Estimated Maximum Daily NO_x Emissions for All Construction Phases

Work Location	Season	Maximum Unmitigated Daily NO_x Emissions (lb/day)		Maximum Mitigated Daily NO_x Emissions (lb/day)	
		Alternative 1	Alternative 2	Alternative 1	Alternative 2
Feather River AQMD	Ozone Season	308	308	223	223
	Non-Ozone Season	168	143	168	100
Butte County AQMD	Ozone Season	249	249	170	170
	Non-Ozone Season	213	179	163	120

Key:
Alternative 1 = Site preparation, tower work, and/or line stringing work done with helicopters.
Alternative 2 = Site preparation, tower work, and/or line stringing work done with ground equipment.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS THAN SIGNIFICANT IMPACT. Sensitive receptors include schools, day care centers, hospitals, residential areas, and other sensitive uses. Several residential areas are located within 1,000 feet of the existing transmission line with additional residential areas within ½ mile of the line. A number of schools, retirement homes, and medical offices are also located within one half mile of the current transmission line (and proposed construction activities). A summary of specific sensitive receptors along the project transmission line is presented in Table 3.3-8. No hospitals are located within one half mile of the transmission line. Given that construction activities would be transient and would impact specific locations for only limited durations, long-term impacts would not occur. Therefore, impacts would be less than significant under this criterion.

Table 3.3-8 Sensitive Receptors in Proximity to the Project

Receptor Group	Name of Receptor	Transmission Line Location
Receptors within 1,000 feet of Transmission Line	Linda Elementary School (Linda School District)	Mile 25
	Corp Presiding Bishop Church	Mile 25
	Chapter – Jesus Christ of Latter Day Saints	Mile 25
	Tucker Matthew Alan Medical Office	Mile 25
	Yuba College	Mile 25
	Her Sao Sue Religious Organization	Mile 27
	Yuba Gardens Intermediate School (Ella School District)	Mile 28
	Lindhurst High School (Marysville Joint Unified School District)	Mile 28
	Christian Church Fairview	Mile 39
	Macum-Illinois Union Elementary School	Mile 40
Receptors from 1,000 feet to 0.25 miles of Transmission Line	Palermo School	Mile 3
	Larry E. Engwerson Medical Office	Mile 3
	Jasper Ellis Medical Office	Mile 3
	First Assembly of God Church	Mile 27
	Codie Williams Retirement Group Quarters	Mile 27
	Del Norte Clinics	Mile 27
	Robert Drodgers Retirement Group Quarters	Mile 27
	First Baptist Church of Oliveh	Mile 27
	Seventh Day Adventists	Mile 28
	Johnson Park Elementary School (Ella School District)	Mile 28
	Church of God Prophecy	Mile 28
	Ella School District	Mile 28
	Plumas Elementary School District	Mile 33
	Browns Elementary School	Mile 37

e. Would the project create objectionable odors affecting a substantial number of people?

LESS THAN SIGNIFICANT IMPACT. Exhaust from construction equipment may temporarily create odors from the combustion of fuel. However, the level of emissions would likely not cause a perceptible odor to a substantial number of people. Any odors that are perceptible would be temporary during construction activities. Vehicle emissions during project operation would very minimal and subsequently no objectionable odors are expected. Therefore, impacts would be less than significant under this criterion.

References

California Air Resource Board (CARB). 2008. Air Quality Data Statistics. http://www.arb.ca.gov/ada. Accessed September 17, 2008.

Northern Sacramento Valley Planning Area (NSVPA). 2006. Northern Sacramento Valley Planning Area Air Quality Attainment Plan.

United States Environmental Protection Agency (USEPA). 2008. Airdata. http://www.epa.gov/oar/data/index.html. Accessed September 17, 2008.

URBan EMISsions Model (URBEMIS). 2007. Software Version 9.2.0.

This page intentionally left blank

3.4 Biological Resources

Table 3.4-1 Biological Resources Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Setting

The project contains upland vegetation, wetland, and riparian habitat types. Upland vegetation habitat types identified include non-native grassland, valley oak woodland, interior live oak woodland, foothill pine-oak woodland, urban development, urban parks, rural-residential, irrigated pasture, orchard, and row crops. Wetland and riparian habitat types observed were seasonal wetland, northern hardpan vernal pool, vernal swale, valley freshwater marsh, open water, Great Valley willow riparian scrub, Great Valley mixed riparian forest, intermittent stream, irrigation canal, seasonally flooded rice crops, and non-vegetated and vegetated ditches.

Literature Search and Review

ICF Jones & Stokes completed the Proponent's Environmental Assessment and Biological Assessment for the applicant (ICF Jones & Stokes 2009a, 2009b). Addenda to the PEA were subsequently prepared to account for revised project description activities as outlined by the applicant to provide updated biological information (ICF International 2010a). All of these documents were reviewed and pertinent biological resources referenced in these documents included the following:

- A California Natural Diversity Database (CNDDB) records search of the Palermo, Honcut, Yuba City, Olivehurst, Nicolaus, Shippee, Oroville, Oroville Dam, Biggs, Bangor, Gridley, Loma Rica, Sutter, Browns Valley, Gilsizer Slough, Wheatland, Sutter Causeway, Sheridan, Knights Landing, Verona, and Pleasant Grove U.S. Geological Survey (USGS) 7.5-minute quadrangles.
- The California Native Plant Society's (CNPS's) 2010 online *Inventory of Rare and Endangered Plants of California* for Butte, Sutter, and Yuba counties and the Palermo, Honcut, Yuba City, Olivehurst, and Nicolaus USGS 7.5-minute quadrangles.
- A U.S. Fish and Wildlife Service (USFWS) list of endangered, threatened, and proposed species for Butte, Sutter, and Yuba counties and the Palermo, Honcut, Yuba City, Olivehurst, and Nicolaus USGS 7.5-minute quadrangles obtained from the USFWS website.
- The California Department of Fish and Game (DFG) 2009 Special Animals List.

Additional local, regional, and state biological resources were reviewed in order to identify pertinent ordinances or conservation plans. Regarding local and regional biological resources, the Butte, Sutter, and Yuba County General Plans were reviewed.

The CNDDB was reviewed to determine the potential occurrence of sensitive or special status species and/or habitats within the project and vicinity. Special status species include plants and animals that are either listed as endangered or threatened under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA); listed as rare under the California Native Plant Protection Act; or considered to be rare (but not formally listed) by resource agencies, professional organizations (e.g., Audubon Society, CNPS), and the scientific community. The Palermo, Honcut, Yuba City, Olivehurst, Nicolaus, Shippee, Oroville, Oroville Dam, Biggs, Bangor, Gridley, Loma Rica, Sutter, Browns Valley, Gilsizer Slough, Wheatland, Sutter Causeway, Sheridan, Knights Landing, Verona, and Pleasant Grove USGS 7.5 minute quadrangles were used to conduct the searches.

Surveys Conducted

In 2005 and 2006, the applicant and ICF Jones & Stokes biologists used aerial photographic interpretation and field verifications to describe and map vegetation and land cover types occurring within 250 feet of the existing transmission line (Appendix B-1). Vegetation communities observed were categorized primarily according to the California Department of Fish and Game's 2003 *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (DFG 2003). Noxious weed surveys were conducted in 2008 by ICF Jones & Stokes (PG&E 2009).

Waters of the United States, including wetlands, were initially delineated by ICF Jones & Stokes biologists in 2007 and 2008 during spring, summer and winter periods by both ICF Jones & Stokes and North State Resources biologists. Further wetland delineation was conducted by ICF Jones & Stokes in April and June of 2009, and in January and March of 2010 (ICF International 2010a). The study area for the delineation consisted of areas within 50 feet of all linear features, e.g., transmission lines, access roads and within 50 feet of all proposed project components/facilities, e.g., towers, substations, staging areas (see Appendix B-4 for a summary map of wetlands and waters found along the project route).

The wetland delineation was initially submitted to the U.S. Army Corps of Engineers (USACE) for verification in February 2009 and was subsequently verified by the Corps on June 23, 2009 (ICF International 2010a). Addenda to the delineation were submitted to the USACE due to project revisions made after the initial application. As of the preparation of this document, the addendum to the wetland delineation has not been verified by the USACE.

The applicant's biologists conducted various general and focused wildlife habitat assessments of the project route from 2005 to 2009. Field biologists conducted habitat assessments for valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), vernal pool wildlife species, i.e., vernal pool fairy shrimp (*Branchinecta lynchi*), conservancy fairy shrimp (*B. conservatio*), vernal pool tadpole shrimp (*Lepidurus packardi*), California tiger salamander (*Ambystoma californiense*), and western spadefoot (*Spea hammondii*), giant garter snake (*Thamnophis couchi gigas*), California black rail (*Laterallus jamaicensis coturniculus*), and western burrowing owl (*Athene cunicularia hypugea*). Surveys for raptor nesting were conducted in 2005, 2006, and 2010. Raptor nesting surveys in 2010 focused on identifying potential Swainson's hawk nests. Special status plant surveys were completed in April of 2005 and April of 2009 by ICF Jones & Stokes botanists. Protocol-level surveys for listed vernal pool invertebrates were conducted in the wet season of 2006 to 2008 and the dry season of 2009 to determine the presence or absence of all listed branchiopods in vernal pools and other potential habitat features.

ICF Jones & Stokes conducted additional biological surveys in the spring and summer of 2009 (ICF Jones & Stokes 2009c) and spring of 2010 (ICF International 2010a, 2010b) to accommodate project revisions, including the addition of new work areas. These studies focused on giant garter snake habitat and vernal pool invertebrate species, and included revised habitat mapping and dry season sampling of vernal pool features. Special status plant surveys were conducted for added work areas during the additional wetland delineation surveys (i.e., January and March 2010) and in April 2010 to survey the newly proposed helicopter landing pad area. Appendices B-1 through B-3 depict habitat and occurrences of select special status species along the project route.

Regulatory Setting

Federal and State Regulations, Plans, and Standards

The project was evaluated to determine consistency with the following federal and state regulations, plans, and standards related to the protection of biological resources:

- Federal Endangered Species Act of 1973, which protects plants and animals that are listed by the federal government as "endangered" or "threatened;"
- Section 404 of the Clean Water Act, which regulates the discharge of dredge-and-fill material into waters of the United States including wetlands;
- Section 401 of the Clean Water Act, which requires a State Water Quality Certification (or waiver thereof) for activities requiring a USACE Section 404 permit, to ensure consistency with state water quality standards;
- Migratory Bird Treaty Act for protection of migratory birds, eggs, and nests;
- Bald and Golden Eagle Protection Act for protection of the bald eagle and the golden eagle;
- California Endangered Species Act for protection of state-listed threatened, endangered, and rare species as well as species of special concern (SSC) and fully protected species (FP);
- California Fish and Game Code, including Sections 1600 through 1616, 1802, 1900 et seq., 2050 et seq., 3503, 3503.5, 3511, 3513, 4700, 5050, and 5515, and Title 14, California Code of Regulations, Sections 670.2 and 670.5, for the conservation, protection, and management of the wildlife, native plants, and habitat necessary to maintain biologically sustainable populations;

- California Porter-Cologne Water Quality Control Act, for the fill or alteration of the waters of the state; and
- California Native Plant Society maintains a watch list of plant species that are rare, threatened, or endangered in California. Rare species are those that have elevated conservation concern at the state, regional, or local level. While the CNPS list does not confer legal protection of these species, the DFG utilizes and publishes this information in the California Natural Diversity Database to track these watch list species.

Local Regulations, Plans, and Standards

Butte County

Several policies identified in the Butte County General Plan (Butte County 2000) apply to biological resources in the regional area. Policies 6.5a through 6.5d include regulating development to prevent impacts to marshes and significant riparian habitats, and to rare or endangered plants or animals. The plan also encourages the creation and expansion of natural and wilderness areas, including the federally owned Feather Falls Scenic Area and the National Wild and Scenic River (Middle Fork of the Feather River), state owned Grey Lodge Waterfowl Management Area and the borrow area along Feather River, and wilderness areas near the northeast boundary of the county (Butte County 2000, Section 6.6a).

Sutter County

The Sutter County General Plan states that the county supports areas with significant biological resources and wildlife habitat (Sutter County 2008). Goals and polices in the plan related to biological resources are the general preservation and protection of open space and natural resources, reduction of pollution, and minimizing impacts to wildlife habitats from development.

Yuba County

The Yuba County General Plan provides goals, objectives, and policies that apply to biological resources in the regional area (Yuba County 1996, Sections 5 and 7). Goal 2 and 5 provide objectives and policies to enhance natural resources and open space lands, and to protect lands of unique value to plants, fisheries, waterfowl, and other forms of animal life. Policies include requiring no-net loss of wetlands and riparian habitats, retention of existing designated wildlife areas and protection from incompatible land uses, protection of waterfowl habitat areas, and connection of wildlife preserves and parklands to wildlife/opens space corridors. Natural vegetation and open space areas along the Yuba, Bear and Feather rivers are specifically targeted for protection as well.

Goal 7-OSCG of the Yuba County General plan is to conserve valley oaks and encourage the protection and regeneration of oak woodlands in foothill areas. Policies to support this goal are:

- **Policy 116-OSCP:** Project proponents shall identify and map the location of all Valley oaks on property proposed for a development project. Identification need not include individual trees where groves of Valley oaks are present, and need not include trees less than 6 inches in diameter at breast height.
- **Policy 117-OSCP:** The following guidelines shall be implemented by the County in order to preserve Valley oaks:
  - During any construction, fill should not be placed within an area which is 1.5 times the distance from the trunk to the dripline (the perimeter of the crown) of Valley oaks and no closer than 10 feet from the trunk. The dripline of the tree should be fenced during grading and construction.

- Soil compaction, which could damage root systems and interfere with vital gas and nutrient exchanges in the roots, should be prevented by not operating or storing heavy equipment within oak driplines.
- Excavations around trees should be minimized. Depth of excavations should be the minimum required. Utility lines should be combined in single trenches whenever possible.
- If roots need to be removed, they should be cut rather than torn and immediately covered with mulch or soil to prevent desiccation.
- Developers shall submit a tree protection plan along with grading and erosion control plans when Valley oaks are present on the site to be developed. The tree protection plan should include a planting replacement program for all Valley oaks removed, including a maintenance and monitoring program, and should also show how any snags present on the site will be retained where feasible when they do not pose a threat to public safety; and

- **Policy 118-OSCP:** All proposed parcel maps, subdivision maps and conditional use permits in areas containing oak woodlands shall show the location of existing oaks by canopy area. Based on the amount of existing canopy area on the project site, the determined amount of canopy must be retained.

City of Marysville

Section 5 of the City of Marysville General Plan applies to open space, conservation, and recreation near the project route within the City of Marysville (City of Marysville 1985). Policies that protect and conserve the natural resources, open space, and recreation lands in the city include: encouraging the preservation of wildlife habitat areas, protecting the fisheries of adjacent waterways; ensuring that existing natural resources areas, scenic areas, open space areas and parks are protected from encroachment or destruction by development; permitting open space and conservation land use within floodplains; and assuring that floodplains and waterways will not be polluted.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on biological resources. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM BIO-1: Conduct a preconstruction tree survey and avoid or compensate for tree removal

APM BIO-2: Implement general protection measures for wetlands and other waters

APM BIO-3: Conduct mandatory contractor/worker awareness training for construction personnel

APM BIO-4: Install construction barrier fencing to protect wetlands and other waters adjacent to the project area

APM BIO-5: Restore temporarily impacted wetlands and other waters to pre-construction condition

APM BIO-6: Monitor during and after disturbance in wetlands and other waters

APM BIO-7: Compensate for permanent impacts on wetlands and other waters caused by new structures

APM BIO-9: Avoid impacts on special status plants

APM BIO-10: Minimize impacts on special status plants

APM BIO-11: Restore habitat for special status plants disturbed during construction

APM BIO-12: Implement management practices to control the introduction and spread of invasive plants

APM BIO-13: Avoid or minimize effects on valley elderberry longhorn beetle during construction

APM BIO-14: Compensate for loss of valley elderberry longhorn beetle habitat and potential loss of individuals

APM BIO-15: Avoid or minimize impacts on habitat for vernal pool species during construction

APM BIO-16: Compensate for impacts to habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp

APM BIO-17: Minimize potential impacts on giant garter snake during construction with suitable habitat

APM BIO-18: Compensate for loss of aquatic and upland habitat for giant garter snake

APM BIO-19: Conduct a preconstruction survey for western pond turtles and monitor construction activities within suitable aquatic and upland habitat

APM BIO-20: Conduct preconstruction surveys for active burrowing owl burrows

APM BIO-21: Implement DFG (1995) guidelines for burrowing owl mitigation, if necessary

APM BIO-22: Conduct tree trimming, vegetation removal, and if possible, tower removal during the non-breeding season

APM BIO-23: Conduct preconstruction surveys for active special status and non-special status raptors and migratory birds

APM BIO-24: Avoid disturbance of active nests by helicopter use

APM HYDRO-1: Prepare and implement a storm water pollution prevention plan

3.4.2 Environmental Impacts and Mitigation Measures

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

LESS THAN SIGNIFICANT WITH MITIGATION. During 2005 and 2006, biologists used aerial images and field verification to describe and map vegetation and land cover types along the project route that included all lands within 250-feet of all project activities. Results from these initial efforts were used to identify potential locations of sensitive biological resources. To determine a list of sensitive or special status species and/or habitats that may potentially occur along the project route, records were searched from the CNDDB; the CNPS's 2010 outline *Inventory of Rare and Endangered Plants of California*; USFWS list of endangered, threatened, and proposed species; and the DFG 2009 Special Animal List.

Special Status Plants

Initial special status plant early-blooming surveys were conducted in April 2005 along a 150-foot corridor centered along the existing transmission line. Additional early-blooming, special-status plants surveys were conducted during the spring of 2009 and 2010 to complete surveys of the additional work areas and access roads not included in the 2005 project design, but added to the 2008 project design. The 2009 surveys were conducted along meandering transects within a 250-feet wide corridor along the transmission line (ICF Jones & Stokes 2009c). The 2010 survey was focused on covering the small work areas added along the proposed project route, such as the helicopter landing pad between towers 226 and 227 (ICF International 2010a and b). Botanists determined that the habitats along the project route were not suitable for late-blooming species, and therefore, late-blooming species surveys were not conducted (ICF Jones & Stokes 2009a).

A review of the database has identified 28 special status plants that have the potential to occur along the project route. Out of the 28 special status species, three of the species were determined not to be present along the project route due to altitudinal requirements, 8 species were determined to have a low potential for occurrence, four species were determined to have a moderate potential for occurrence, and thirteen species were determined to have a high potential for occurrence (ICF Jones & Stokes 2009a). Only two of the species, brown fox sedge (*Carex vulpinoidea*) and Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii)*, were identified along the project route. Brown fox sedge was found near the intersection of Ramirez Road and the Western Pacific railroad line in Yuba County (Appendix B-1), while a population of Ahart's dwarf rush was found in a vernal pool west of towers 48 and 49 (ICF International 2010c). Brown fox sedge is not a federal or state-listed species but is designated by CNPS as a List 2.2 species. As defined by CNPS, a List 2.2 species is a species that is fairly endangered in California but is more common elsewhere. Ahart's dwarf rush is also not federally or state listed, but is CNPS List 1B.2, meaning the species is "rare, threatened, or endangered in California and elsewhere" and "fairly endangered in California." Table 3.4-2 contains a complete list of special status plant species, their legal status, their distribution, habitat requirements, and their potential for occurrence.

The occurrences of brown fox sedge and Ahart's dwarf rush are outside the footprint of disturbance for the project, thus no impacts to these occurrences are expected. Should any identified special status plants be found along the project route during implementation, those plants could be directly impacted by new tower installation, vegetation clearing, grading, or access road construction. Impacts may be temporary or permanent, and would be dependent on the type of construction activity. Through the implementation of measures APM BIO-9, APM BIO-10, and APM BIO-11, the potential impacts on special status plant species would be less than significant.

Noxious Weeds

Although noxious weeds and invasive species are not considered to be special status, they are known to result in negative effects on the abundance of native plant and wildlife species and are known to result in modification of habitats. This may create situations which may be unsuitable for special status plant and wildlife species. Through the implementation of APM BIO-12, the impacts created by the spread of noxious weeds would be less than significant.

Special Status Wildlife

During 2005 and 2006, biologists used aerial images and field verification to describe and map vegetation and land cover types within the initial project, which included all lands within 250 feet of all project activities. Results from these initial efforts were used to identify potential locations of sensitive wildlife resources. Biological surveys were then conducted by ICF Jones & Stokes biologists for various special status species, including valley elderberry longhorn beetle, vernal pool wildlife species, giant garter snake, and bird and raptor species. Table 3.4-3 describes the habitat requirements and a determination of the likelihood of occurrence for each special status wildlife species that has the potential to occur along the project route (ICF Jones & Stokes 2009a). Suitable habitat for special status wildlife was located within and adjacent to the project survey area, and several special status species were observed within and near the project route.

Table 3.4-2 Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route

Common and Scientific Name	Legal Status [a] Federal/State/CNPS	Blooming Period [b]	Geographic Distribution/California Floristic Province [c]	Habitat Requirements [b]	Potential for Occurrence [d]
Alkali milk-vetch *Astragalus tener* var. *tener*	–/–/1B.2	Mar–Jun	Merced, Solano, and Yolo Counties; historically more widespread	Alkaline soils in playas, adobe clay in valley and foothill grassland, vernal pools; below 197'	Low; no occurrences within 10 mi. of the project route and suitable microhabitat may not be present
Round-leaved filaree *California macrophylla* (formerly *Erodium macrophyllum*)	–/–/1B.1	Mar–May	Sacramento Valley, northern San Joaquin Valley, Central Western California, South Coast, & northern Channel Islands (Santa Cruz Island)	Clay soils in cismontane woodland, valley and foothill grassland; 49–3,937'	Low; no occurrences within 10 mi. of the project route and suitable microhabitat may not be present
Dissected-leaved toothwort *Cardamine pachystigma* var. *dissectifolia*	–/–/3	Feb–May	North Coast, Sacramento Valley in Butte, Glenn, Mendocino, Placer, Sonoma, and Tehama Counties	Chaparral, lower montane coniferous forest, typically in serpentine or rocky soils; 837–6,890'	None; project route occurs outside species elevation range
Brown fox sedge *Carex vulpinoidea*	–/–/2.2	May–Jun	Scattered occurrences from Siskiyou to Los Angeles Counties	Freshwater marshes and swamps, riparian woodland; 98–3,937'	High; Occurs within project area and nearest CNDDB record is ~3 mi. away
Pink creamsacs *Castilleja rubicundula* ssp. *rubicundula*	–/–/1B.2	Apr–Jun	Scattered occurrences in the southern Inner North Coast Ranges from Shasta to Santa Clara Counties	Serpentine soils in chaparral, valley and foothill grassland, cismontane woodland, meadows and seeps; 66–2,953'	Moderate; nearest occurrence is ~3.5 mi. away and suitable microhabitat (i.e., serpentine) may not be present
Hoover's spurge *Chamaesyce hooveri*	T/–/1B.2	Jul–Sep (uncommonly Oct)	Scattered occurrences in the Central Valley from Tehama to Tulare Counties	Deep playa vernal pools; 82–820'	Low; no occurrences within 10 mi. of project route
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	–/–/1B.2	May–Jul	Northern Sierra Nevada foothills from Butte to El Dorado Counties	Chaparral, cismontane woodland, often on roadcuts; 968–2,903'	None; project route occurs outside species elevation range

Table 3.4-2 Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route

Common and Scientific Name	Legal Status [a] Federal/State/CNPS	Blooming Period [b]	Geographic Distribution/California Floristic Province [c]	Habitat Requirements [b]	Potential for Occurrence [d]
Mosquin's clarkia *Clarkia mosquinii*	–/–/1B.1	May–Jul	Northern Sierra Nevada foothills in vicinity of Feather River Canyon near Pulga in northeast Butte County	Rocky, roadside areas in cismontane woodland and lower montane coniferous forest; 607–3,838'	None; project route occurs outside species elevation range
Recurved larkspur *Delphinium recurvatum*	–/–/1B.2	Mar–May	Central Valley from Colusa* to Kern Counties	Alkaline soils in valley and foothill grassland, saltbush scrub, cismontane woodland; below 2,460'	Low; no occurrences within 10 mi. of project route and suitable microhabitat may not be present
Dwarf downingia *Downingia pusilla*	–/–/2.2	Mar–May	Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley	Mesic areas in valley and foothill grassland, vernal pools; below 1,460'	High; suitable habitat and microhabitat present and nearest occurrence is ~4mi. away
Butte County fritillary *Fritillaria eastwoodiae*	–/–/3.2	Mar–May	Sierra Nevada foothills from Shasta to Yuba Counties	Chaparral, cismontane woodland, and openings in lower montane coniferous forest, sometimes on serpentine; 164–4,921'	Moderate; nearest occurrence is ~6mi. away and suitable microhabitat (i.e., serpentine) may not be present
Adobe-lily *Fritillaria pluriflora*	–/–/1B.2	Feb–Apr	Northern Sierra Nevada foothills, Inner North Coast Ranges, edges of Sacramento Valley	Often adobe soils in chaparral, cismontane woodland, valley and foothill grassland; 197–2,313'	Low; no occurrences within 10 mi. of project route and suitable microhabitat may not be present
Boggs Lake hedge-hyssop *Gratiola heterosepala*	–/E/1B.2	Apr–Aug	Inner North Coast Ranges, central Sierra Nevada foothills, Sacramento Valley, Modoc Plateau	Marshes and swamps along lake margins, vernal pools on clay soils; 33–7,792'	Low; no occurrences within 10 mi. of project route
Rose-mallow *Hibiscus lasiocarpus*	–/–/2.2	Jun–Sep	Central and southern Sacramento Valley, deltaic Central Valley, and elsewhere in the U.S.	Freshwater marshes and swamps; below 394'	High; suitable habitat present and nearest occurrence is ~5.5mi. away

Table 3.4-2 Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route

Common and Scientific Name	Legal Status [a] Federal/State/CNPS	Blooming Period [b]	Geographic Distribution/California Floristic Province [c]	Habitat Requirements [b]	Potential for Occurrence [d]
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	–/–/1B.2	Mar–May	Eastern Sacramento Valley, northeastern San Joaquin Valley with occurrences in Butte, Calaveras, Placer, Sacramento, and Yuba Counties	Wet areas in valley and foothill grassland, vernal pool margins; 98–328'	High; Occurs within the project area.
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	–/–/1B.1	Mar–May	Scattered occurrences in the northern Sacramento Valley, Cascade Range foothills from Shasta to Placer Counties	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; 115–3,346'	High; suitable habitat present and nearest occurrence is ~8mi. away
Legenere *Legenere limosa*	–/–/1B.1	May–Jun	Sacramento Valley, North Coast Ranges, northern San Joaquin Valley and Santa Cruz mountains.	Vernal pools; below 2,887'	High; suitable habitat present and nearest occurrence is ~4mi. away
Butte County meadowfoam *Limnanthes floccosa* ssp. *californica*	E/E/1B.1	Mar–May	Endemic to Butte County	Wet areas in valley and foothill grassland, vernal pools and swales; 164–3,051'	High; suitable habitat present and nearest occurrence is ~8mi. away
Veiny monardella *Monardella douglasii* ssp. *venosa*	–/–/1B.1	Mar–Jul	Occurrences in the northern and central Sierra Nevada foothills; also historically known from the Sacramento Valley	Clay soils in cismontane woodland, valley and foothill grassland; 197–1,345'	Moderate; occurrences within ~7mi. of project route and suitable microhabitat (i.e., clay) may not be present
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1	Apr–Jul	Inner North Coast Ranges, western Sacramento Valley	Mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; 16–5,709'	High; suitable habitat present and nearest occurrence is ~8.5mi. away

Table 3.4-2 Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route

Common and Scientific Name	Legal Status [a] Federal/State/CNPS	Blooming Period [b]	Geographic Distribution/California Floristic Province [c]	Habitat Requirements [b]	Potential for Occurrence [d]
Hairy Orcutt grass *Orcuttia pilosa*	E/E/1B.1	May–Sep	Scattered locations along east edge of Central Valley and adjacent foothills from Tehama to Merced Counties	Deep playa vernal pools; 180–656’	Low; no occurrences within 10 mi. of project route
Slender Orcutt grass *Orcuttia tenuis*	T/E/1B.1	May–Oct	Sierra Nevada and Cascade Range foothills from Siskiyou to Sacramento Counties	Deep playa vernal pools; 115–5,774’	High; suitable habitat present and nearest occurrence is ~2.5mi. away
Ahart’s paronychia *Paronychia ahartii*	–/–/1B.1	Mar–Jun	Northern Central Valley in Butte, Shasta, and Tehama Counties	Cismontane woodland, valley and foothill grassland, vernal pools; 98–1,673’	High; suitable habitat present and nearest occurrence is ~1.5mi. away
Hartweg’s golden sunburst *Pseudobahia bahiifolia*	E/E/1B.1	Mar–Apr	Scattered occurrences in the central Sierra Nevada foothills and eastern San Joaquin Valley from Yuba* to Madera Counties	Clay, often acidic soils in cismontane woodland, valley and foothill grassland; 49–492’	Moderate; nearest occurrence is ~2mi. away but suitable microhabitat (i.e., clay or acidic soils) may not be present
Sanford’s arrowhead *Sagittaria sanfordii*	–/–/1B.2	May–Oct	Scattered locations in Central Valley and Coast Ranges	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132’	High; suitable habitat present and nearest occurrence is ~6mi. away
Wright’s trichocoronis *Trichocoronis wrightii* var. *wrightii*	–/–/2.1	May–Sep	Scattered locations in the Central Valley and Southern Coast; Texas, northeastern Mexico	Floodplains, moist places, on alkaline soils, below 1,500’	Low; no occurrences within 10 mi. of project route and suitable microhabitat may not be present
Butte County golden clover *Trifolium jokerstii*	–/–/1B.2	Jun–Aug	Endemic to Butte County	Wet areas in valley and foothills grassland, vernal pools; 164–1,263’	High; suitable habitat present and nearest occurrence is ~7mi. away

Table 3.4-2 Special Status Plant Species Identified as Having the Potential to Occur Along the Project Route

Common and Scientific Name	Legal Status [a] Federal/State/CNPS	Blooming Period [b]	Geographic Distribution/California Floristic Province [c]	Habitat Requirements [b]	Potential for Occurrence [d]
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	May–Sep	Scattered distribution along eastern Central Valley and foothills from Shasta to Tulare Counties	Dry deep playa vernal pools; 98–3,510'	High; suitable habitat present and nearest occurrence is ~8mi. away

[a] Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- – = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- R = listed as rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation)
- – = no listing.

California Native Plant Society

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere
- 3 = List 3 species: plants about which more information is needed to determine their status.
- 0.1 = seriously endangered in California
- 0.2 = fairly endangered in California
- – = no listing.
- * = known populations believed extirpated from that County

[b] As reported in the 2010 CNPS online *Inventory of Rare and Endangered Plants of California* (CNPS 2010)

[c] As indicated in the Jepson Manual (Hickman 1993) and CNPS 2010 online *Inventory of Rare and Endangered Plants of California* (CNPS 2010)

[d] Potential for Occurrence definitions:

High: Known CNDDB occurrence of plant in region, or other documents in the project vicinity; or presence of suitable habitat conditions and suitable microhabitat conditions.
Moderate: Known CNDDB occurrence of plant in region or reported in other documents in the project vicinity; or presence of suitable habitat conditions but not suitable microhabitat conditions.
Low: Plant not known to occur in the region from the CNDDB, or other documents in the project vicinity; or habitat conditions of poor quality.
None: Plant not known to occur in the region from the CNDDB, or other documents in the project vicinity; or suitable habitat not present in any condition.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Conservancy fairy shrimp *Branchinecta conservatio*	E/--	Northern two-thirds of the Central Valley floor. Disjunct occurrences in Solano, Merced, Stanislaus, Tehama, Butte, and Glenn Counties.	Large, deep vernal pools or playas with relatively long ponding duration. Associated with large areas of annual grasslands supporting vernal pools and swales.	Low; Nearest occurrence located greater than 3.5 miles north of the study area; Species does not occur in two suitable habitat features observed in the study area.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/--	Central Valley and central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools and other ephemeral wetlands in annual grassland; also found in sandstone rock outcrop pools.	High; Several occurrences within 5-miles of the study area. Suitable habitat present in study area.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/--	Shasta County south to Merced County	Vernal pools, seasonal wetlands, and ephemeral stock ponds in annual grassland. Also occurs locally in railroad right-of-way pools and roadside ditches.	High; Observed in several pools within the study area. Suitable habitat present in study area.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/--	Stream side habitats below 3,000 feet throughout the Central Valley. Largest known populations are associated with the Sacramento River, American River, San Joaquin River, and Putah Creek watersheds.	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant for larvae and primary food source for adults.	High; Several occurrences in or near the Feather River, Bear River, Yuba River, Honcut Creek, and Wilson Creek drainages. Suitable habitat present in the study area.
Green Sturgeon *Acipenser medirostris*	T/SSC	Marine from British Columbia to the Bering sea; spawns in lower reaches of large rivers from British Columbia to San Francisco Bay. In Central Valley, Sacramento River upstream of Hamilton City to Keswick Dam and possibly lower Feather River.	Adults migrate into large rivers between late February and July and spawn between March and July. Young rear near the spawning ground and appear to remain in the river through the first winter. Food sources are benthic invertebrates and small fish.	High; Known to occur in Feather River although spawning population has not been confirmed. Suitable habitat occurs in the study area at the Feather River crossing only.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Steelhead, Central Valley *Oncorhynchus mykiss irideus*	T/SSC	California coastal and Central Valley drainages; recent declines in the tributaries of the Sacramento River.	Occurs in well-oxygenated, cool, riverine habitat. Adults typically spawn on gravel bars from December through April. Young spend at least 1-year in fresh water, migrate to marine habitats, and return to the natal stream at 3- or 4-years-old. Young feed primarily on benthic invertebrates.	High; Known to occur in lower Feather River, Yuba River, Bear River, Honcut Creek, and Wyandotte Creek from July through March; suitable habitat occurs in the study area at these drainage crossings.
Spring-run Chinook salmon, Central Valley *Oncorhynchus tshawytscha*	T/SSC	Wild populations in the Sacramento River and its tributaries, including the Yuba River, Mill Creek, Deer Creek, and Butte Creek. Feather River spring-run salmon are primarily hatchery fish. Critical habitat is designated in the Feather River up to Lake Oroville, the lower Yuba River, and the lower Bear River.	Adults migrate into the Sacramento River from April through June, remaining in deep water habitats until eggs develop. Spawning occurs upstream from mid-August through early October.	Moderate; Known to occur in the lower Yuba River. Suitable migration habitat in the study area located within in the Yuba River.
Winter-run Chinook salmon, Sacramento River *Oncorhynchus tshawytscha*	E/E	Mainstem Sacramento River below Keswick Dam.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools.	Low; Not known to occur in rivers spanned by the project; Potentially suitable habitat is present in Yuba River.
California tiger salamander *Ambystoma californiense (=A. tigrinum c.)*	T/SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Low; No known occurrences within 10-miles of study area. Suitable habitat is present.
Western spadefoot *Scaphiopus hammondii*	--/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands.	Moderate; Known occurrence within 3-miles of study area near Wyandote Creek. Suitable habitat is present.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Foothill yellow-legged frog *Rana boylii*	--/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	Low; No known occurrences within 10-miles of study area. Suitable habitat present along Wyman Ravine near Palermo.
California red-legged frog *Rana aurora draytoni*	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehema County to Fresno County.	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	Low; No known occurrences within 10-miles of study area. Suitable habitat present in study area. Possibly extirpated from Central Valley floor.
Western pond turtle *Actinemmys marmorata*	--/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	High; Several known occurrences in Yuba River, Feather River, Dry Creek, and Wyandotte Creek drainages within 10-miles of the study area. Suitable habitat is present in the study area near the Yuba and Bear Rivers, Honcut and Wyandotte Creeks, and Wyman Ravine.
California horned lizard *Phrynosoma coronatum frontale*	--/SSC	Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; below 4,000 feet in northern California	Grasslands, brushlands, woodlands, and open coniferous forest with sandy or loose soil; requires abundant ant colonies for foraging	Moderate; Nearest known occurrence located greater than 10-miles north of project. Suitable habitat present in the study area.
Giant garter snake *Thamnophis couchi gigas*	T/T	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	High; Several known occurrences located within 5-miles of the study area. A significant population associated with Feather River and Cross Canal occurs south of the project. Suitable aquatic habitat is present in several sloughs and rice fields in the study area.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Least bittern *Lxobrychus exilis (nesting)*	--/SSC	Permanent resident along the Colorado River and Salton Sea and in isolated areas of Imperial, San Diego, and Los Angeles Counties; summers in marshlands of Yolo and Sutter Counties, at Tulare Lake, and in parts of Fresno, Merced, Madera, Siskiyou, and Modoc Counties	Marshes and along pond edges where tule and rushes provide cover; nests are built over water and low in thick tule.	Low; No record of nesting within 10-miles of study area. Freshwater marsh and small stands of tule in the study area provide low quality nesting habitat.
White-faced ibis *Plegadis chihi (rookery site)*	--/SSC	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake, Lassen County, at Mendota Wildlife Management Area, Fresno County, and near Woodland, Yolo County; win	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Low; Adult birds observed in project region; no record of rookery site reported within 10-miles of the study area. Freshwater marsh and stands of tule in the study area provide low quality habitat for rookeries.
White-tailed kite *Elanus leucurus*	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High; Observed foraging in study area. Suitable nesting habitat present in the study area; potential nests observed within 0.5-mile of the project.
Northern harrier *Circus cyaneus*	--/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	High; Observed foraging in study area. Suitable nesting and foraging habitat is present.
Swainson's hawk *Buteo swainsoni*	--/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields	High; Known to occur in the study area; over 100 records of nesting activity and additional records of foraging reported within 10-miles of the project route since 1979. Suitable nesting and foraging habitat is present.
Golden eagle *Aquila chrysaetos*	--/FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	Low; No records of occurrence reported from within 10-miles of the study area. Suitable foraging habitat in study area.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Bald eagle *Haliaeetus leucocephalus*	--/E, FP	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean	Moderate; Reported to nest at Lake Oroville, approximately 8-miles north of the study area. Low quality foraging habitat is present at river crossings within the study area.
California black rail *Laterallus jamaicensis coturniculus*	--/T, FP	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	High; Numerous records of occurrence within 2mi. of project route. Suitable nesting and foraging habitat is present.
Greater sandhill crane *Grus canadensis tabida*	--/T, FP	Breeds in Siskiyou, Modoc, Lassen, Plumas, and Sierra Counties. Winters in the Central Valley, southern Imperial County, Lake Havasu National Wildlife Refuge, and the Colorado River Indian Reserve	Summers in open terrain near shallow lakes or freshwater marshes. Winters in plains and valleys near bodies of fresh water	Low; Not observed in study area. Suitbale wintering habitat present in fields and marshes located in and adjacent to the study area. Three female specimens were collected from near Gridley in 1924.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	Moderate; Historic records of occurrence reported from the Feather River near Marysville; most recent observation in this vicinity was reported in 1986. Suitable habitat may be present in riparian forest along the Bear River, Yuba river, and Honcut Creeks.
Western burrowing owl *Athene cunicularia hypugea*	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast.	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	High; CNDDB reports 4 records of burrowing owl observations within 10-miles of the study area. Active burrows not observed in study; Suitable foraging, wintering, and breeding habitat are present in annual grasslands.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Long-eared owl *Asio otus*	--/SSC	Permanent resident east of the Cascade Range from Placer County north to the Oregon border, east of the Sierra Nevada from Alpine County to Inyo County. Scattered breeding populations along the coast and in southeastern California. Winters throughout the Central Valley and southeastern California	Nests in abandoned crow, hawk, or magpie nests, usually in dense riparian stands of willows, cottonwoods, live oaks, or conifers	Low; No records of observation reported within 10-miles of study area. Low quality wintering habitat present.
Loggerhead shrike *Lanius ludovicianus*	--/SSC	Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter.	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	High; One observation of a breeding pair reported from along Gold Run Creek, approximately 10-miles northwest of the study area. Suitable habitat is present.
Bank swallow *Riparia riparia*	--/T	Occurs along the Sacramento River from Tahama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	Moderate; CNDDB reports 34 records of observations within 10-miles of the study area. Low quality suitable habitat may be present at river crossings.
Yellow warbler *Dendroica petechia*	--/SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes in the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses	Moderate; One record of observation reported from approximately 10-miles northwest of the study area. Low quality suitable habitat may be present in riparian forest along river crossings.
Grasshopper Sparrow *Ammodramus savannarum*	--/SSC	Breeds locally from Del Norte, Trinity, and Tehama counties south, west of the Cascade-Sierra Nevada axis and southeastern deserts to Sand Diego County; from sea level to 4900 feet. Rare breeder in the Shasta Valley, Siskiyou County and on the valley floor in the Central Valley.	Prefer large tracts of short to middle height, moderately open grasslands with scattered shrubs.	Low; No records of observation within 10-miles of study area. Suitable habitat is present.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Tricolored blackbird *Agelaius tricolor*	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	High; CNDDB reports 20 records of occurrence within 10-miles of the study area, of which only 7 are presumed extant. Habitat suitable for relatively small colonies is present.
Pallid bat *Antrozous pallidus*	--/SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	Low; no records of occurrence reported within 10-miles of study area. Low quality suitable habitat may be present.
Western red bat *Lasiurus blossevillii*	--/SSC	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Moderate; One record of observation reported from the Sacramento River approximately 10-miles southwest of the study area. Low quality suitable habitat may be present.

Table 3.4-3 Special Status Wildlife Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Western mastiff bat *Eumops perotis californicus*	--/SSC	Southwestern United States and central Mexico. In California, the species has been observed roosting up to 1,300 feet and foraging at > 8,800 feet. The distribution of E. perotis is likely geomorphically determined, with the species being present only where there are significant rock features offering suitable roosting habitat.	Although most frequently encountered in broad open areas, the species occurs in a variety of habitats: dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.	Moderate; CNDDB reports three records of occurrence from near Oroville, approximately 6 miles north of the study area. Low quality suitable habitat may be present.

Status explanations:
Federal
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
PT = proposed for federal listing as threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
— = no listing.

State
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
— = no listing.

Potential Occurrence in the Study Area
High: Known occurrences of the species within the study area; or California Natural Diversity Database, or other documents, reports occurrence of the species within a 10-mile radius of the study area. Suitable habitat is present within the study area.
Moderate: California Natural Diversity Database, or other documents, reports known occurrence of the species within a 10-mile radius of the study area. Poor quality suitable habitat is present within the study area.
Low: California Natural Diversity Database, or other documents, does not record the occurrence of the species within a 10-mile radius of the study area. Suitable habitat is present within the study area.

Impacts on these species may occur from construction activities associated with reconductoring of the transmission line, replacement and installation of tower poles, temporary access road construction, and temporary work staging areas. Although the majority of construction staging activities, including onsite and offsite vehicle movement, would occur during daytime hours, the applicant also proposes to conduct night lighting activity during the summer work window (June 1st to October 1st) for raising towers along the transmission line. Night lighting would occur for approximately 12-hour periods (i.e., 7 pm to 7 am), at a maximum of three tower locations at a time along the project route. Nighttime construction lighting would be shielded at the sides and/or back with cutoffs or shades. The applicant would consult with onsite biological experts and monitors to position and direct lights to minimize intrusion on adjacent sensitive habitats to the extent feasible with regard to workplace safety.

Specific impacts are discussed below for each species.

Valley Elderberry Longhorn Beetle

The VELB is a federally listed threatened species under the ESA. It is dependent upon the host plant, which can be either red or blue elderberry (*Sambucus* spp.), throughout its life cycle. Elderberry that support VELB have been observed in both riparian habitat and savannah habitat associated with riparian vegetation (Collinge et al. 2001). The combined 2006 and 2008 biological field surveys identified 26 shrubs or clusters of shrubs located within 20 feet of the project route and an additional 58 shrubs or clusters located within 100 feet of the project route (Appendix B-2). Observations made during the surveys did not find any evidence indicating the presence of VELB along the project route (ICF Jones & Stokes 2009b). The project area does not contain any formally designated critical habitat for VELB. However, review of the CNDDB (2010) identified 22 occurrences of VELB within 3 miles of the project route, located primarily along riparian habitat associated with the Yuba and Sacramento rivers.

Eight shrubs or clusters of shrubs with at least 200 stems were located by ICF Jones & Stokes within 20 feet of the project route that would be directly impacted by being either removed or trimmed for construction or for maintenance of the existing utility corridor. The remaining 18 shrubs or clusters of shrubs within 20 feet of the project route may potentially be indirectly impacted. There are 12 of these elderberry shrubs that are located directly beneath or inside of existing tower structures, though one of the identified shrubs (under tower 26) may possibly be dead (ICF Jones & Stokes 2009b).

Additionally, the drip lines of 44 elderberry shrubs or clusters are located within 100 feet but not within 20 feet of the project route. There is the potential for indirect impacts to shrubs and clusters of shrubs located within 100 feet through the possibility of altered hydrology or water table, increased air-borne dust or disease, and herbicide application (ICF Jones & Stokes 2009b).

There is the potential for a significant impact on VELB due to the permanent loss of eight elderberry shrubs or clusters of shrubs and temporary disturbance of additional potential habitat. However, none of the elderberry shrubs or clusters of shrubs identified along the project route had evidence of VELB occupation, and several of the identified shrubs are isolated and not associated with the riparian habitat. The loss of habitat is not likely to significantly reduce the availability of suitable VELB habitat, but there is potential for significant impact if an occupied shrub is affected. With the incorporation of APM BIO-13 and APM BIO-14, however, impacts to VELB would be less than significant.

Vernal Pool Species

The vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as threatened under the ESA, and the vernal pool tadpole shrimp (*Lepidurus packardi*), federally listed as endangered under the ESA, are both dependent upon vernal pool habitats for their life cycle. Approximately 45.07 acres of potential habitat for vernal pool fairy and tadpole shrimp occurs within 250 feet of proposed work areas or access roads (Appendix B-2). The vernal pool fairy shrimp was not observed during the wet season biological surveys conducted 2006 through 2008 by ICF Jones & Stokes (2009b), but occurrences have been documented within 4 miles of the project in pools located south of the project near Catlett Road in Sutter County, east of the project near Sheridan in Sutter County and on Beale Air Force base in Yuba County, and northwest of the project near the cities of Thermalito and Shippee in Butte County. The vernal tadpole shrimp was documented as occurring along the project route. Three populations were identified during the 2005 habitat assessment surveys and during the 2006 through 2008 protocol-level surveys by ICF Jones & Stokes (2009b) (Appendix B-2). Adult tadpole shrimp were observed in eight potential habitat features along the project route. Additional dry season sampling was conducted in vernal pools in 2009 along the project route (ICF Jones & Stokes 2009c). Dry season sampling was conducted in those pools that were surveyed in 2007 and 2008 and found not to support vernal pool species during surveys.

For all potential habitats along the project route that were not surveyed during the 2005 through 2009 biological surveys, vernal pool fairy shrimp and vernal pool tadpole shrimp are assumed to be present (Appendix B-2). Construction activities, such as staging, grading, and excavation, would result in temporary or permanent impacts to suitable habitat. The construction of new structures and poles would permanently impact 0.0026 acres of suitable vernal pool habitat (ICF International 2010a). Construction activities in staging areas, pull sites, and temporary access roads would have temporarily direct impacts on approximately 0.38 acres of suitable vernal pool habitat (ICF Jones & Stokes 2009c). The project would indirectly affect 7.10 acres of suitable habitat within 250 feet of work areas and temporary access roads where work may be conducted during the wet season.

Artificial night lighting may affect aquatic invertebrates through modification of photoperiodic behaviors such as mating and foraging. Aquatic zooplankton have exhibited different behaviors in wetlands that had a natural photoperiod and those that were subject to artificial lighting (Longcore & Rich 2001). This could lead to increased algae levels and possible deterioration of water quality if zooplankton do not migrate to the water surface to forage on algae due to changed lighting levels. These changes could also lead to alteration in the abundance and diversity of the special status invertebrate species (Longcore & Rich 2001). However, changes in night lighting are not expected to significantly affect vernal pool invertebrates due to the overall short-term nature of the activity (5 months), the limited activity at any one location, and the directional shielding of lights away from aquatic habitats.

The direct removal, filling, and hydrological interruption of vernal pools, seasonal wetlands, and other suitable habitat or the surrounding uplands would constitute a potentially significant impact on vernal pool invertebrate species. Through the implementation of measures APM BIO-15 and APM BIO-16, the potential impact on the vernal pool fairy shrimp and the vernal pool tadpole shrimp would be less than significant.

The conservancy fairy shrimp (*Branchinecta conservatio*), federally listed as an endangered species, is dependent on vernal pools or seasonal wetlands during its life cycle. Though there is the potential for suitable habitat along the project route, no individuals were observed during protocol level surveys (ICF Jones & Stokes 2009b). Additionally, the CNDDB (2010) does not have any records for conservancy fairy shrimp from within 10 miles of the project route, and there is a lack of historical presence in the region. Impacts on conservancy fairy shrimp would be less than significant.

Giant Garter Snake

The giant garter snake (*Thamnophis couchi gigas*) is federally listed as a threatened species under the ESA. Suitable giant garter snake habitat must have adequate water present from early-spring through mid-fall and may include marshes and agricultural wetlands or waterways such as rice fields, irrigation and drainage canals, sloughs, ponds, small lakes, and low gradient streams.

ICF Jones & Stokes (2009b) conducted reconnaissance-level surveys for giant garter snakes and suitable habitat, and no individuals were observed along the project route during any of the biological surveys conducted between 2005 through 2009 (Appendix B-3). However, the CNDDB (2010) identified 47 records of giant garter snake occurrence within 10 miles of the project route, with a significant population identified approximately five miles to the south within the aquatic habitats along Cross Canal, between Feather River and Eastside Canal. Along the project route, there is suitable giant garter snake habitat in the form of rice fields, sloughs, agricultural ditches, canals, and surrounding upland areas (within 200 feet of aquatic habitats) (Appendix B-3).

According to biological surveys, approximately 0.08 acres (0.006 acres aquatic, 0.074 acres upland) of giant garter snake habitat would be permanently impacted due to the installation of new structures and poles. A total of approximately 37.2 acres (2.87 acres aquatic, 17.35 acres rice field, and 16.96 acres upland) would be temporarily (one season) impacted by construction activities within temporary work areas and access roads (ICF International 2010a). Additionally, potential suitable habitat for the giant garter snake would be temporarily lost due to the fallowing of 298.40 acres of rice fields for one season due to project related activities (ICF Jones & Stokes 2009b). Portions of fallow rice fields would be directly impacted by project activities which would include the construction of temporary barrier berms to limit giant garter snake access to construction areas. These berms would be removed once construction is completed. Artificial night lighting may also affect the behavior of the giant garter snake in its aquatic habitat, particularly during the summer months when this diurnal species can be active on warm evenings (California Herps 2010).

Temporary and permanent loss of aquatic and upland habitat, potential loss of individuals, and disruption of movement during the breeding season would be considered a significant impact because it would result in a substantial adverse effect on this federally listed species. However, through the implementation of APM BIO-2, APM BIO-17, APM BIO-18, and MM-BIO-1, the potential impact on giant garter snake would be reduced to less than significant. Additionally, the applicant would reduce potential impacts from night lighting by the limited nature of the activity at any one location and through directional shielding of lights away from aquatic habitats. These combined measures are expected to reduce effects on the giant garter snake through habitat impact avoidance and minimization, and through compensating for unavoidable impacts. As such, the project would not appreciably reduce the reproduction, numbers, or distribution of the giant garter snake, and would result in less than significant impacts on the species.

MM BIO-1: Rice Field Fallowing Activities, Berm Construction and Removal, and Habitat Restoration. The applicant will implement measures to insure the restoration of fallowed fields. Prior to, during, and/or after berm construction and dewatering of potential giant garter snake rice field habitat, the applicant will adhere to measures within the Biological Opinion issued by the US Fish and Wildlife Service and any Incidental Take Permit/Consistency Determination issued by the California Department of Fish and Game.

California horned lizard

The California horned lizard (*Phrynosoma coronatum frontale*) is a California Species of Special Concern and occurs in a variety of habitats, such as clearing in riparian woodlands, chamise chaparral, and grasslands with loose, friable soils. Though the project area contains potential suitable habitat, none were observed during the general field surveys (ICF Jones & Stokes 2009b) and CNDDB (2010) has no records of California horned lizard within 10 miles of the project route. The likelihood of occurrence for this species is moderate due to the presence of potential suitable habitat in the form of sandy soils associated with several seasonal washes located within the Yuba River floodplain (ICF Jones & Stokes 2009b). No project activities would be conducted within the Yuba floodplain; therefore habitat for the California horned lizard would not be affected. The impact on this species would be less than significant.

Western Pond Turtle

The western pond turtle (*Actinemmys marmorata*) is designated by DFG as a California Species of Special Concern. The western pond turtle commonly inhabits slow-water aquatic habitat in rivers, streams, and ponds. Suitable habitat for this species occurs in the slow-water aquatic habitats crossed by the project route (ICF Jones & Stokes 2009b) (Appendix B-4). The CNDDB (2010) reports 11 records of western pond turtle occurrences within 10 miles of the project route. In the vicinity of the project, the western pond turtle has been observed in the Feather River, Yuba River, Dry Creek, and Wyandotte drainages.

Construction activities in annual grassland within 1,300 feet of suitable aquatic habitat could crush western pond turtles or pond turtle nests containing eggs or young. Furthermore, indirect impacts could occur if sediments or hazardous materials enter suitable pond turtle aquatic habitat or alteration in behavior from artificial might lighting. Like the giant garter snake, the western pond turtle may be nocturnal during warm summer nights (California Herps 2010). Through the implementation of APM BIO-19, the potential impacts to the western pond turtle would be less than significant. Additionally, the applicant would reduce impacts from night lighting by limiting activity at any one location and through directional shielding of lights away from aquatic habitats.

Western Spadefoot

The western spadefoot (*Scaphiopus hammondii*) is an amphibian designated by DFG as a California Species of Special Concern. The western spadefoot can be found in dry grassland habitat located in close proximity to wetlands, such as vernal pool complexes, typically near areas of friable (but usually not sandy) soils. There is the occurrence of 81.2 acres of potential suitable breeding habitat for the western spadefoot along the project route, including 75 acres of seasonal wetlands and 6.06 acres of vernal pools. Additionally, grasslands adjacent to the project route may serve as aestivating habitat for the western spadefoot (ICF Jones & Stokes 2009b). CNDDB (2010) reports two records of western spadefoot within 10 miles of the project route. One of these occurrences, reported in 1953, was located approximately three miles from the project near Palermo, while the other occurrence was reported approximately 10 miles southeast of the project, near Pleasant Grove.

Temporary and permanent loss of aquatic and upland habitat and the potential loss of individuals and disruption of movement during the breeding season would be considered a significant impact because it would result in a substantial adverse effect on this amphibian species. Additionally, construction night lighting activity could significantly affect the behavior of this nocturnal species. Artificial night lighting has been shown to affect the behavior of nocturnal frogs and toads by reducing their visual acuity and ability to consume prey (Saleh 2007). Amphibians which are particular about the light levels in which they forage may either avoid lighted areas initially, or may become attracted to lighted areas after a period of adjusting to the light (Longcore & Rich 2004). Increased night lighting adjacent to both wetlands and upland habitats can therefore affect the abundance of this species or affect its ability to forage.

Through the implementation of APM BIO-2, APM BIO-3, APM BIO-4, APM BIO-5, APM BIO-6, APM BIO-7, APM BIO-15, and APM BIO-16, the potential impacts to the western spadefoot would be less than significant. Affects on the species from short-term night lighting would be significant, and thus MM BIO-2 is required, in addition to the APMs, to reduce impacts to less than significant levels.

MM BIO-2: Reduce Construction Night Lighting Impacts on Sensitive Habitats. The applicant will implement measures to insure the reduction of construction night lighting impacts on sensitive habitats and special status wildlife. Exterior night lighting along the project route adjacent to aquatic and riparian habitat will be the lowest illumination allowed for human safety and selectively placed a minimum of 50 feet from those habitats except where workplace safety prevents this minimum distance. All construction night lighting will be shielded with cutoffs and/or shades. Vehicle traffic associated with nighttime project activities will be kept to a minimum volume and 15 mph on all non-public roads to prevent mortality of nocturnal wildlife species.

Other Amphibians

There are three additional amphibian species of special status that have the potential to occur along the project route: the California red-legged frog (*Rana aurora draytoni*) and the California tiger salamander (*Ambystoma californiense [A. tigrinum c.]*), both ESA-listed Threatened species; and the foothill yellow-legged frog (*Rana boylii*), designated by DFG as a California Species of Special Concern. All three species are dependent upon aquatic habitat during their life cycle, and while there is potential suitable habitat along the project route, the likelihood of occurrence of these species is low (ICF Jones & Stokes 2009a) due to the CNDDB (2010) not having any records of either species within 10 miles of the project route. The impacts to these amphibian species would, therefore, be less than significant.

Green Sturgeon, Chinook Salmon, and Central Valley Steelhead

The southern distinct population segment (DPS) of the green sturgeon (*Acipenser medirostris*) has been designated as federally threatened by National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) and is known to occur in the lower reaches of the Yuba River, which transects the project route. In 2008, NMFS proposed critical habitat for the southern DPS of the green sturgeon that includes the lower reaches of the Yuba River, but a final decision has not been determined (NOAA 2009). The Central Valley DPS of steelhead (*Oncorhynchus mykiss irideus*) is designated as a federally threatened species and is known to occur in the lower reaches of the Yuba and Bear rivers, which are both located along the project route. Additionally, the lower reaches of the Yuba and Bear River have been designated as critical habitat for the Central Valley steelhead. The Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionary Significant Unit is designated as federally threatened species and is known to occur in the lower reaches of the Yuba River. The lower reaches of the Yuba River have also been designated as critical habitat for Central Valley spring-run Chinook salmon.

There is the potential for temporary disturbance of habitat for special status fish species that occur in the Yuba River, Bear River, Honcut Creek, and Wyandotte Creek because both the existing and proposed transmission lines span these waterways. However, project construction activities would not occur within 50 feet of existing banks. Through the implementation of best management practices (BMPs), which would be included as part of the applicant's Stormwater Pollution Prevention Plan (SWPPP; APM HYDRO-1), and the implementation of APM BIO-2, APM BIO-3, APM BIO-4, and MM BIO-2, the potential impact on these special status fish species would be less than significant.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as threatened under CESA and protected under the Migratory Bird Treaty Act (MBTA). No Swainson's hawk were observed directly along the project route but were observed adjacent (ICF Jones & Stokes 2009a). Suitable nesting habitat was observed along the project route near Bear River, Upper and Lower Honcut Creek, Yankee Slough, and Ping Slough. One active Swainson's hawk nest was observed 0.5 miles adjacent to the project route. Other large-stick raptor nests were also observed within 0.5 miles of the project route during the 2005, 2006, and 2010 surveys that could serve as Swainson's hawk nests (Appendix B-5; ICF Jones & Stokes 2009a). The CNDDB (2010) reports 112 records of occurrences within 10 miles of the project route.

Construction activities such as tree and shrub removal and trimming, modification to or removal of existing towers, excavation and grading, and the use of helicopters within or directly adjacent to the project route could result in direct impacts to the nesting of this species. These activities have the potential to cause nesting birds to flush from their nests, possibly resulting in loss of eggs and fledglings. However, through the implementation of APM BIO-22, APM BIO-23, and APM BIO-24 the potential impacts to the Swainson's hawk would be less than significant.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is listed as Endangered under CESA and is a fully protected species under California Fish and Game (CFG) Code Section 3511 and protected under the MBTA and Bald and Golden Eagle Protection Act. Bald eagles are commonly associated with large bodies of water and have been documented to nest approximately eight miles to the north of the project route at Lake Oroville. However, due to the lack of documented occurrences and lack of suitable nesting habitat along the project route, impacts to bald eagles would be less than significant.

White-tailed Kite

The white-tailed kite (*Elanus leaucurus*) is a Fully Protected Species under CFG Code Section 3511 and is protected under the MBTA. The riparian areas (approximately 30.5 acres) present along the project route contain suitable nesting habitat, and there is foraging habitat present in the form of annual grasslands and agricultural croplands. Individuals were observed foraging along the project route during wildlife surveys conducted in 2005 through 2009 (ICF Jones & Stokes 2009a), and CNDDB (2010) reports one record of white-tailed kite occurrence approximately 0.5 mile west of the project route. Construction activities such as tree and shrub removal and trimming, modification to or removal of existing towers, excavation and grading, and the use of helicopters within or directly adjacent to the project route could result in direct impacts to the nesting of this species. These activities have the potential to cause nesting birds to flush from their nests, possibly resulting in loss of eggs and fledglings. However, with the implementation of APM BIO-22, APM BIO-23, and APM BIO-24, impacts on the white-tailed kite would be less than significant.

Northern Harrier

The Northern harrier (*Circus cyaneus*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The project area contains suitable nesting and foraging habitat for the Northern harrier in the form of wetlands, grasslands, and agricultural croplands. Individuals were not observed along the project route but were observed foraging in adjacent fields during focused wildlife studies (ICF Jones & Stokes 2009a). Additionally, CNDDB (2010) reports five records of Northern harrier occurrences within 10 miles of the project route. Construction activities such as tree and shrub removal and trimming, modification to or removal of existing towers, excavation and grading, and the use of helicopters within or directly adjacent to the project route could result in direct impacts to the nesting of this species. These activities have the potential to cause nesting birds to flush from their nests, possibly resulting in loss of eggs and fledglings. With the implementation of APM BIO-22, APM BIO-23, and APM BIO-24, impacts on the Northern harrier would be less than significant.

Western Burrowing Owl

The western burrowing owl (*Athene cunicularia hypugea*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The preferred habitat of the western burrowing owl is open, dry, and short grassland habitats. This species is frequently found in association with burrowing mammals that may provide burrows for nesting. Common suitable nesting habitat includes roadside embankments, levees, and along riparian corridors. Suitable habitat to support western burrowing owl exists in several portions of the project route. The species was observed in the northern portion (near Tower 61) of the project route during 2005, and there were signs of burrowing owls observed in the same location during the 2006 survey (ICF Jones & Stokes 2009a). Additionally, CNDDB (2010) reports four observations of western burrowing owl within 10 miles of the project route, with the closest occurrence located approximately 5 miles to the west, near Thermalito Afterbay.

Construction activities (e.g., staging, grading, and excavation) associated with the project could result in temporary and permanent impacts on burrowing owl nesting and foraging habitat. If burrowing owls are using burrows within 250 feet of the construction right-of-way, grading and excavation activities could result in removal of an occupied breeding or wintering burrow site and loss of adults, young, or eggs. This impact would be significant because construction could have an adverse effect on this species and violate the MBTA and CFG Code Section 3503.5. Construction night lighting could also significantly affect the behavior of this crepuscular bird species, as changes in lighting may affect foraging times, prey availability, and site movements (Longcore & Rich 2001). Implementation of APM BIO-20, APM BIO-21, and MM BIO-2 would reduce impacts to less than significant levels.

Tri-Colored Blackbird

The tri-colored blackbird (*Agelaius tricolor*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The tri-colored blackbird is a colonial nester that requires the presence of accessible water; a suitable nesting substrate; and open-range foraging habitat of natural grassland, woodland, or agricultural cropland. The project area contains both suitable nesting and foraging habitat, and individuals were observed during the habitat survey in 2006. CNDDB (2010) also reports 20 observations of tri-colored blackbird within 10 miles of the project route, though many of the observations are historical recordings of nesting sites that no longer support suitable nesting habitat due to the development of the land for agricultural and residential use.

There is the potential for tri-colored blackbird nesting habitat to be disturbed by increased traffic, human activity, and noise associated with project construction activities; however, there would be no removal of suitable nesting habitat for this species. Disturbance could be both temporary, as suitable nesting habitat is abundant along the project route and adjacent areas, or permanent, if large nesting colonies in the area are abandoned due to construction disturbances (ICF Jones & Stokes 2009a). This potential impact would likely not result in a substantial reduction of the tri-colored blackbird in the region. However, to minimize disturbance impacts to any tri-colored blackbird colonies, the timing of certain construction activities during the non-breeding season (APM BIO-22) and the use of buffers as noted in APM BIO-23 would be implemented to reduce impacts to less than significant levels.

California Black Rail

California black rail (*Laterallus jamaicensis coturniculus*) is listed as threatened under CESA and is a Fully Protected Species under CFG Code Section 3511. The freshwater marsh habitats present along the project route contain suitable forage and nesting habitat. The CNDDB (2010) also reports numerous records of California black rail within 5 miles of the project route. Construction activities such as tree and shrub removal and trimming, modification to or removal of existing towers, excavation and grading, and the use of helicopters within or directly adjacent to the project route could result in direct impacts to the nesting of this species. These activities have the potential to cause nesting birds to flush from their nests, possibly resulting in loss of eggs and fledglings. However, through the implementation of APM BIO-22, APM BIO-23, and APM BIO-24, impacts on the California black rail would be less than significant.

Greater Sandhill Crane

Greater sandhill crane (*Grus Canadensis tabida*) is listed as threatened under CESA and is a Fully Protected Species under CFG Code Section 3511. While the project area is not within the breeding range of the greater sandhill crane, it is within its wintering range and contains suitable wintering habitat, grasslands, wetlands, and agricultural croplands. The Greater sandhill crane was not observed along the project route during the field surveys and the likelihood of occurrence is low (ICF Jones & Stokes 2009a). The impact on this species would be less than significant.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a candidate species for listing under the ESA, but is listed as endangered under the CESA. The project area contains potential suitable nesting habitat for this species in the riparian forest along the Bear River, Yuba River, and Honcut Creek; however, this habitat is considered low in quality (ICF Jones & Stokes 2009a). Therefore, the likelihood of occurrence is low, and impacts on the Western yellow-billed cuckoo would be less than significant.

Bank Swallow

The bank swallow (*Riparia riparia*) is listed as Threatened under CESA. Habitat for this species includes bluffs or banks with soft sand, sandy loam, or clay soil, often overlooking water for its nesting habitat. No bank swallows or bank swallow nests were observed during the 2005 and 2009 biological surveys. However, there is potential suitable nesting habitat at river crossings along the project route (ICF Jones & Stokes 2009a). Furthermore, CNDDB (2010) reports occurrences of nesting bank swallows along the Feather River to the west of the project route.

Most impacts to the bank swallow from the project would be minimized by avoidance of potential nesting habitat by work areas and the spanning of these areas by the transmission line. However, construction night lighting could significantly affect the behavior of this bird species. The bank swallow can be active at night and changes in lighting may affect foraging and site movements (Longcore & Rich 2001). Artificial lighting may also attract night migrating birds to tall, lighted structures where they can become disoriented (Longcore & Rich 2004). Within the sphere of lights, birds may collide with each other or a structure, become exhausted, or may be taken by predators such as owls (Longcore & Rich 2004). Implementation of APM BIO-20, APM BIO-21, and MM BIO-2 would reduce impacts to less than significant levels.

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is a designated as a Fully Protected Species under CFG Code Section 3511 and protected under the MBTA and Bald and Golden Eagle Protection Act. The project area does not contain any suitable golden eagle nesting habitat, although the agricultural fields and grasslands do provide suitable foraging habitat (ICF Jones & Stokes 2009a). Due to the lack of documented occurrences and lack of suitable nesting habitat along the project route, impacts to golden eagles would be less than significant.

Least Bittern

The least bittern (*Lxobrychus exilis*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The CNDDB (2010) did not identify any occurrences within 10 miles of the project route; therefore, impacts to this species would be less than significant.

White-faced Ibis

The white-faced ibis (*Plegadis chihi*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. Although adults have been observed in the region, the CNDDB (2010) did not identify any rookery occurrences within 10 miles of the project route; therefore, impacts to this species would be less than significant.

Long-Eared Owl

The long-eared owl (*Asio otus*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The CNDDB (2010) did not identify any occurrences within 10 miles of the project route; therefore, the impacts to this species would be less than significant.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The CNDDB (2010) did not identify any occurrences within 10 miles of the project route; therefore, the impacts to this species would be less than significant.

Yellow Warbler

The yellow warbler (*Dendroica petechia*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The CNDDB (2010) did not identify any occurrences within 10 miles of the project route; therefore, the impacts to this species would be less than significant.

Grasshopper Sparrow

The grasshopper sparrow (*Ammodramus savannarum*) is designated by DFG as a California Species of Special Concern and is protected under the MBTA. The CNDDB (2010) did not identify any occurrences within 10 miles of the project route; therefore, the impacts to this species would be less than significant.

Bats

The Pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and western mastiff bat (*Eumops perotis californicus*) are all designated by DFG as California Species of Special Concern, and all have the potential to occur along the project route. All three bats may utilize bridges and buildings for day roosts and maternity roosts. Additionally, the Pallid bat and western red bat would also use tree cavities within close proximity to riparian corridors as roost sites. Though suitable roost sites are available along the project route in the form of bridges, railroad crossings, railroad trestles, and trees, the project is not expected to directly affect any of these potential roost sites. The potential noise and vibration disturbance associated with project construction would be temporary and less than the level of existing disturbances associated with highway overpass structures, railroad corridor structures, or residential buildings that provide potential roosting habitat. This impact would be expected to not result in substantial impacts on bat species.

The use of construction night lighting within the project would be expected to affect the behavior of special status bat species both through attraction and avoidance. Artificial lightning may attract prey, such as moths, for species of bats that feed on insects while in flight, such as the western red bat (TPW 2010). Conversely, larger, slower-flying species of bats such as the western mastiff bat may avoid artificially lighted areas due to increased risk of predation by owls (Longcore & Rich 2001). The western mastiff bat is the largest of American bat species and relative to the western red bat, is a slow-flying bat species and would be expected to avoid heavily lit areas (Best 1996). The pallid bat feeds by gleaning sedentary prey, does not feed while in flight, and would be expected to not be attracted to lighted areas to forage

(Hermanson 1983). These impacts on bat species from construction night lighting would be short-term but significant, and MM BIO-2 is required to reduce impacts to less than significant levels.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?

LESS THAN SIGNIFICANT WITH MITIGATION. The project contains 30.49 acres of riparian habitats comprised of both Great Valley willow riparian scrub and Great Valley mixed riparian forest (ICF Jones & Stokes 2009a) (Appendix B-1). Great Valley willow riparian scrub encompasses 22.44 acres within the project area and is associated with agricultural canals. Great Valley mixed riparian forest occurs along the project route, primarily along Honcut Creek and various intermittent streams. This mixed riparian community encompasses 8.05 acres and consists of a well-developed overstory of mature trees, shrub layer, and herbaceous understory.

The upland and riparian vegetation types along the project route are considered common in both the area and the surrounding region (ICF Jones & Stokes 2009a). Where riparian areas would be crossed, new towers would be set back from riparian areas and stream crossings and power lines would be spanned over such crossings. Staging areas would be set back at least 50 feet from streams, creeks, or other water bodies to avoid impacts to riparian habitat. Where portions of the existing access road may be impassible for larger/heavier construction vehicles, portable bridges (that would span top of bank to top of bank) are proposed in areas without expansive riparian vegetation. In addition, the majority of vehicular traffic and heavy equipment use would be scheduled for the dry/low flow season, except where indicated in Appendix B-2. If bridging is not possible, construction would utilize sky crane helicopters to transport materials to job sites, and riparian areas would be avoided. A SWPPP, incorporating BMPs, would also be prepared as part of the general construction permit that would include erosion and sediment control measures (APM HYDRO-1).

Spanning streams with portable plates and/or bridges would still involve the temporary compaction and crushing of vegetation and soil along the banks and within the riparian buffer zone. This short-term impact would be significant, but MM BIO-3 would reduce impacts to less than significant levels.

> **MM BIO-3: Riparian Habitat Impact Minimization Measures.** The applicant will implement measures to insure the reduction of construction impacts on riparian habitats. No riparian trees or shrubs will be removed during construction outside of the existing ROW in PG&E maintained areas unless required by CPUC General Order 95 and applicable safety codes. Herbaceous riparian vegetation will be restored to pre-construction conditions within 30 days of the end of construction. The applicant will contact the DFG prior to construction to determine whether a 1600 Streambed Alteration Agreement is necessary for the project.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

LESS THAN SIGNIFICANT. Waters of the United States, including wetlands, were delineated in 2007, 2008, 2009, and 2010 (Appendix B-4). The extent of non-wetland waters was identified by ICF Jones & Stokes and North State Resources biologists using the ordinary high-water mark following guidance issued by the U.S. Army Corps of Engineers (USACE 2005). Although a majority of the wetlands may be considered jurisdictional by the USACE, some isolated wetlands may not be considered jurisdictional under Section 404 of the Clean Water Act (Environmental Laboratory 1987). For the purposes of this assessment and determining effects on potential waters of the U.S., all waters and wetlands along the project route were assumed to be jurisdictional.

There were 184.28 acres of potential waters of the U.S., including wetlands, identified within 50 feet of all proposed work areas (ICF International 2010a). A total of nine wetland habitat types were identified, including northern hardpan vernal pool (5.53 acres), vernal swale (0.17 acre), seasonal wetland (29.25 acres), Valley freshwater marsh (20.83 acres), open water (2.47 acres located within 50 feet of proposed work areas), intermittent stream (0.55 acre), vegetated ditch (17.62 acres), irrigation canal (0.04 acre), and agricultural wetlands (107.82 acres).

A total of 0.054 acres of permanent fill would occur where 56 new structure footings are proposed for placement in wetlands or other waters. These placements include seven tower footings in seasonal wetlands, two footings in vernal pools, one in a vegetated ditch, 41 in rice fields, and five towers in freshwater marsh. The maximum impact acreage per tower footing is estimated by the applicant to be a 7.5 feet diameter circle of 0.001 acres per permanent tower footing. Permanent impacts would be significant and compensation plans to mitigate permanent impacts to less than significant are detailed in APM BIO-7.

Direct temporary impacts totaling 26.84 acres would occur from ground disturbance near waters and wetlands located within designated work area boundaries, temporary project roadways, or where existing tower footings already located in wetlands or other waters are to be removed. Indirect temporary impacts resulting from erosion runoff, dust generation, or the propagation of invasive species could occur to wetlands or other waters located outside work area boundaries or roads, but within 50 feet of any project features or work areas. The total acreage of temporary indirect impacts to wetlands and other waters was not calculated. However, APM BIO-5 and APM BIO-6 would minimize direct temporary impacts, and all indirect temporary impacts would be avoidable with the implementation of APM BIO-2 through APM BIO-4 and APM BIO-12. In addition, a SWPPP would be implemented in order to prevent construction-related erosion and sediments from entering nearby waterways (APM HYDRO-1). With implementation of the APMs, impacts on wetlands or other waters would be less than significant.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

LESS THAN SIGNIFICANT. Project construction activities could temporarily disturb habitat for special status fish species that occur in the Yuba River, Bear River, Honcut Creek, and Wyandotte Creek. Both the existing and proposed transmission lines span the aforementioned waterways. Special status fish species identified in these waterways include green sturgeon, Central Valley steelhead, spring-run Chinook salmon, and fall-/late-fall-run Chinook salmon. In addition, critical habitat has been identified along the project route for both Central Valley steelhead and Central Valley spring-run Chinook salmon, as well as proposed critical habitat for green sturgeon. CFG Code Sections 1600–1616 require a Streambed Alteration Agreement Permit if activities were to interfere, in any way, with the flow of these waterways. However, project construction activities would not occur within 50 feet of the existing banks of these rivers, streams, or creeks. Implementation of APM BIO-2, APM BIO-3, and APM BIO-4 would reduce impacts on special status species to less than significant levels.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

LESS THAN SIGNIFICANT WITH MITIGATION. The project spans Butte, Sutter, and Yuba counties. All three counties, as well as the City of Marysville have policies that apply to biological resources along the project route, which aim to protect lands of unique value to plants, fisheries, waterfowl, and other forms of animal life. These policies include requiring no-net loss of wetlands and riparian habitats; retention of existing designated wildlife areas; protection from incompatible land uses; protection of waterfowl habitat areas; identification of areas containing habitat suitable for threatened, endangered, or special status species; connection of wildlife preserves and parklands to wildlife/open space corridors conservation; identification of land use within floodplains; and assurance that floodplains and waterways will not be polluted (ICF Jones & Stokes 2009a).

Goal 7-OSCG of the Yuba County General Plan is to conserve Valley oaks and encourage the protection and regeneration of oak woodlands in foothill areas (Yuba County 1996). Relevant policies that apply to the project are exemplified in Policy 116-OSCP through Policy 118-OSCP under Goal 7-OSCG of the Yuba County General Plan. These policies provide guidelines for the identification and mapping of all Valley oaks, placement of fill near trees, soil compaction, type and depth of nearby excavation, root removal, required protective perimeter and fencing, tree removal, maintenance, and the assessment of snags on properties proposed for a development project. Butte and Sutter Counties do not have any policies that address any specific tree species.

Valley oaks are known to occur in Yuba County, and can occur at elevations up to approximately 5,600 feet (Yuba County Resource Conservation District 2009). A preconstruction survey would be needed to identify any Valley oaks located along the project route. APM BIO-1 would be implemented to ensure that impacts on trees protected by county ordinances would be less than significant. Additionally, MM BIO-4 would ensure that impacts on Valley oak, specifically, would be less than significant should the presence of Valley oak along the project route be identified during the preconstruction tree survey.

MM BIO-4: Adherence to Policy 116-OSCP Through Policy 118-OSCP Under Goal 7-OSCG of the Yuba County General Plan, Provisions for Valley Oak. Yuba County policies concerning Valley oak, if these species would be impacted by project activities, shall be followed. Specific mitigation measures should be designated and implemented by the applicant regarding Valley oak to adhere to the following Yuba County policies:

- **Policy 116-OSCP:** Project proponent shall identify and map the location of all Valley oaks within the project area. Identification need not include individual trees where groves of Valley oaks are present, and need not include trees less than 6 inches in diameter at breast height.
- **Policy 117-OSCP:** The following guidelines shall be implemented by the project proponent:
  - During any construction, fill should not be placed within an area which is 1.5 times the distance from the trunk to the dripline (the perimeter of the crown) of Valley oaks and no closer than 10 feet from the trunk. The dripline of the tree should be fenced during grading and construction.
  - Soil compaction, which could damage root systems and interfere with vital gas and nutrient exchanges in the roots, should be prevented by not operating or storing heavy equipment within oak driplines.
  - Excavations around trees should be minimized. Depth of excavations should be the minimum required. Utility lines should be combined in single trenches whenever possible.
  - If roots need to be removed, they should be cut rather than torn and immediately covered with mulch or soil to prevent desiccation.

- Submit a tree protection plan to Yuba County along with grading and erosion control plans when Valley oaks are present [within construction work areas]. The tree protection plan should include a planting replacement program for all Valley oaks removed, including maintenance and monitoring program, and should also show how any snags present on the site would be retained where feasible when they do not pose a threat to public safety.

- **Policy 118-OSCP:** Based on the amount of existing Valley oak canopy area on the project site, the determined amount of canopy must be retained [unless required by CPUC General Order 95 and applicable safety codes].

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

NO IMPACT. The project is not located within the boundaries of a current Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). A HCP/NCCP is proposed for Butte County but has not been completed or implemented (Butte County Association of Governments 2008). According to the Butte County Association of Governments, this plan would not go into effect until 2012 at the earliest. A joint HCP/NCCP is proposed for Sutter and Yuba Counties (Sutter County Public Works 2009). According to the Sutter County Public Works, Community Services-Environmental Health Department, this plan would not be finalized and/or implemented until 2010 or later (Sutter County Public Works 2009). Therefore, the project would result in no impact under this criterion.

References

Best, T.L., Kiser, W. M., Freeman, P. W. 1996. Eumops Perotis, Mammalian Species. 534, pp. 1–8.

Butte County Association of Governments. 2008. Butte Regional Conservation Plan (Proposed), Chico, CA.

Butte County. 2000. Butte County General Plan: Land Use Element.

California Herps (2010b) Giant Garter Snake, Western Pond Turtle. http://www.californiaherps.com/snakes/pages/t.gigas.html. Accessed June 9, 2010.

City of Marysville. 1985. City of Marysville General Plan.

Collinge, S. K., M. Holyoak, C. B. Barr, and J. T. Marty. 2001 Riparian habitat fragmentation and population persistence of the threatened valley elderberry beetle in Central CA. Biological Conservation (100:1-3-113). http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V5X-42SPW31C. Accessed June 24, 2009.

CNDDB (California Natural Diversity Database). 2009. RareFind, Version 3.1.0. Updated June 2. California Department of Fish and Game. Sacramento, CA. http://www.dfg.ca.gov/biogeodata/cnddb/rarefind.asp. Accessed June 19, 2009.

CNPS (California Native Plant Society). 2010. Inventory of Rare and Endangered Plants, Version 7-10b. Updated April 21. http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi. Access June 28, 2010.

DFG (Department of Fish and Game), California. 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Biogeographic Data Branch. September.

__________. 2009. Special Animals List (883 taxa).Biogeographic Data Branch. California Natural Diversity Database. July.

Environmental Laboratory. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Hermanson, J. W., O'Shea, T. J. 1983. Antrozous Pallidus, Mammalian Species. 213: pp. 1–8.

Hickman, J. C. (ed.). 1993. The Jepson Manual: Higher Plants of California. Berkeley, CA: University of California Press.

ICF International. 2010a. Amendment to PEA Biological Resources, Memoranda, April 15. Revisions to Environmental Analysis Resulting from Changes in Project, Palermo–East Nicolaus 115kV Transmission Line Reconstruction Project: Biological Resources. Prepared for PG&E. Sacramento, CA.

__________. 2010b. Summary of Results of the 2010 Special-Status Plant Survey for the Palermo to East Nicolaus 115 kV Transmission Line Reconstruction Project Additions, Memoranda, July 19. Prepared for PG&E. Sacramento, CA.

__________. 2010c. Summary of Results of the 2005 to 2009 Special-Status Plant Surveys for the Palermo to East Nicolaus 115 kV Transmission Line Reconstruction Project, Memoranda, April 7. Prepared for PG&E. Sacramento, CA.

ICF Jones & Stokes. 2009a. Proponent's Environmental Assessment Palermo–East Nicolaus 115kV Transmission Line Reconstruction Project. Prepared for PG&E. Sacramento, CA.

__________. 2009b. Biological Assessment: Palermo to East Nicolaus 115kV Transmission Reconstruction Project. Prepared for PG&E. Sacramento, CA.

__________. 2009c. Amendment to PEA Biological Resources, Memorandum, August 25, 2009: Palermo to East Nicolaus 115kV Transmission Reconstruction Project. Prepared for PG&E. Sacramento, CA.

Longcore, T. & Rich, C. 2001. A Review of the Ecological Effects of Road Reconfiguration and Expansion on Coastal Wetland Ecosystems, November 14, 2001.

Longcore, T. & Rich, C. 2004. Ecological Light Pollution, Front Ecol Environ. Volume 2, No. 4. pp. 191–198.

NOAA (National Oceanic and Atmospheric Association). 2009. NOAA Fisheries Office of Protected Species: Green Sturgeon (Acipenser medirostris). http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm. Accessed July 6, 2009.

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services. ICF Jones & Stokes. February.

Saleh, T. 2007. Effects of Artificial Lighting on Wildlife. Road-RIPorter, Volume 12, No. 2, July 19.

Sutter County Public Works. 2009. Community Services-Environmental Health Department, Yuba City, CA. http://www.co.sutter.ca.us/doc/government/depts/depts_home. Accessed June 22, 2009.

Sutter County Government. 2008. General Plan Update: Technical Background Report. Prepared by PBS&J. February.

TPW (Texas Parks and Wildlife). 2010. Western Red Bat, June 2, 2009. http://www.tpwd.state.tx.us/publications/huntwild/wild/wildlife_habitat. Accessed June 8, 2010.

USACE (U.S. Army Corps of Engineers). 2005. Ordinary High Water Mark Identification (Regulatory Guidance Letter No. 05-05). December 7.

USFWS (U.S. Fish and Wildlife Service). 2009. List of Endangered and Threatened Species That May Occur in Butte, Sutter, and Yuba Counties and the County and the Palermo, Honcut, Yuba City, Olivehurst, and Nicolaus USGS 7.5-minute Quadrangles. Last revised June 19. www.fws.gov/sacramento/es/spp_list.htm. Accessed June 19, 2009.

Yuba County Community Development and Services Agency (Yuba County). 1996. Yuba County General Plan & Environmental Impact Report. Yuba County, CA. http://www.co.yuba.ca.us/Departments/Community%20Development/Planning/Default%20Pages/yubacountygeneralplan.aspx. Accessed June 22, 2009.

Yuba County Resource Conservation District. 2009. Voluntary Individual Oak and Oak Woodland management Plan and Landowner Guidelines. Yuba County, CA. http://www.co.yuba.ca.us/ycrcd/programs.htm. Accessed July 6, 2009.

This page intentionally left blank

3.5 Cultural Resources

Table 3.5-1 Cultural Resources Checklist

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 an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

3.5.1 Setting

Historical Context

The Konkow Maidu Native Americans occupied the foothills east of Chico and Oroville, as well as a portion of the Sacramento Valley (Riddell 1978). Around the turn of the twentieth century several small rancherias were created, establishing a legal land base for the Konkow. The Konkow remain active in cultural preservation in and around the Palermo/Feather River area (Riddell 1978).

The Valley Nisenan, or Southern Maidu Native Americans, occupied lands located in the project area. The western boundary of Nisenan territory was the western bank of the Sacramento River. The eastern boundary was the crest of the Sierra Nevada (Wilson and Towne 1978:387).

During the first half of the nineteenth century, an influx of activity from natural resource exploitation and the establishment of early settlements in Sacramento and Yuba and Sutter Counties expanded the Central Valley's population. In the mid nineteenth century, a boom in mining activities brought in great numbers of American and Chinese migrants and, later, the construction of increasingly large-scale water conveyance and storage systems for hydraulic mining operations. Railroads arrived in the region by 1858. Spurred in part by railroad shipping, agriculture became an increasingly important in the region (Rawls and Bean 2003).

Mining and milling operations in the Sierra Nevada developed small hydroelectric generators for production of light and for powering equipment in the late nineteenth century. In Plumas and Butte counties, the Great Western Power Company (GWPC) constructed one of the largest of the early hydroelectric systems that spread across the Sierra Nevada Mountains

Pacific Gas and Electric Company (PG&E) was incorporated in 1905. The Palermo–East Nicolaus Transmission Line and supporting alignment of steel lattice towers originally served as a segment of GWPC's Las Plumas Transmission Line, constructed in 1908. The tower alignment of PG&E's single-circuit 115-kV Palermo–Rio Oso No. 2 Transmission Line originally served as a segment of GWPC's 186-mile Caribou Transmission Line, constructed in the late summer and fall of 1919. GWPC built the Caribou Line as part of its Caribou Hydroelectricity Project.

Between April 1941 and May 1942 the current East Nicolaus Substation was constructed at the southeast corner of Nicolaus Avenue and State Route 70 (El Centro Boulevard). In 1959 PG&E began acquiring property and rights-of-way for the Palermo Substation and transmission lines northwest of Palermo, Butte County. The Palermo Substation and substation building were constructed ca. 1960.

Paleontological Setting

Section 3.6, *Geology and Soils*, discusses the geological setting of the region, which includes paleontological resources and the rock formations/lithologic units underlying portions of the project that would contain paleontological resources.

Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

Portions of the project would cross or result in fill being placed in wetland features, requiring the applicant to apply to the U.S. Army Corps of Engineers (USACE) for a permit under Section 404 of the Clean Water Act. The requirement of a permit from a federal agency qualifies the applicant's project as a federal undertaking, obligating the USACE to comply with Section 106 of the National Historic Preservation Act (Section 106).

State of California

California Environmental Quality Act (CEQA)

CEQA requires that alternative plans or mitigation measures be considered if a project would result in significant impacts on important cultural resources. However, only impacts on significant cultural resources need to be addressed.

Methods and Findings

Native American Consultation

ICF Jones & Stokes sent letters to 22 local Native American representatives identified by the Native American Heritage Commission (NAHC) as potentially having information or concerns regarding the project. The NAHC indicated that the Sacred Lands File contained no record of cultural resources in the project area.

Two of the replies came from Ren Reynolds, Environmental Protection Agency Planner and Site Monitor for the Enterprise Rancheria Estom Yumeka Maidu Tribe. Mr. Reynolds requested that work be ceased if any cultural materials were uncovered during ground-disturbing activities and that examination of the site and materials be conducted by a qualified archaeologist and a tribal site monitor. He also requested that if human remains are unearthed, the human remains provisions of the California Health and Safety Code shall be enforced and adhered to.

Correspondence with Historical Societies and Local Governments

Through online searches, ICF Jones & Stokes identified several historical societies and local government planning divisions with which to initiate consultation. ICF Jones & Stokes mailed letters describing the proposed undertaking and requested information about local-area cultural resources to each of the organizations. To date, no response has been received by the historical societies or local governments.

Records Search and Literature Review

A records search conducted on behalf of the applicant at the Northeast Information Center of the California Historical Resources Information System (CHRIS) and at the North Central Information Center of CHRIS indicated that a total of 39 previous cultural resource studies have been conducted in the project area. The records search indicated that five previously recorded cultural resources are located in the project area.

Pedestrian Survey

ICF Jones & Stokes archaeologists and historians preformed a pedestrian survey of the project area and identified eight cultural resources: the Palermo–East Nicolaus Transmission Line, Palermo–Rio Oso No. 2 Transmission Line, Palermo irrigation ditches, a segment of the abandoned Southern Pacific Railroad, a segment of the Western Pacific Railroad, Browns Valley Grade Levee, Rio Oso Brick Company Kiln, and remnants of a historic ranch.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on cultural resources. See Chapter 1.0 for a complete list of APMs that the applicant has incorporated into the project to avoid or minimize impacts on all resources.

APM CR-1: Stop work if previously unknown cultural resources are discovered

APM CR-2: Stop work if previously unknown paleontological resources are discovered

APM CR-3: Stop work if human remains are discovered

3.5.2 Environmental Impacts and Mitigation Measures

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

NO IMPACT. Construction vehicles would need to cross a segment of the Western Pacific Railroad (site number P-58-1372) that has been identified as eligible for listing in the National Register of Historic Places. This would occur at paved crossings that are in current use, such as at Kempton Road. The crossing would require no modification to the Western Pacific Railroad. The other cultural resources identified as potentially eligible for listing in the National Register of Historic Places (e.g., the Palermo–East Nicolaus and Palermo–Rio Oso No. 2 transmission lines) are not considered to be of historical significance under Section 106 of the National Historic Preservation Act or CEQA. Therefore, the project would result in no impact under this criterion.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT. Ground-disturbing activities associated with construction of the project, such as access road grading, preparation of staging areas, and the excavation of footings for tower removal and installation, have the potential to damage or destroy archaeological resources that were not evident during the cultural resources survey. Such damage or destruction of archaeological resources would constitute an adverse effect under Section 106 and a significant impact under CEQA. Implementation of APM CR-1 would reduce this impact to a less than significant level as work would be stopped if cultural resources are discovered during site preparation and construction activities while a qualified archeologist assesses the find.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

LESS THAN SIGNIFICANT WITH MITIGATION. The proposed transmission towers and pole replacement locations over most of the project area are in underlying geological formations (Laguna, Riverbank, and Modesto) of high sensitivity for paleontological resources. Thus, ground disturbing activities such as construction of access roads, auguring for tower supports and pole replacement, and construction of staging areas have the potential to impact unknown paleontological resources.

Implementation of APM CR-2 would reduce potential impacts because construction personnel would receive paleontological resources awareness training. Additionally, APM CR-2 would reduce potential impacts as all work would stop if paleontological resources were discovered during construction.

The Palermo–East Nicolaus 115-kV Transmission Line Project area has both high and low sensitivity for paleontological resources that may be present on the surface or would be exposed during ground disturbing construction activities. Thus, ground disturbing activities throughout almost the entire project area have the potential to impact paleontological resources.

The following mitigation measure applies to project areas with high sensitivity for paleontological resources (Scott and Springer 2003; Wagner 1990, 1995). Areas with high paleontological sensitivity are the Quaternary Modesto, Quaternary Riverbank, and Tertiary Laguna Formations. With implementation of the following mitigation measure, impacts would be reduced to less than significant levels.

> **MM CR-1: Paleontological Resources Treatment Plan.** Prior to construction, a Paleontological Resources Treatment Plan will be prepared that addresses the treatment of paleontological resources that may be discovered during construction. This plan, prepared by a qualified paleontologist, will include procedures for paleontological onsite monitoring, significance testing, and data recovery. Paleontological monitor(s) must be present during all ground disturbing activities where the underlying geology has high sensitivity for fossil resources unless the vertical disturbance will not impact the underlying geology or is located in a highly disturbed area as identified by a qualified paleontologist.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

LESS THAN SIGNIFICANT. Ground-disturbing activities associated with construction of the project, such as access road grading, preparation of staging areas, and the excavation of footings for tower removal and installation, have the potential to damage or destroy human remains that were not evident during the cultural resources survey. Such damage or destruction of human remains would constitute an adverse effect under Section 106 and a significant impact under CEQA. Implementation of APM CR-3, which stops work if human remains are discovered, would reduce this impact to a less than significant level.

References

Berg, J. 1994. DPR 523 Forms for P-51-81/CA-SUT-81-H (HWY 70-2, Brick Kiln Site). November 14. Prepared by Far Western Anthropological Research Group, Davis, CA. On file at Northeast Center, California Historical Resources Information System, Chico, CA.

Berg, J. E., J. G. Costello, and S. R. Wee. 1995. Archaeological Survey Report and Historic Study Report for the State Route 70 Project, Sutter and Yuba Counties, California. June. Prepared by Far

Western Anthropological Research Group, Davis, CA; Foothill Resources, Mokelumne Hill, CA; JRP Historical Consulting Services, Davis, CA. Prepared for Woodward-Clyde Consultants, Oakland, CA. On file at North Central Information Center, California Historical Resources Information System, Sacramento, CA.

California Office of Historic Preservation. 2006a. Archeological Determinations of Eligibility, Yuba County. March 17. Sacramento, CA: Office of Historic Preservation. On file at North Central Information Center, California Historical Resources Information System, Sacramento, CA.

__________. 2006b. Directory of Properties in the Historic Property Data File for Yuba County. March 17. Sacramento, CA: Office of Historic Preservation. On file at North Central Information Center, California Historical Resources Information System, Sacramento, CA.

ICF Jones & Stokes. 2008. Cultural Resources Inventory and Evaluation Report for the Proposed Palermo-East Nicolaus 115-kV Transmission Line Reconductoring Project, Butte, Sutter, and Yuba Counties, California. November. Prepared by ICF Jones & Stokes, Sacramento, CA. Prepared for: Pacific Gas & Electric Company, Sacramento, CA.

Jones & Stokes. 2001. Historic Resources Evaluation Report for the Western Pacific Railroad Segment along SR 70, EA# 2A270K, Yuba County, California. January. Prepared by Jones & Stokes, Sacramento, CA. Prepared for District 3, California Department of Transportation, Marysville. On file at North Central Information Center, California Historical Resources Information System, Sacramento, CA.

Rawls, J. J., and W. Bean. 2003. California: An Interpretive History. 8th ed. Boston, MA: McGraw Hill.

Riddell, F. A. 1978. Maidu and Konkow. Pages 370–386 in R. F. Heizer (ed.), California. Handbook of North American Indians, Vol. 8, W. C. Sturtevant (ed.). Washington D.C.: Smithsonian Institution.

Scott, E. and Springer, K. 2003. CEQA and Fossil Preservation in California: The Environmental Monitor. Association of Environmental Professionals. Fall 2003.

Wagner, H. M. 1990. Paleontologic resources. Pages 11-37 in Moratto, M. J. Cultural and paleontologic resources in the Santa Susanna and Santa Monica Mountains: Los Angeles County, California. Submitted to Brown and Caldwell, Walnut Creek, CA.

__________. 1995. Paleontologic resource assessment of the Tuscarora Natural Gas Pipeline Route from Malin, Oregon to Tracy, Nevada. Submitted to Tuscarora Gas Transmission Company, Reno, NV. 1-38.

Wilson, N. L., and A. H. Towne. 1978. Nisenan. Pages 387–397 in R. F. Heizer (ed.), California. Handbook of North American Indians, Vol. 8, W. C. Sturtevant (ed.). Washington, D.C.: Smithsonian Institution.

This page intentionally left blank

3.6 Geology and Soils

Table 3.6-1 Geology and Soils Checklist

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?	☐	☐	☐	☒

3.6.1 Setting

Structurally, the Central Valley Physiographic Province is a large, elongated, northwest-trending asymmetric structural trough that has been filled with an extremely thick sequence of sediments ranging in age from Jurassic to Holocene. This asymmetric geosyncline has a long, stable eastern shelf supported by the subsurface continuation of the granitic Sierran slope and a short western flank expressed by the upturned edges of the basin sediments (Hackel 1966). The project route has been mapped by a number of geologists at a regional scale (Helley and Harwood 1985; Jennings 1977; Saucedo and Wagner 1992; and Wagner et al. 1987. In addition, compilation maps prepared by Jennings (1977); Saucedo and Wagner (1992); and Wagner et al. (1987) reflect mapping work by previous authors. The project route would cross a number of Quaternary-age geologic units as indicated in Figure 3.6-1 and described in Table 3.6-2.

Table 3.6-2 Geologic Map Units Exposed Along the Project Route

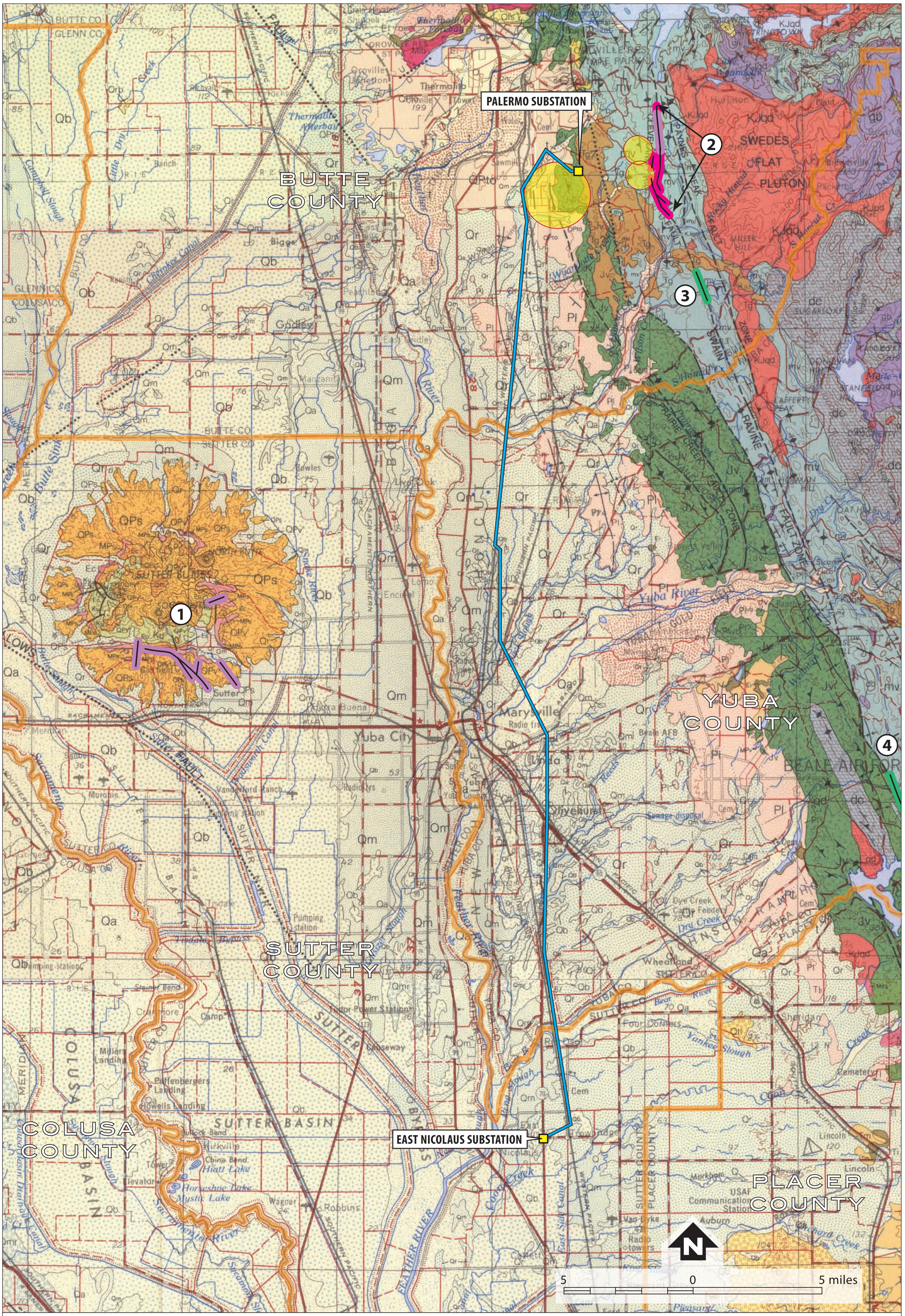
Geologic Unit Map Symbol	Geologic Unit Name	Description
Qsc	Stream Channel Deposits	Deposits of open, active stream and river channels without permanent vegetation. These deposits are being transported under modern hydrologic conditions.
t	Tailings	Tailings deposits are derived from dredge gold and gravel mining operations and consist of well sorted, unconsolidated silt, sand, gravel, and cobble, with lesser amounts of clay.
Qa	Alluvium	Alluvium is mapped adjacent to active river or tributary channels and consists of Holocene age, high-energy fluvial deposits (i.e., sand and gravels) and overbank and fan deposits (i.e., sand, silt, and clay). These deposits are unconsolidated.
Qb	Basin Deposits	Helley and Harwood (1985) differentiate basin deposits from alluvium (Qa) on the basis of composition including only those deposits that are finer grained and frequently organic rich and suggest these deposits were distal deposits where energy conditions were much lower.
Qmu / Qml	Modesto Formation	A significant portion of the project route is mapped as being underlain by the Modesto Formation. The Modesto Formation is Upper Pleistocene in age and consists of unconsolidated to moderately cemented gravel, sand, silt, and clay. Dense clay has been encountered (typically in the upper five feet) in this formation (Kleinfelder 2008). The Modesto Formation commonly forms distinct alluvial terraces and fans and is divided into upper (Qmu) and lower (Qml) members.
Qru / Qrl	Riverbank Formation	Similar to the Modesto Formation, the Riverbank Formation is mapped under a significant portion of the project route. The Riverbank Formation generally consists of compact to semi-consolidated, dark brown to red gravel, sand, and silt with some clay. The Riverbank Formation has been dated between 130,000 and 450,000 years before present (BP).
Tla	Laguna Formation	The Laguna Formation is mapped at the northern end of the project route. This Pliocene-age formation is the oldest of the geologic units mapped at the surface along the project route. The Laguna Formation consists of moderately to strongly cemented, interbedded alluvial gravel, sand, and silt. These soils were deposited by the ancestral Feather, Yuba, Bear, and American Rivers (Shlemon 1972).
NA	Buried Stream Channel Deposits	In addition to the geologic units mapped by Helley and Harwood (1985), historical surveys, geologic, and soils maps of the project route show numerous stream channels crossing the project route that have since been buried and/or modified (Kleinfelder 2008).

Source: Kleinfelder 2008

Faulting and Seismicity

The project would be located in a seismically active area given the proximity and number of potential seismic sources. A regional fault and epicenter map showing the approximate location of the project relative to seismic sources and past earthquakes is provided also in Figure 3.6-1.

Base map source: *1:250,000 Geological Maps of the Chico (1992) and Sacramento (1987) Quadrangles*, California Dept. of Conservation - Division of Mines and Geology
Highlighted fault info from: *Map No. 7A (Geology) - Chico Quadrangle, Regional Geologic Map Series (1992)*
Earthquake epicenter data from: *Epicenters of and Areas Damaged by M ≥ 5 California Earthquakes. 1800 – 1999, Map Sheet 49*, California Dept. of Conservation, 2000



Project location (transmission line and substation locations)

Earthquake epicenters and magnitudes ≥ 5.0

6.1m
Aug. 1, 1975

5.0-5.4m
(approx. mag)
betw. 1932 - 1999

Displacement during historic time

Faults showing evidence of displacement during late Quaternary time

Quaternary (undifferentiated) faults. Classification based on apparent offset of Plio-Pleistocene volcanic rocks

1 Unnamed faults at Sutter Buttes, Quaternary (undifferentiated)

2 Cleveland Hill fault, Historic (1975 – 1976)

3 Swain Ravine fault zone, Late Quaternary (active in last 100,000 years)

4 Spenceville fault zone, Late Quaternary (possibly Holocene; active between 9,000 – 130,000 y.b.p.)

Palermo–East Nicolaus 115 kV Transmission Line

Figure 3.6-1

Geologic Map of the Regional Area

(see following page for legend)

002803.CP10.03.a (2009 CORP CD Archives - Vol 4) 06/24/2010

This page intentionally left blank

Palermo–East Nicolaus 115 kV Transmission Line

Figure 3.6-1

Map Legend for the Geologic Map of the Regional Area

002803.CP10.03.a2 (2009 CORP CD Archives - Vol 4) 06/24/2010

Reference: *1:250,000 Geological Maps of the Chico (1992) and Sacramento (1987) Quadrangles*, California Dept. of Conservation - Division of Mines and Geology

CENOZOIC

QUATERNARY

Holocene

- af — Artificial fill
- t — Dredge or mine tailings
- Q — Alluvium
- Qa — Natural levee and channel deposits
- Qb — Basin deposits (alluvium)
- Qls — Landslide deposits
- Ql — Lake deposits
- Qf — Fan deposits

Pleistocene

- Qt — Terrace deposits
- Qg — Glacial deposits
- Qm — Modesto Formation (alluvium)
- Qr — Riverbank Formation (alluvium)
- Qos — Pleistocene nonmarine sedimentary rocks *(fluvial and lacustrine gravel, sand, silt, and clay)*
- Qrb — Red Bluff Formation *(coarse red gravel, sand, and silt)*
- QPs, QPl — Volcanic sediments of Sutter Buttes *(volcaniclastic sediments and lahars) QPl - Volcanic lake beds)*
- Qv — Pleistocene volcanic rocks *(b – basalt; bp – scoria and basalt)*
- QPv, QPv — Volcanic rocks of Sutter Buttes *(QPv^a – andesite; bp – QPv^r – rhyolite)*

TERTIARY

Pliocene

- QPto, Pnt — Tuffs of Oroville *(volcaniclastic sediments, and tuff)* *Pnt-Nomlaki Tuff*
- Ptu, Pnt — Tuscan Formation *(Lahars, volcaniclastic sediments, and tuff)* *Pnt-Nomlaki Tuff*
- Pl — Laguna Formation *(alluvial gravel, sand, and silt)*
- Ps — Pliocene nonmarine sedimentary rocks *(fluvial and lacustrine shale, sandstone, and ash)*
- Pi — Pliocene intrusive rocks *(a – andesite; b – basalt)*
- Pv — Pliocene volcanic rocks *(a – andesite; b – basalt)*
- ✸ — Cinder cone or volcano; major Pelean domes at Sutter Buttes

Miocene

- MPc — Miocene-Pliocene channel deposits *(fluvial conglomerates and sandstone)*
- MPs — Sutter Formation *(volcaniclastic sediments; nonmarine)*
- MPi — Miocene–Pliocene intrusive rocks *(a – andesite; b – basalt)*
- MPv — Miocene–Pliocene volcanic rocks *(b – basalt; a – andesite; af – andesite flows; ap – andesite pyroclastic rocks; t – dacitic tuff-breccia)*
- Mlb — Lovejoy Basalt

Oligocene

- ΦMv — Oligocene-Miocene volcanic rocks *(r – rhyolite tuff and sedimentary rocks)*

Eocene

- Ec — Capay Formation *(sandstone and shale; marine)*
- Ei — Ione Formation *(quartzose sandstone, claystone, and conglomerate; mostly nonmarine)*
- Tg — "Auriferous" Gravels

MESOZOIC

CRETACEOUS

- Ku — Upper Cretaceous rocks *(shale and sandstone; marine)*
- Kc — Chico Formation *(sandstone, conglomerate, and siltstone; marine)*

CRETACEOUS / JURASSIC

MESOZOIC PLUTONIC ROCKS

KJgr	KJqd	KJdi	KJgb	
Granite, granodiorite	Quartz diorite, tonalite, trondhjemite, quartz monzonite	Diorite	Gabbro	
Jgr	Jqd	Jdi	Jgb	Jum
Granite, granodiorite	Quartz diorite, trondhjemite	Diorite	Gabbro	Ultramafic rocks

This page intentionally left blank

Active faults closest to the project route are the Dunnigan Hills Fault about 19 miles to the west and the Cleveland Hill Fault[1] (western splay of the Foothills Fault System) as close as 2.5 miles east of the project route (Hart and Bryant 1997; International Conference of Building Officials 1997); Jennings 1994). These faults are in Alquist-Priolo Earthquake Fault Zones (Hart and Bryant 1997). According to the California Geological Survey (CGS), the only historic earthquake to have generated surface fault rupture in the Sacramento Valley region occurred on the Cleveland Hill fault (CGS 2007). In 1975, ground rupture was observed and mapped at the ground surface following a magnitude (M) 5.7 Oroville earthquake, primarily along the northern extent of this fault. This rupture was studied by the CGS and placed within an Alquist-Priolo Earthquake Fault Zone; it is still considered capable of ground-surface rupture.

The closest potentially active fault to the project route is the Willows Fault Zone, located less than two miles from the southern end of the project route. This fault zone is mapped as a pre-Quaternary fault zone. However, according to Kleinfelder (2008), the Willows Fault Zone is defined as potentially capable of generating infrequent and moderate-magnitude earthquakes along its northern extent, north of the Sutter Buttes, and is mapped on the basis of offset, deep bedrock strata (i.e., 1,500 feet), and associated groundwater elevation anomalies in that region. The Willows Fault was originally mapped by Harwood and Helley (1987) and subsequently by others as a steeply dipping reverse fault, and is considered to be active. Kleinfelder (2001) indicated that a M6.6–6.7 was appropriate for the Willows Fault, although there is some speculation as to whether or not the fault is currently active.

Seismic hazards associated with seismically active areas include earthquake fault ground rupture and ground shaking (primary hazards), liquefaction, and earthquake-induced slope failure (secondary hazards). The project route would be located within an area influenced by several major faults to the east and west.

Fault Rupture. No known active fault or potentially active fault crosses the project route, and there is no evidence of recent (Holocene) faulting within the project route vicinity (Kleinfelder 2008). Furthermore, review of aerial photographs does not indicate the presence of lineations or other features that would suggest the presence of recent faulting on or trending towards the project route (Kleinfelder 2008).

Ground Motion. The project route would be subject to seismic hazards because of its proximity to active faults, fault systems, and fault complexes. Some of the officially recognized active faults (e.g., recognized by the State of California or Uniform Building Code [UBC]) are located within a 20-mile radius of the project area. The project route would be located in a region of California characterized by a low ground-shaking hazard. Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10 percent probability in 50 years (Cao et al. 2003, California Geological Survey 2006), the probabilistic peak horizontal ground acceleration values in the project area range from 0.1 to 0.2g, where one “g” equals the force of gravity, indicating that the ground-shaking hazard in the project area is low to moderate. Farther to the east and west, the ground-shaking hazard increases more, coinciding with the increase in abundance of associated faults and fault complexes (Cao et al. 2003, CGS 2006).

[1] This fault was responsible for the 1975 M5.7 Oroville earthquake, an event that produced surface displacement along about 2.2 miles of the fault. Ground motions corresponding to Modified Mercalli Intensity VIII were experienced at Gridley and Oroville. Significant structural damage occurred to unreinforced masonry buildings in Oroville. Geologic studies indicate that the total length of the Cleveland Hills fault is probably 11 to 15 miles. The maximum credible earthquake on this fault is probably about M6.5–6.7. An event of this magnitude would cause substantially more damage than the 1975 event (Butte County 2005).

Soils

The soils along the project route have been mapped by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) and are described in the Soil Survey of the Butte Area; Parts of Butte and Plumas Counties (Burkett and Conlin 2006); the Soil Survey of Sutter County (Lytle 1988); and the Soil Survey of Yuba County (Lytle 1998). Table 3.6-3 describes the general soil map units occurring from north to south along the project route (Burkett and Conlin 2006; Lytle 1998; Lytle 1988).

Table 3.6-3 Soil Map Units along the Project Route

General Soil Map Unit	Soil Unit Description
Dunstone-Loafercreek-Argonaut Taxadjunct	Shallow and moderately deep, nearly level to moderately steep, well-drained soils that formed in residuum and colluvium; on foothills.
Thompsonflat-Oroville-Vistarobles	Very deep, moderately deep, and shallow, nearly level to moderately steep, moderately well-drained and poorly drained soils that formed in alluvium; on intermediate and high fan terraces. Limited by slow permeability and a hazard of ponding in some areas.
Eastbiggs-Duric Xerarents-Kimball	Moderately deep, shallow, and very deep, nearly level, somewhat poorly drained and well-drained soils that formed in alluvium; on low terraces. Limited by slow permeability and a hazard of ponding in some areas.
Conejo-Kilaga	Very deep or deep, well-drained alluvial soils; on stream terraces. Few limitations except for slow permeability and a hazard of flooding in some areas.
San Joaquin	Moderately well-drained alluvial soils that are moderately deep to a hardpan and have a dense clay subsoil; on low fan terraces. Limited by very slow permeability.
Columbia-Holillipah-Shanghai	Very deep, somewhat poorly drained or somewhat excessively drained, alluvial soils; on floodplains. Limited by a hazard of flooding in some areas.
Shanghai-Nueva-Columbia	Very deep, level to nearly level, somewhat poorly drained silt loam, loam, and fine sandy loam; on floodplains. Limited by a hazard of flooding and a high water table in some areas.
Conejo-Tisdale	Moderately deep to very deep, level to nearly level, well drained loam and clay loam; on terraces. Limited by a restricted soil depth.
San Joaquin-Cometa	Moderately deep and very deep, level to nearly level, well drained sandy loam and loam; on terraces. Limited by very low to moderate water capacity and very slow permeability.
Clear Lake-Capay	Deep and very deep, level to nearly level, poorly drained and moderately well drained clay and silty clay; in basins and on basin rims. Limited by slow permeability.

Sources: Burkett and Conlin 2006; Lytle 1998; Lytle 1988

Geologic Hazards

Liquefaction. Liquefaction occurs primarily in saturated, loose, fine-to-medium grained soils in areas where the groundwater table is within approximately 50 feet of the ground surface. Shaking causes the soils to lose strength and behave as a liquid. Geologic mapping by Helley and Harwood (1985) shows significant portions of the project route to be underlain by basin and Holocene-age alluvial deposits. These units generally consist of unconsolidated gravel, sand, silt, and clay. Depending on groundwater levels[2] and the intensity of a seismic event, these units have the potential to liquefy during a seismic event.

In Butte County, areas paralleling the Sacramento River that contain clean sand layers with low relative densities are estimated to have generally high liquefaction potential. Granular layers underlying most of the remaining Sacramento Valley area of Butte County have higher relative densities and thus have

[2] Groundwater is anticipated within the proposed depths of exploration for the portion of the route located within the valley sediments a few miles south of Palermo. Groundwater levels are expected to range from near the ground surface to depths of more than 20 feet below ground surface for this portion of the project route. Groundwater is not anticipated within the depths of exploration for the higher elevation sites near Palermo (Kleinfelder 2008).

moderate liquefaction potential. Clean layers of granular materials older than Holocene are of higher relative densities and are thus of low liquefaction potential. The project route would generally traverse areas of moderate liquefaction potential (Butte County 2005, Figure 16-4).

In Yuba and Sutter counties, areas with a high liquefaction potential are similar to those areas described for Butte County (Sutter County 1996; Yuba County 2008). Areas paralleling the Sacramento, Feather, and Bear Rivers that contain clean sand layers with low relative densities coinciding with a relatively high water table are estimated to have generally high liquefaction potential. Granular layers underlying certain areas in the Sacramento Valley have higher relative densities and thus have moderate liquefaction potential.

Landslides. Landslides, rock falls, and debris flows occur continuously on all slopes; some processes act very slowly, while others occur very suddenly, with potentially disastrous results. Based on an analysis of aerial photographs, no landslides were observed along the project route (Kleinfelder 2008), and no geomorphic features indicative of landsliding were observed (e.g., scarps, hummocky topography, etc.). However, the project route does cross several major rivers and/or drainages with embankments. The stability of major river levee embankments is the purview of the United States Army Corps of Engineers. The stability of other embankments and/or creek banks that could affect the proposed pole foundations would need to be assessed during preparation of the project geotechnical report(s).

Soil Erosion. Areas of differing erosion hazard potential for Butte County are delineated (Butte County 2005, Figure 16-5). The areas with the greatest erosion hazard potential generally occur in the foothills of Butte County, whereas the project route would generally traverse areas of moderate and slight erosion hazard potential. Moderate erosion hazard potential is defined as occurring on areas with slopes of 9 to 30 percent with soils of no profile development to weak profile development and slopes of 9 to 15 percent with moderate profile development. Slight erosion hazard potential is defined as occurring on areas with slopes of two to nine percent with permeability at least moderate with weak soil profile development (Butte County 2005).

Areas of differing erosion hazard potential for Yuba County are delineated (Yuba County 2008, Exhibit GS-2). The areas with the greatest erosion hazard potential generally occur in the foothills and mountain areas in the central and eastern part of the county, whereas the project route would traverse areas of slight erosion hazard potential. Slight erosion hazard potential is defined as erosion unlikely to occur under ordinary climatic conditions (Yuba County 2008).

For Sutter County, areas with a moderate or high erosion hazard potential are not common, with the exception of moderate to high erosion hazard potential in the Sutter Buttes. The majority of Sutter County exhibits areas of low erosion activity including the areas along the project route.

Collapsible Soils. Differential settlement (also called ground settlement and, in extreme cases, ground collapse) results as soil compacts and consolidates after ground shaking ceases. Differential settlement occurs when the layers that liquefy are not of uniform thickness, a common problem when the liquefaction occurs in artificial fills (ABAG 2001). Settlement can range from one percent to five percent, depending on the cohesiveness of the sediments (Tokimatsu and Seed 1984).

Expansive Soils. Shrink-swell or expansive soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. Soil expansiveness (or shrink-swell potential) is expected to range from none to high along the project route. The distribution of expansive soils within Butte County is delineated (Butte County 2005, Figure 16-8). Soils with no or low expansion potential occur along stream and river valleys and on steep mountain slopes. Soils of high expansion potential occur in the level areas of the Sacramento Valley, including around the population centers of Chico, Oroville, Biggs, and Gridley. In general, the project route occurs in areas with highly expansive soils (Butte County 2005).

For Yuba County, the distribution of expansive soils is delineated (Yuba County 2008, Exhibit GS-3). Soils having high shrink-swell potential are more common on the western end of the county, where the project route would occur. Some soils with moderate shrink-swell potential are also located in valleys in the easternmost part of the county. In general, the project route would traverse areas with a low to high shrink-swell potential (Yuba County 2008).

The distribution of expansive soils within Sutter County is most likely to occur in basins and on basin rims (Sutter County 1996, Figure 10.3-1). Soils with no or low expansion potential occur along the rivers and river valleys and on steep mountain slopes. The only area along the project route in Sutter County that has a high shrink-swell potential is the Clear Lake-Capay general soil map unit, which is where the southernmost portion of the project route would occur (Sutter County 1996).

Subsidence. Subsidence is the sinking of a large area of ground surface in which the material is displaced vertically downward, with little or no horizontal movement. Subsidence occurs in three ways: as a result of groundwater overdraft or oil and gas withdrawal; compaction and oxidation of peat soils; and hydrocompaction. Land subsidence caused by groundwater overdraft results when groundwater extraction produces compression of a clay bed within an aquifer so much that it no longer expands to its original thickness after groundwater recharge. The pores within the clay bed collapse, and the surrounding clay particles settle in their place. When the clay particles settle, the clay bed is effectively thinned, resulting in permanent land subsidence at the ground surface. Subsidence can also occur from the withdrawal of oil and gas. Land subsidence as a result of compaction and oxidation of peat soils and/or hydrocompaction are not significant concerns in the northern Sacramento Valley.

The damaging effects of subsidence include gradient changes in roads, streams, canals, drains, sewers, and dikes. Many such systems are constructed with slight gradients and may be significantly damaged by even small elevation changes. Other damaging effects include damage to water wells resulting from sediment compaction and increased likelihood of flooding of low lying areas (Butte County 2005). Subsidence is a potential hazard for the portions of Butte County located within the Sacramento Valley. The greatest potential subsidence areas are those where heavy groundwater withdrawal is occurring in gas-producing areas. According to investigations by the U.S. Geological Survey, the areas of heaviest groundwater withdrawal extend about two miles north and south of Chico and in a one-mile radius around Gridley—areas where the project route would traverse. The amount of subsidence that could take place depends primarily on the amount of groundwater withdrawal (Butte County 2005).

No information pertaining to land subsidence in Yuba County is readily available. However, it appears that land subsidence is a potential hazard for the portions of Yuba County located within the Sacramento Valley (Butte County 2005, Figure 16-6).

Sutter County is not subject to high subsidence. Future potential for subsidence in Sutter County could result from prolonged periods of drought and a significant increase in natural gas withdrawal (Sutter County 1996).

Regulatory Setting

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. While this Act does not specifically regulate substations, it does help define areas where fault rupture is most likely to occur by grouping faults into categories of active, potentially active, and inactive.

The Seismic Hazards Mapping Act of 1990 directs the CGS to delineate Seismic Hazard Zones and requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones. It addresses the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes. The Act also addresses tsunamis and seiches.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on geology and soils. See Chapter 1.0 for a complete list of APMs that the applicant has incorporated into the project to avoid or minimize impacts on all resources.

APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site-specific and design-specific hazards.

APM HYDRO-1: Prepare and implement a storm water pollution prevention plan.

3.6.2 Environmental Impacts and Mitigation Measures

a. ***Would the project 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.***

LESS THAN SIGNIFICANT. The project does not lie within an Alquist-Priolo Earthquake Fault Zone. The purpose of the Alquist-Priolo Act is to regulate development near active faults to mitigate the hazard of surface rupture. Faults in an Alquist-Priolo Earthquake Fault Zone are typically active faults. The closest mapped fault, the Willows Fault Zone, is not considered an active fault and is not delineated on the most recent Alquist-Priolo Fault Zoning Map (CGS 2007); however, the fault is considered potentially active. Kleinfelder (2001) indicates that a M6.6–6.7 was appropriate for the Willows Fault, although there is some speculation as to whether or not the fault is currently active. Both the Cleveland Hill Fault and the Dunnigan Hills Fault are considered active and capable of producing M6.5–6.7 and M6.6 earthquakes, respectively. Due to the close proximity of the project route to the Cleveland Hill Fault and the Willows Fault Zone, potential impacts from surface fault rupture may be significant. Transmission poles are susceptible to damage or failures if they directly overlie a fault trace that experiences surface rupture. Within the project route, the potential for fault surface rupture is generally concentrated in the vicinity of mapped active and early Quaternary fault traces and within established earthquake fault zones. As demonstrated in other areas of California, surface fault rupture and significant ground distortion may occur within a zone extending several hundred feet on either side of the main fault trace. Therefore, project components that intersect, occupy, or are adjacent to active and early Quaternary fault traces and earthquake fault zones are subject to potentially significant impacts from fault surface rupture. However, the project does not appear to cross any known fault, and no change to the existing conditions would occur during construction. With implementation of APM GEO-1, impacts caused by the rupture of a known earthquake fault would be less than significant.

ii) Strong seismic ground shaking?

LESS THAN SIGNIFICANT. The project is located in a seismically active area given the proximity and number of potential seismic sources. The closest potentially active fault to the project route is the Willows Fault Zone (less than 2 miles from the southern end of the project route) but is not delineated on the most recent Alquist-Priolo Fault Zoning Map (CGS 2007). Active faults closest to the project route are the Cleveland Hill Fault (2.5 miles east of the project route) and the Dunnigan Hills Fault (about 19 miles to the west). These faults are in Alquist-Priolo Earthquake Fault Zones. Based on the number and proximity of two known active faults (Figure 3.6-1), there is the potential for an earthquake to occur during the life of the project.

A large earthquake on any of the nearby faults could cause strong ground shaking along the project route, with the potential to damage associated project structures. The greatest potential for strong seismic ground shaking along the project route comes from the active Cleveland Hill Fault, which has produced moderately large earthquakes in the past. In addition to the Cleveland Hill Fault, other active or early-Quaternary faults in the vicinity of the project also present the potential for strong ground shaking.

Overhead transmission lines, however, can accommodate strong ground shaking. Wind-loading design requirements for overhead lines are generally more stringent than those developed to address strong seismic ground shaking. With implementation of APM GEO-1, impacts from strong seismic shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

LESS THAN SIGNIFICANT. Severe ground shaking can trigger landslides, cause fissures and cracks to open in the ground, and cause loose, saturated materials to liquefy. Liquefaction susceptibility reflects the relative resistance of soils to loss of strength when subjected to ground shaking, and occurs primarily in saturated, loose, fine-to-medium grained soils in areas where the groundwater table is within approximately 50 feet of the ground surface. Shaking causes the soils to lose strength and behave as a liquid. The potential for liquefaction along the project route is moderate. Seismic-induced ground failure has the potential to distress, displace, and/or destroy project components. However, no change to the existing conditions would occur during construction. Use of site-specific seismic data for project design obtained through geotechnical investigation would reduce potential impacts of liquefaction and other types of seismic ground failure. Therefore, with implementation of APM GEO-1, impacts caused by strong seismic shaking would be less than significant.

iv) Landslides?

LESS THAN SIGNIFICANT. Landslides can occur as shallow slides of unconsolidated material as well as deep-seated slides in bedrock. Events that trigger landslides include seismic ground shaking, over-weighting the slope with either naturally-deposited colluviums or artificial fill, decreasing soil cohesiveness by adding water to the materials on the slope, or undercutting a slope through erosive action or man-made disturbance. Based on an analysis of aerial photographs, no landslides were observed along the project route (Kleinfelder 2008), and no geomorphic features indicative of landsliding were observed (e.g., scarps, hummocky topography, etc.). However, the project route does cross several major rivers and/or drainages with embankments. The stability of major river levee embankments is the purview of the United States Army Corps of Engineers. The stability of other embankments and/or creek banks that could affect the proposed pole foundations would need to be assessed during preparation of the project geotechnical report(s). No change to the existing soil stability conditions, including potential for landslides, due to implementation of the project would occur during construction. With implementation of APM GEO-1, impacts caused by landslides would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

LESS THAN SIGNIFICANT. Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase erosion, runoff, and sedimentation. Construction activities could also result in soil compaction and wind erosion effects that could adversely affect soils and reduce the re-vegetation potential at the construction sites and staging areas. A Storm Water Pollution Prevention Plan (SWPPP) would be developed by a qualified engineer or erosion control specialist and implemented before construction (APM HYRDO-1). The SWPPP would include details of how the sediment and erosion control BMPs would be implemented. Implementation of the SWPPP would comply with state and federal water quality regulations. In addition, relevant recommendations from the required site-specific, design-level geotechnical investigations required under APM GEO-1 would also minimize negative effects associated with erosion, runoff, and sedimentation. As a result, erosion impacts would be less than significant.

c. Would the project 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?

LESS THAN SIGNIFICANT. The project would be located on near-surface materials that include residual silt and clay soils overlying volcanic sediments and/or tuffs in Oroville, and/or interbedded clays, silts, sands, and gravels of the Tertiary Laguna Formation on the northern end of the project route. The remainder of the project route to the south would traverse older Quaternary alluvium including interbedded clays, silts, sands, and gravels of the Modesto and Riverbank Formations, and younger Quaternary silt, sand, and gravel river channel and overbank deposits, and organic rich, lean to dense clay basin deposits. Soft and/or loose soils would be generally expected to occur in various areas along the project route. Along the project route, differential settlement would be expected to be a concern.

Destabilization of natural or constructed slopes could occur as a result of construction activities. Excavation, grading, and fill operations associated with providing access to tower locations and other project components could alter existing slope profiles making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. Temporary construction slopes and existing natural or constructed slopes impacted by construction operations would be evaluated for stability. Construction activities likely to result in slope or excavation instability would be suspended during and immediately following periods of heavy precipitation when slopes are more susceptible to failure. For construction requiring excavations, such as foundations, appropriate support and protection measures would be implemented to maintain the stability of excavations and to protect surrounding structures and utilities.

With implementation of APM GEO-1, design-level geotechnical investigations would be performed where necessary to evaluate subsurface conditions, identify potential hazards, and provide information for development of excavation plans and procedures. Appropriate design features and construction procedures would be implemented to maintain stable slopes and excavations during construction. Therefore, impacts from slope or excavation instability would be less than significant.

d. Would the project 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?

LESS THAN SIGNIFICANT. Soil expansiveness (or shrink-swell potential) is expected to range from none to high along the project route. Many of the natural soil types identified along the project route have high clay contents and thus potentially have moderate to high shrink-swell potential. Site-specific soil expansiveness analyses should be performed where these deposits are mapped and/or encountered during the subsurface investigation(s). Expansive soils may cause differential and cyclical foundation movements that could cause damage and/or distress to overlying structures and equipment. Potential operation impacts from loose sands, soft clays, and other potentially compressible soils include excessive settlement, low foundation-bearing capacity, and limitation of year-round access to project facilities. However, design-level geotechnical studies would be conducted to develop appropriate design features for locations where potential problems are known to exist (APM GEO-1). Appropriate design features may include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground treatment processes, direction of surface water and drainage away from foundation soils, and the use of deep foundations such as piers or piles. No change to the existing soil stability conditions, including expansive soil, due to implementation of the project would occur during construction and operation. With implementation of APM GEO-1, impacts would be less than significant.

e. Would the project 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. The project would not involve the construction of septic tanks, the use of existing septic tanks, or an alternative wastewater disposal system during construction or operation. Therefore, there would be no impact under this criterion.

References

ABAG (Association of Bay Area Governments). 2001. The Real Dirt on Liquefaction: A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area. Oakland, California.

Burkett, D.W. and A.E. Conlin. 2006. Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties: USDA Natural Resources Conservation Service in cooperation with the Regents of the University of California and the United States Department of the Interior, Fish and Wildlife Service.

Butte County. 2005. Butte County General Plan Technical Update, Background Report. Final Draft, August 8.

CGS (California Geological Survey). 1994. Fault Activity Map of California, pp. 27 and 30.

__________. 2002. California Geomorphic Provinces: California Geological Survey Note 36.

__________. 2007. Seismic Shaking Hazards in California. Updated June 12, 2008. http://www.consrv.ca.gov/CGS/rghm/pshamap/pshamain.html. Accessed June 20, 2009.

Cao, T., W. A. Bryant, B. Rowshandel, D. Branum, and C. J. Wills. 2003. The revised 2002 California probabilistic seismic hazard maps.

http://www.consrv.ca.gov/CGS/rghm/psha/fault_parameters/pdf/2002_CA_Hazard_Maps.pdf. Accessed June 20, 2009.

Hackel, O. 1966. Summary of the geology of the Great Valley, pp. 217-238 in E. H. Bailey (editor), Geology of Northern California: California Division of Mines and Geology Bulletin 190.

Hart, E. W., and W. A. Bryant. 1997. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps: (Special Publication 42). Revised 2007. California Division of Mines and Geology.

Harwood, D.S. and Helley, E. J. 1987. Late Cenozoic Tectonism of the Sacramento Valley, California: U. S. Geological Survey Professional Paper 1359, scale 1:250,000.

Helley, E. J., and Harwood, D. S. 1985. Geologic map of the Late Cenozoic deposits of the Sacramento Valley and northern Sierran foothills, California: U. S. Geological Survey Miscellaneous Field Studies Map MF-1790, 1:62,500 scale.

Jennings, C. W. 1977. Geologic map of California: California Division of Mines and Geology, scale 1:750,000.

Jennings, C.W. 1994. Revised Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions. Revised 2005. California Geological Survey, Geologic Data Map No. 6, scale 1:750,000.

Kleinfelder, Inc. 2001. Seismic Hazards Site Investigation and Risk Assessment, Wild Goose Natural Gas Pipeline Colusa and Butte Counties, California. November 7. Project No. 23-484855. Martin, G.R. and Lew, M. 2007. Recommended Procedure for Implementation of DMG Special Publication 117 – Guidelines for Analyzing and Mitigating Liquefaction in California, Southern California Earthquake Center. Interim Revision. March.

Kleinfelder, Inc. 2008. Preliminary Geologic and Geotechnical Information, Proposed Palermo-Nicolaus Transmission Line, Butte, Yuba and Sutter Counties, California: Letter report prepared for Mr. Wei-Chih Huang, Transmission Line Design, Black & Veatch Corporation, 5875 Arnold Road, Suite 200, Dublin, California, 94568. Sacramento. September 10.

Lytle, D. J. 1988. Soil Survey of Sutter County, California: USDA Soil Conservation Service in cooperation with the Regents of the University of California (Agricultural Experiment Station) Washington, DC.

Lytle, D. J. 1998. Soil Survey of Yuba County, California: USDA Natural Resources Conservation Service in cooperation with the Regents of the University of California (Agricultural Experiment Station) and the USDA Forest Service. Washington, DC.

Saucedo, G.J. and Wagner, D.L. 1992. Geologic Map of the Chico Quadrangle, California: in California Department of Conservation Division of Mines and Geology Regional Geologic Map Series Map No. 7A, scale 1:250,000.

Shlemon, R.J. 1972. The lower American River area, California, A model of Pleistocene landscape evolution. Yearbook of Association of Pacific Coast Geographers, Vol. 34: pp. 61-86.

Sutter County. 2008. Sutter County General Plan Background Report, Sutter County, 1996, Sutter County General Plan, Yuba City. http://www.co.sutter.ca.us/pdf/cs/ps/General_Plan-Policy_Document.pdf. Accessed June 10, 1009.

Tokimatsu, K., and H.B. Seed. 1984. Simplified procedures for the evaluation of settlements in clean sands. Report No. UCB/BT-84/16, Earthquake Engineering Research Center, University of California, Berkeley.

Wagner, D.L., Jennings, C.W., Bedrossian, T.L., and E.J. Bortugno. 1987. Geologic map of the Sacramento Quadrangle: California Division of Mines and Geology, Regional Geologic Map No. 7A, scale 1:250000, Sacramento.

Wesnouski, S. G. 1986. Earthquakes, Quaternary Faults, and Seismic Hazard in California. Journal of Geophysical Research, Vol. 91, No. B12, Table A1.

Yuba County. 2007. Yuba County Ordinance Code. http://www.co.yuba.ca.us/departments/BOS/documents/ordinance. Accessed June 19, 2009.

3.7 Greenhouse Gas Emissions

Table 3.7-1 Greenhouse Gas Emissions Checklist

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?	☐	☐	☐	☒

3.7.1 Setting

Greenhouse gases (GHGs) are gases that have been shown to trap heat in the atmosphere. Because of this characteristic, and because GHGs can remain in the atmosphere for decades or longer, GHGs are thought to have an effect on climate change (CARB 2009). The Intergovernmental Panel on Climate Change (IPCC) has found that there is a correlation between increased atmospheric levels of carbon dioxide (CO_2) and rising global temperatures (Figure 3.7-1).

The term “climate change” refers to any significant change in measures of climate (temperature, precipitation, or wind) that lasts for an extended period (decades or longer). Climate change may be affected by a number of factors including natural cycles, such as changes in the sun’s intensity; natural processes within the climate system, such as changes in ocean circulation; and human activities that change the atmosphere’s composition (such as the release of carbon dioxide through burning fossil fuels) or land surface (such as deforestation or urbanization) (USEPA 2010).

GHGs identified by the State in California Assembly Bill 32 (AB 32) include: CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Global warming potential is a measure of how much a given amount of GHGs is estimated to contribute to climate change and is devised to determine potential warming effects of different gases. Global warming potential is a relative scale that compares the GHG to that of CO_2. For a given GHG, the CO_2 equivalency (CO_2e) is a quantity that describes the amount of CO_2 that would have the same global warming potential, when measured over a specified timescale (generally, 100 years). The global warming potential of CH_4 over 100 years, for example, is 21. This means that the emission of 1 million metric tons of CH_4 would be equivalent to the emission of 21 million metric tons of CO_2.

The effects of climate change on the project area and region are difficult to predict with accuracy, but could result in intensely hot summers, electricity shortages, increased fire risk, socioeconomic impacts, and impacts to agriculture, public health, ecologically sensitive habitat, plant and wildlife resources, and water resources.

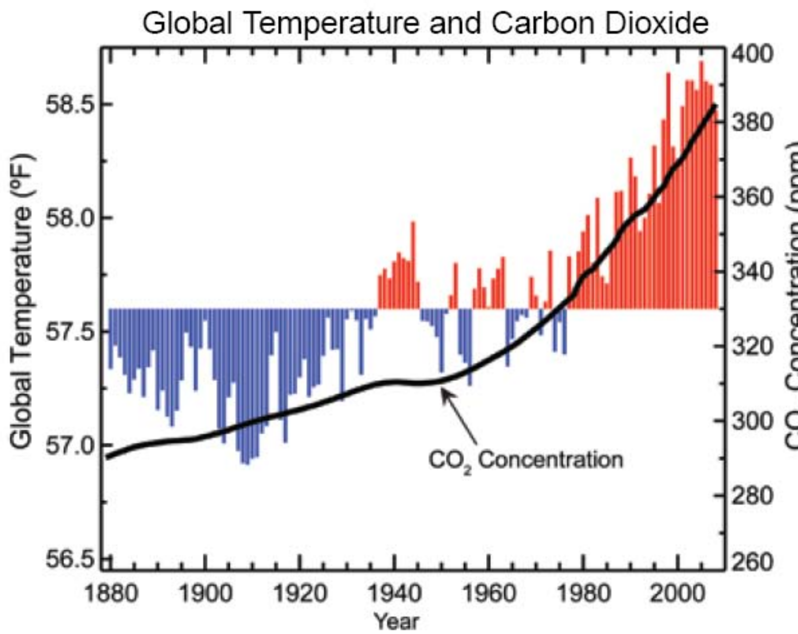


Figure 3.7-1 Relationship Between Global Temperature and Carbon Dioxide

Source: USGCRP 2009

Applicable Regulations, Plans, and Standards

California is a substantial contributor to global GHG emissions: it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). As a result of climate change, California is expected to experience poorer air quality, a sharp rise in extreme heat, a less reliable water supply, more dangerous wildfires, and increased risks to agriculture in the future. Statewide, annual temperatures are expected to increase by as much as 10 degrees Fahrenheit by 2100 (CEC 2006).

Regulations addressing the assessment and mitigation of climate change have been established on the federal and state levels. Neither Butte County Air Quality Management District (BCAQMD) nor Feather River Air Quality Management District (FRAQMD), however, have established guidelines or CEQA significance thresholds for GHG assessment.

Federal

In 2009, the United States Environmental Protection Agency (USEPA) issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from large sources and suppliers in the U.S. The intent is to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit the specified amount (or more) per year of GHGs are required to submit annual reports to USEPA. The gases covered by the proposed rule are CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and other fluorinated gases. The rule became effective December 2009. Facilities are required to collect emissions data as of January 1, 2010. The first emissions reports are due to be submitted by March 31, 2011.

State

Executive Order S-3-05 and Assembly Bill 32

California Governor Arnold Schwarzenegger issued Executive Order S-3-05 in 2005, establishing statewide GHG emission reduction targets of 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. In 2006, Governor Schwarzenegger signed the Global Warming Solutions Act, Assembly Bill (AB) 32, with the requirement of reducing the State's GHG emissions to 1990 levels by 2020. With the passage of AB 32, the California Legislature officially recognized the State's vulnerability to the effects of global warming. The AB 32 program is the first statewide program in the country to mandate an economy-wide emissions cap that includes enforceable penalties.

Senate Bill 97

The California Senate passed Senate Bill 97 in 2007, requiring the Governor's Office of Planning and Research to prepare, develop, and transmit guidelines for the feasible mitigation of GHG emissions or their effects, including, but not limited to, effects associated with transportation or energy consumption.

California Air Resources Board, Climate Action Team, and Climate Change Scoping Plan

In 2007, based on its 1990 to 2004 inventories of GHG emissions in California, California Air Resources Board (CARB) staff approved a total of 427 million metric tons of CO_2e as the statewide GHG 1990 emissions level and 2020 emissions limit. This limit is an aggregated statewide limit, rather than sector- or facility-specific. Taking into account expected growth in population and energy use, the emissions reduction target is estimated to be equivalent to approximately 30 percent below business emissions as usual by the year 2020.

The Climate Change Scoping Plan (Scoping Plan), approved by CARB in 2008 to fulfill Section 38561 of AB 32, is the State's roadmap to reaching GHG reduction goals. The plan, developed by CARB in conjunction with the California Climate Action Team,[1] outlines a number of key strategies to reduce GHG emissions. The measures in the Scoping Plan will take effect in 2012. Discrete early action measures include a low carbon fuel standard, landfill CH_4 capture, reductions from mobile air conditioning, semiconductor reductions, SF_6 reductions, and a heavy-duty vehicles measure.

CEQA Guideline Amendments

In December 2009, the California Natural Resources Agency adopted CEQA Guidelines Amendments with new language for addressing the quantification and mitigation of GHG emissions. The Amendments became effective March 18, 2010. Updates to the Amendments include:

- Section 15064: Requires a lead agency make a "good-faith effort, based on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project." The agency may use a quantitative or qualitative analysis.
- Section 15126.4: Mitigation measures may include measures in an existing plan or mitigation program; implementation of project features; off-site measures, including offsets; or GHG sequestration. Mitigation in a plan may include project-specific mitigation.
- Appendix G: Two checklist items under a new Greenhouse Gas Emissions category were added to the checklist in Appendix G of the CEQA Guidelines (OPR 2009).

---

1 The California Climate Action Team was formed in 2004 to assist CARB with the Climate Change Scoping Plan. It is comprised of 14 agencies and 11 subgroups.

Local

In evaluating GHG impacts associated with development projects, the BCAQMD and CCAPCD follow the guidance and recommendations from the California Air Pollution Control Officers Association (CAPCOA 2008). Although the CAPCOA document has not been officially endorsed by the State, it is often used by air districts as a resource for how to treat GHG-related impacts in EIRs because there is, to date, no generally accepted approach. BCAQMD and FRAQMD have not established guidelines or significance thresholds for GHG assessment and, instead, rely on the CAPCOA document for guidance regarding appropriate analytical methodologies and mitigation.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on cultural resources. See Chapter 1.0 for a complete list of APMs that the applicant has incorporated into the project to avoid or minimize impacts on all resources.

APM AIR-3: Minimize greenhouse gas emissions during construction

3.7.1 Environmental Impacts and Mitigation Measures

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?

LESS THAN SIGNIFICANT IMPACT. At this time, there are no mandatory GHG regulations or finalized agency threshold of significance that apply to the proposed project. In the absence of an accepted or adopted significance threshold, and in order to conservatively assess impacts from GHG emissions, a quantitative significance criterion of 10,000 metric tons (MT) of CO_2e per year is used for this analysis. This value corresponds to the interim threshold adopted by the South Coast Air Quality Management District (SCAQMD) in response to the adoption of AB 32. Using this level for the proposed project is consistent with the nature of impacts associated with GHG emissions, which do not produce a direct localized effect, but take place on a statewide and global scale.

During project construction, GHGs would be emitted from employee vehicles, light-duty vehicles (crew trucks, line trucks, and water trucks), helicopters, and off-road equipment (bulldozers, graders, and backhoes). GHG emissions were estimated for each construction phase using the URBEMIS 2007 emissions model and published emission factors. Based on the construction techniques used, the estimated GHG emissions from project construction are estimated at approximately 3,000 MT of CO_2e (Appendix A). Amortized over a 30-year period, these GHG emissions are estimated at approximately 100 MT of CO_2e per year. Thus, GHG emissions generated from project construction would be less than significance criteria of 10,000 MT of CO_2e per year and, thus are considered less than significant.

For operation of the transmission line following construction activities, no additional maintenance is required beyond the existing ongoing maintenance. Therefore, no long-term GHG emissions increase would result from construction or operation of the project. Even though GHG emissions from project construction would have a less than significant impact, APM AIR-3 would help to reduce GHG emissions during construction.

b. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

NO IMPACT. The scoping plan approved by the CARB Board in December 2008 provides the outline for actions to reduce California's GHG emissions (CARB 2008). The scoping plan requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. At this time, there are no mandatory GHG regulations or finalized agency guidelines that would apply to the project.

CARB, under the California Global Warming Solutions Act of 2006, has the primary responsibility for reducing greenhouse gas emissions. A substantial portion of the GHG emission reductions proposed in the 2006 Climate Action Team Report to reach 1990 emission levels by 2020 are strategies to be taken by agencies other than CARB (CalEPA 2006). CARB has set forth a list of early action measures to be adopted and implemented by January 1, 2010. The *Proposed Early Actions to Mitigate Climate Change in California* document is a status report on early actions being taken by the participating departments and agencies (CARB 2007).

In the absence of established State regulations addressing mitigation of impacts related to GHG emissions, the California Governor's Office of Planning and Research (OPR) has issued guidance to encourage agencies to develop a regional approach (OPR 2009). The project route is located within Butte, Sutter, and Yuba counties. BCAQMD has air quality jurisdiction over Butte County and FRAQMD has air quality jurisdiction over Sutter and Yuba counties. Neither BCAQMD nor FRAQMD have issued guidance for GHG reporting or set thresholds for the analysis of GHG emissions under CEQA. Therefore, there would be no impact under this criterion.

References

California Air Resources Board (CARB). 2007. Proposed Early Actions to Mitigate Climate Change in California. April 20.

__________. 2008. Climate Change Scoping Plan: A Framework for Change. December.

__________. 2009. Climate Change Backgrounder: The Greenhouse Effect and California (fact sheet). Assembly Bill 1493.

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act (white paper).

California Energy Commission (CEC). 2006. Inventory Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report (CEC-600-2006-013-SF). December.

California Environmental Protection Agency (CalEPA). 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. March.

Office of Planning and Research (OPR), California Governor's. 2009. CEQA Guidelines Sections Proposed to be Added or Amended. April 13.

URBan EMISsions Model (URBEMIS). 2007. Software Version 9.2.0.

United States Environmental Protection Agency (USEPA). 2010. Basic Information: Climate Change or Global Warming? http://www.epa.gov/climatechange/basicinfo.html. February 10.

United States Global Change Research Program (USGCRP). 2009. Global Climate Change Impacts in the United States. Cambridge University Press: New York. pp. 13 to 26.

3.8 Hazards and Hazardous Materials

Table 3.8-1 Hazards and Hazardous Materials Checklist

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?	☐	☐	☒	☐

This section addresses the environmental setting and impacts related to the construction and operation of the project involving the issues of environmental hazards and hazardous materials. Hazards include the risks associated with potential explosions, fires, or release of hazardous substances in the event of an accident or natural disaster, which may cause or contribute to an increase in mortality or serious illness, or pose substantial harm to human health or the environment. Hazardous materials are classified as those that include solids, liquids, or gaseous materials that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, could pose a threat to human health or the environment.

Reconstruction work on the project could result in the exposure of the public and workers to potential health and safety hazards such as chemical substances and fuel-powered equipment, helicopters for transporting structures and personnel, high-voltage electrical equipment (potential fire hazard and EMF source), seismic hazard, and the potential finding of contaminated soils or groundwater during excavations.

Hazardous materials such as fuel, oil, and lubricants would likely be used during project construction. In addition, subsurface construction would involve excavation in areas with contaminated soil or groundwater, as well as the generation of debris. If encountered, contaminated soil or groundwater may qualify as hazardous waste, requiring regulated handling and disposal.

3.8.1 Setting

The project route traverses predominantly agricultural portions of Butte, Sutter, and Yuba counties but also includes mixed land uses, such as residential, commercial, and industrial. Land uses along the project route that have the potential to create safety hazards and/or may contain hazardous materials are predominantly agricultural with some residential and industrial uses. Much of the project route parallels the Western Pacific Railroad alignment and/or area levees.

The project route traverses portions of Butte County designated as agricultural, agricultural residential, industrial, and commercial (Butte County 2009). In Sutter County, the project route crosses or is adjacent to agricultural properties where agricultural pesticides and herbicides are likely used (PG&E 2009).

Within Yuba County, the project route crosses or is adjacent to properties designated by the Yuba County General Plan as Valley Agricultural, Single Family Residential, Multiple Family Residential, Public, Industrial, and Community Commercial. Agricultural pesticides and herbicides are likely in use or have been used in agricultural and newer residential areas. Facilities in Yuba County located within 1 mile of the project right-of-way (ROW) and associated with hazardous materials include the Yuba County Airport, agricultural lands, and residential and commercial areas (PG&E 2009 and DigitalGlobe 2009).

Hazardous Materials Sites near the Project ROW

A review of environmental databases was conducted to identify those sites known to be associated with releases of hazardous materials or wastes along the project route (EDR 2008, DTSC 2009, and SWRBC 2009). This research covered a 1-mile radius centered on the project route. A summary of the sites listed within 0.5 miles of the project ROW centerline is provided in Table 3.8-2. The following federal and state databases listed below were reviewed (EDR 2008):

- Federal: National Priority List (NPL), Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), CERCLIS No Further Remedial Action Planned (CERCLIS-NFRAP), Resource Conservation and Recovery Act Information System (RCRIS, CORRACTS and Non-CORRACTS TSD facilities, RCRA Generator List and RCRA-NonGen), Facility Index System (FINDS), US Brownfields, Emergency Response Notification System (ERNS), and others.
- State of California: HIST Cal-Sites, Bond Expenditure Plan, Cortese List, California SWRCY (list of recycling facilities), California SWF/LF (Landfill facilities), California LUST (leaks of hazardous substances from underground storage tanks), Facility Inventory Database (CA FID UST), Spills, Leaks, Investigations and Cleanups (SLIC), Underground Storage Tank (UST) List and HIST UST (historical UST sites), Aboveground Storage Tank (AST), SWEEPS UST (underground storage tank listing), Voluntary Cleanup Properties (VCP), RESPONSE (confirmed release sites), HAZNET (hazardous waste disposal sites), EMI (toxics and criteria pollutant emissions data), ENVIROSTOR (known or suspected contamination sites), and others.
- “Orphan” listings: The research included the “unmappable” (also referred as “orphan”) listing, cross-referencing available address information and facility names.

Table 3.8-2 Hazardous Materials Sites Identified Along the Project Route

Site/Location	Proximity to the ROW centerline (miles)	Data Source	Hazard Type/Finding
Yuba Sutter Disposal, Inc / YSDI Greenwaste Composting 3001 North Levee Rd, Marysville, CA	0 – 0.25	SWF/LF, WMUDS/SWAT, CA WDS	Class III landfill for non hazardous waste.
Feather River Veterinary Hospital 5975 Woodland Dr, Marysville, CA	0 – 0.25	HAZNET	Disposal of photochemicals and photoprocessing waste.
E-Z Serve 1822 North Beale Rd, Marysville, CA	0.25	LUST, Cortese	Release of gasoline that impacted groundwater. Open – Site Assessment Status. This site is located west of the project ROW.
Texaco Station #120 4867 Oliverhurst Rd, Oliverhurst, CA	0.25	LUST, Cortese, Notify 65, SWEEPS UST	Release of gasoline that impacted groundwater.
Mathews Brothers 950 Ramirez Rd, Marysville, CA	0.25	CA FID UST, HIST UST, SWEEPS UST	No releases were reported in the EDR database report.
Eastside Market and Gas 7422 Lincoln Boulevard, Palermo, CA	0.25	HIST UST, SWEEPS UST	No releases were reported in the EDR database report.
Rancho Cenedella Inc 7681 Jack Slough Road, Marysville, CA	0.25	AST, HIST UST, CA FID UST, SWEEPS UST	One 5,000-gallon AST and unleaded gasoline UST. No releases were reported in the EDR database report.
East Nicolaus Market 1968 East Nicolaus Ave, Nicolaus, CA	0.25	LUST	Release of gasoline in 1997. Drinking water was affected.
Brown's Elementary School 1248 Pacific Ave, Rio Oso, CA	0.25	HAZNET, LUST, Cortese	The case has been closed by the local regulatory agency.
Circle A 1215 22nd Street East, Marysville, CA	Greater than 0.25	LUST	Release of gasoline discovered in 2003. Groundwater has been impacted. A clean-up and abatement order was issued in 2006.
Oliverhurst Recycling Center 4833 Oliverhurst Ave, Oliverhurst, CA	0.25 – 0.5	SWRCY	No data indicative of leaks or releases from this facility has been reported.
Danna and Danna 1001 Feather River Blvd, Marysville, CA	0.25 – 0.5	LUST, Cortese, Notify 65	A gasoline release was reported in 1989. No data was available.
Sierra View Memorial 4900 Olive Ave, Marysville, CA	0.25 – 0.5	LUST, Cortese	The case has been closed by the local regulatory agency.
Gee Property 4880 Oliverhurst Rd, Oliverhurst, CA	0.25 – 0.5	LUST, Cortese	A gasoline release was reported in 1988. The release impacted the soil only.
AGV Corner Market 4881 Oliverhurst Rd, Oliverhurst, CA	0.25 – 0.5	LUST, Cortese	A release of gasoline was reported in 1999.
Sierra Superstop #8 5057 Oliverhurst Ave, Oliverhurst, CA	0.25 – 0.5	LUST, Cortese	Controlled migration of the plume from this site.

Table 3.8-2 Hazardous Materials Sites Identified Along the Project Route

Site/Location	Proximity to the ROW centerline (miles)	Data Source	Hazard Type/Finding
Tom's Sierra Co. #76 5073 Oliverhurst Ave, Oliverhurst, CA	0.25 – 0.5	HAZNET, LUST SWEEPS UST	Disposal of tank bottom waste, and unspecified oil-containing waste. Monitoring studies concluded that if concentrations remain low and continue to decline, a recommendation for site closure will be made.
Coffee Express 5202 Lindhurst Ave, Marysville, CA	0.25 – 0.5	LUST, Cortese	Gasoline release discovered in 1990 and was determined to impact the soil only. The LUST case has been closed by the local regulatory agency.

Source: EDR 2008, DTSC 2009, DigitalGlobe 2009, SWRCB 2009.

Twelve sites listed in the Cortese List (potentially having soil and/or groundwater impacts to the environment) were identified within a 1-mile radius from the project ROW centerline. Three additional underground storage tanks sites (LUST sites) were also identified along the project route. In addition, the proposed transmission line modifications would pass through agricultural lands; therefore, there is also the possibility that herbicides or other agrochemicals would be present in the soil.

The orphan listing review also identified a potentially contaminated site within a 1-mile radius of the project ROW centerline (EDR 2008):

- PG&E Manufactured Gas Plant SV-CG-MRY-2 (ENVIROSTOR). The site is located in downtown Marysville, a residential and commercial area. According to the California Department of Toxic Substances and Chemicals (DTSC), the site was the location of a former gasification plant. Residues and waste from the manufacturer's gas process were stored and disposed onsite. In addition, petroleum leaked from onsite storage tanks. Potential contaminants of concern at this facility include total petroleum hydrocarbons (TPH) as diesel (TPHd), as gasoline (TPHg), and as motor oil; and polynuclear aromatic compounds (PAHS).

Airports

A segment of the project route is located approximately 1 mile east of the Yuba County Airport, near the town of Olivehurst, in Yuba County, California. According to the Yuba County Airport Comprehensive Land Use Plan (SACOG 1994), the project route is located within the overflight zone of this airport.

Fire Safety

The project route passes through a number of areas that are classified by the California Department of Forestry and Fire Protection (Cal Fire) as moderate to high fire hazard severity zones (PG&E 2009b and Cal Fire 2009). The northern portion of the project route passes through moderate and high fire hazard severity zones from the northern end, south to near the Butte/Yuba County border. Much of this area is located in the hills east of Oroville. Most of the remainder of the area through which the project alignment passes is unzoned in Yuba and Sutter counties. Cal Fire has determined that Sutter County has no Very High Fire Hazard Severity Zones. The alignment passes through areas of moderate fire hazard severity in the vicinity of Marysville, where the alignment crosses Highway 20 and north and south of the community of Olivehurst (Cal Fire 2009).

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on hazards and hazardous materials. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM HAZ-1: Implement a spill prevention plan

APM HAZ-2: Conduct construction soil sampling and testing if soil contamination is suspected

APM HAZ-3: Conduct groundwater sampling and testing if suspected contaminated groundwater is encountered during construction

APM HAZ-4: Develop and implement a helicopter lift plan

APM HAZ-5: Prepare a health and safety plan

APM HAZ-6: Develop and implement a fire risk management plan

APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (SWPPP)

3.8.2 Environmental Impacts and Mitigation Measures

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

LESS THAN SIGNIFICANT. During project construction, hazardous materials such as liquid concrete, vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored in construction staging areas. Operation and maintenance of the project would involve annual ground inspections and the periodic and routine transport, use, and disposal of minor amounts of hazardous materials, primarily fuel, and lubricating oils. Minor spills or releases of these hazardous materials could occur due to improper handling, storage, and/or maintenance, leading to potential soil or groundwater contamination.

Waste generation from the project includes the removed towers and conductor, remnant construction and equipment maintenance materials, and crates used to ship materials. After construction, all hazardous materials would be removed from the site. According to the applicant, steel from removed towers and conductor would be salvaged and recycled as appropriate at a local salvage facility. The removed material that cannot be salvaged, recycled, or reused would be disposed in a local landfill facility (PG&E 2009b).

In order to reduce the potential for spills and leaks of hazardous materials and reduce the severity of the impact in the event of an inadvertent spill, the applicant has proposed to include a Spill Prevention Plan in APM HAZ-1, which is related to the SWPPP to be developed as part of APM HYDRO-1. In addition, the applicant also proposes to have a minimum of 50 feet of setback from streams, creeks, or other water bodies to avoid potential impacts to the riparian habitats from construction and staging areas.

With implementation of the above actions, impacts associated with spills of hazardous materials during construction or operation of the project would be less than significant.

b. Would the project 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?

LESS THAN SIGNIFICANT. Implementation of the proposed actions required under APM HAZ-1 for spill prevention and hazardous substance control, as well as the requirements of the Storm Water Pollution Prevention Plan discussed in APM HYDRO-1, would reduce impacts under this criterion to less than significant levels.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

LESS THAN SIGNIFICANT. The project would not emit hazardous emissions or handle acutely hazardous materials substances or waste within 0.25 miles of an existing or proposed school as defined in Section 21151.8 of the CEQA Statute. The statute specifies that any project involving the construction or alteration of a facility within 0.25 miles of a school that might reasonably be anticipated to emit hazardous air emissions, or handle an extremely hazardous substance—or a mixture containing extremely hazardous substances—in a quantity equal to or greater than the state threshold may pose a health or safety hazard to persons who would attend or would be employed at the school.

Section 25532 of the Health and Safety Code defines extremely hazardous substances as those listed in Appendix A of 40 CFR Part 355, The List of Extremely Hazardous Substances and Their Threshold Planning Quantities. Fuels, lubricant oils, and other project construction related materials are not included in this list. During the proposed transmission line reconstruction and operations, only vehicle fuels, liquid concrete, oils and related maintenance lubricants would be handled, stored, and transported. Therefore, this criterion is not applicable to construction and operation of the project.

"Hazardous emissions" means emissions that are classified as a toxic air contaminant by the California Air Resources Board or by the air pollution control board in the regional area. Diesel-fueled engines are likely to emit contaminants during construction. Potential impacts to all receptors of these emissions are discussed in Section 3.3, Air Quality.

Potential risk of accidental spills of hazardous materials during project construction are discussed in Section 3.8.2(a) of the applicant's PEA; however, the implementation of actions proposed in the Spill Prevention Plan (APM HAZ-1) and the provisions of the SWPPP to be prepared by the applicant prior construction would reduce impacts under this criterion to less than significant levels.

d. Would the project 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?

LESS THAN SIGNIFICANT WITH MITIGATION. The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." Twelve Cortese sites and three additional underground storage tank sites were identified within a 1-mile radius from the project ROW centerline (Table 3.8-2). In addition, agricultural pesticides and herbicides are likely in use or have been used in agricultural and newer residential areas.

The project would involve surface and subsurface construction activities including the removal and replacement of 240 transmission towers, the construction of temporary roads, and minor setting changes in the Palermo and East Nicolaus substations. The installation of hybrid poles—proposed for use at the majority of locations along the project route—would be augured to a maximum diameter of 7.5 feet and a depth of approximately 20 feet. According to the applicant, these activities would involve the excavation and handling of approximately 17,640 cubic yards of soil.

Due to the fact that most of the listed contaminated sites located within a 1-mile radius of the project ROW had affected soil groundwater with hydrocarbons, and other chemicals of concern are likely in use in the area, unexpected soil or groundwater contamination would be encountered during the proposed surface and subsurface construction activities.

As part of APM HAZ-1, the applicant proposes to implement an Environmental Training and Monitoring Program, which would include a detailed sampling protocol in the event of encountering unexpected contamination along the project route or in minor replacements that would be required in substations. In addition to APM HAZ-1, the applicant proposes to implement APM HAZ-2 and APM HAZ-3 as part of the project design.

In addition to the APMs, Mitigation Measure (MM) HAZ-1 (Contaminated Soil and Groundwater Contingency Plan) would reduce potential impacts associated with hazards to the public or the environment through exposure to contaminated sites. Implementation of APM HAZ-1, APM HAZ-2, APM HAZ-3, and MM HAZ-1 would reduce impacts to less than significant levels under this criterion.

> **MM HAZ-1: Contaminated Soil and Groundwater Contingency Plan.** The applicant shall integrate the proposed sampling protocols described in APM HAZ-2 and APM HAZ-3 into a project construction-specific contingency plan to address potential for unearthing or exposing buried hazardous materials or contamination or shallow contaminated groundwater during construction activities. The plan shall detail the preventive actions that the applicant or its contractor would take to prevent the migration of contaminated soils or other materials offsite and the remedial action that would be undertaken. Site-specific plans should be developed for the areas where there is a high probability of encountering shallow contaminated soil or groundwater within 20 feet of the ground surface and the depth of construction.

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?

NO IMPACT. The Yuba County Airport is located approximately 1 mile east of a portion of the project route (Towers 205 to 213). According to the Yuba County Airport Comprehensive Land Use Plan and its Land Use Compatibility Guidelines for Safety (SACOG 1994), the project ROW is located within the overflight zone of the airport; however, there are no restrictions to project activities within this area (SACOG 1994).

Height standards for defining obstructions to air navigation are established by the Federal Aviation Administration (FAA) and are defined in Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. In order to make a determination whether a project constitutes a hazard to air navigation, FAR Part 77 requires that notice be given to the FAA if any kind of proposed construction or alteration is (1) more than 200 feet in height above the ground level at its site, or (2) of a greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from all edges of the runway surface if the runway is more than 3,200 feet in length.

The Yuba County Airport has two major runways (Yuba County Airport 2009): Runway 14/32 (6,006 x 150 feet, paved, lighted) and Runway 05/23 (3,261 x 150 feet, paved). The distance between the closest portion of the project route (Tower 207) and this airport is approximately 5,600 feet from the end of

Runway 05/23 (DigitalGlobe 2009). Per FAR 77.11, the FAA would require notification for proposed structures exceeding 159 feet in height at this distance.

Given that the hybrid poles proposed to be installed along this portion of the alignment, and the cranes to be used during conductor replacement would not exceed a maximum height of 120 feet, no obstruction to the navigable airspace in the overflight zone of the Yuba County Airport is anticipated, and FAA notification would not be required. Therefore, the project would have no impact under this criterion.

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?

LESS THAN SIGNIFICANT. The Siller Bros Inc. Aviation, a private airstrip, is located within 2 miles of the project route. However, due to the distance from the project to the airport, the infrequent flights, and lighter aircraft, the project would not expose people residing or working along the project route to a safety hazard.

Structures and materials to be removed and used during construction would be transported in and out of the construction areas by both high-duty and light-duty helicopters. Helicopters would also be used to transport construction workers to some pole sites located in remote areas, or when restrictions on vehicular use and heavy equipment use are noted. According to the applicant, it is estimated that a total of 2904 minimum trips would be required for all the structure and line pulling work required by the project (PG&E 2009b). Additional information provided by the applicant indicates that helicopter contractors will handle all required FAA notifications and flight plans, alert local airports when they will be in the airport's designated airspace, and notify local law enforcement when flying in urban areas.

In order to comply with requirements of the FAA, and reduce the risk of the operation of helicopters to structures and/or persons, the applicant will implement APM HAZ-4, a helicopter life plan. With the implementation of APM HAZ-4, impacts would be less than significant under this criterion.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

LESS THAN SIGNIFICANT. Emergency access to the project vicinity could be affected by project construction, and construction-related traffic could delay or obstruct the movement of emergency vehicles. According to the applicant, occasionally, it may be necessary to temporarily close one lane of traffic, requiring the implementation of traffic control and safety measures (PG&E 2009a).

State Highways 65 and 70 are the primary evacuation routes for the communities of Linda, Olivehurst, and Plumas Lake (Yuba County 2006). State Highways 70, 162, and 99 are also primary evacuation routes for the City of Oroville (City of Oroville 2008).

As part of standard operating procedures, the applicant proposes to implement a Health and Safety Plan (APM HAZ-5), which includes coordination with local agencies in the event that road closures might impede emergency access routes or services (PG&E 2009a).

The implementation of the action described in APM HAZ-5 along with a project-specific traffic control plan required by Caltrans and local Counties would reduce impacts on emergency access routes or services to less than significant levels.

h. Would the project 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?

LESS THAN SIGNIFICANT. The primary risk for potential fire hazards for transmission line construction and operation would be a break in the line, which could result in a fire. Additional potential risks would involve the use of vehicles and equipment, which could generate heat or sparks and ignite dry vegetation, thus causing a fire. The project route would pass through areas considered moderate to high for wildfire hazards. The northern portion would pass through moderate and high fire hazard severity zones from the northern end, south to near the Butte/Yuba County border. Therefore, fire prevention actions should be taken in order to reduce the wildland fire risk, especially in those areas of moderate and high severity zones. The implementation of APM-HAZ 6, fire risk management plan, would reduce impacts under this criterion to less than significant levels.

References

Butte County. 2007. Butte County General Plan Settings and Trends Report Public Draft. Prepared by Design, Community & Environment. August 2.

Cal Fire (California Department of Forestry and Fire Protection). 2009. Fire Hazard Severity Zones Maps. http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php. Accessed June 24, 2009.

City of Oroville. 2008. Fire Department Information. http://www.cityoforoville.org/index.aspx?page=318. Accessed June 29, 2009.

DigitalGlobe. 2009. Google Earth Satellite Image. Google Earth version 4.3.7284.3916 (beta). Accessed June 27 to July 3, 2009.

DTSC (California Department of Toxic Substances Control). 2009. EnviroStor Database. http://www.envirostor.dtsc.ca.gov/public. Accessed June 23, 2009.

EDR (Environmental Data Resources Inc). 2008. EDR DataMap Environmental Atlas. Utility Corridor. Butte, CA. Inquiry Number 02279484.1r. July.

PG&E (Pacific Gas and Electric Company). 2009a. Proponent's Environmental Assessment, Palermo-East Nicolaus 115 kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services, by ICF Jones & Stokes. February.

__________. 2009b. Palermo–East Nicolaus 115 kV Reconstruction Project. Data Gap Responses. Received in May and June.

SACOG (Sacramento Area Council of Governments). 1994. Airport Land Use Commission. Yuba County Airport Comprehensive Land Use Plan. May.

SWRCB (California State Water Resources Control Board). 2009. Geotracker Database. https://geotracker.waterboards.ca.gov. Accessed June 24, 2009.

Yuba County Office of Emergency Services. 2006. South Yuba Evacuation Plan. September 28.

This page intentionally left blank

3.9 Hydrology and Water Quality

Table 3.9-1 Hydrology and Water Quality Checklist

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. Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

3.9.1 Setting

The project is located in three counties (Butte, Yuba, and Sutter) within the Sacramento River Basin and is under the jurisdiction of the Central Valley Regional Water Quality Control Board. Figure 3.9-1 shows the hydrological features crossed by the project route.

Butte County

The northern portion of the project route would be located approximately 3 miles southeast of Oroville in Butte County. The major surface water features in this area of Butte County that would not be crossed by the project route include: Lake Oroville, to the northeast of the northern extent of the project, and the Feather River, which flows south out of Lake Oroville and parallels the project route to the west. The major surface water features that would be crossed by the project route include: Wyman Creek, Wyandotte Creek, North Honcut Creek, and South Honcut Creek. Wyman Creek flows from east to west and would be crossed by the project route south of Oroville. See Section 3.4, Biological Resources, for a description of wetland features that would be crossed and impacted by the project.

Wyandotte Creek flows from east to west and would be crossed by the project route several times between Palermo and its confluence with North Honcut Creek. North and South Honcut Creek flow from east to west and would be crossed several times by the project route at their confluence with Honcut Creek. The border between Butte and Yuba counties parallels South Honcut Creek. The minor surface water features that would be crossed by the project route are two unnamed streams located west of Palermo. According to the Clean Water Act Section 303(d) list of impaired waterbodies, the Feather River, Wyandotte Creak, and North and South Honcut Creek are not listed for any impairment (SWQRB 2009).

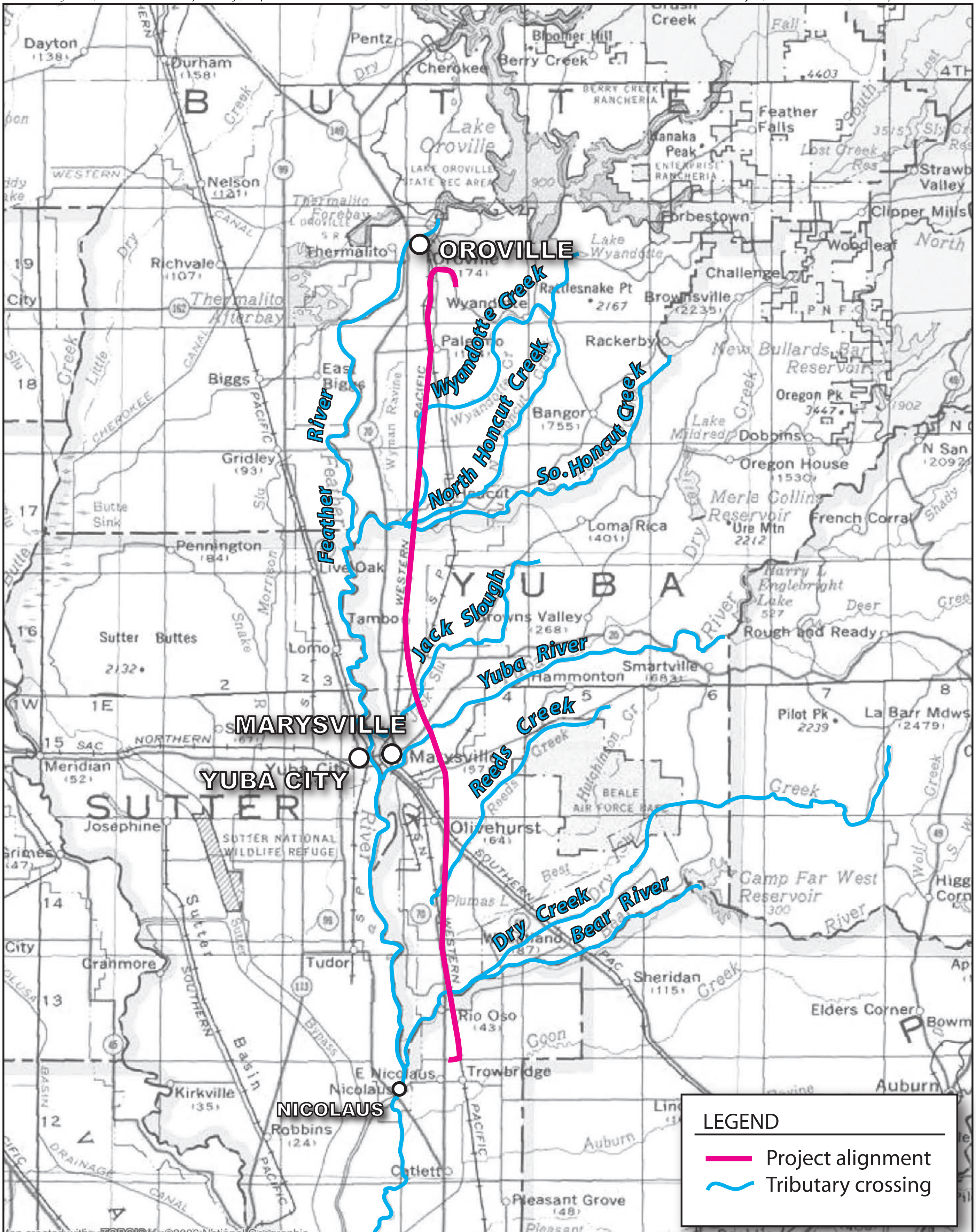
The northern portion of the project route would not be located within a groundwater basin identified by the California Department of Water Resources (DWR). The groundwater basin closest to the project area within Butte County is the Sacramento Valley Groundwater Basin, East Butte Subbasin (Basin Number 5-21.59), which is bound on its southeast side by the Feather River (DWR 2004). Groundwater data is not available due to the northern extent of the project route not being located within a groundwater basin identified by the DWR.

The project route would cross three Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps in Butte County (06007C0985D, 06007C0995C, 06007C1130C, and 06007C1150C). Near Oroville, the project would cross the 100-year floodplain of Wyman Creek on FIRM 06007C0985D (FEMA 2000). The project route would then continue south within the same floodplain and onto FIRM 06007C0995C (FEMA 1998a). According to FIRM 06007C0995C, the project route would leave the 100-year floodplain when Wyman Creek turns southwest away from the project route. The project route would then enter the floodplain of Wyandotte Creek just south of Honcut Road on FIRM 06007C1130C (FEMA 1998b). Continuing in the same 100-year floodplain, the project route would cross North Honcut Creek just north of the Butte and Yuba county border on FIRM 06007C1150C (FEMA 1998c).

Yuba County

The major surface water features within Yuba County that would be crossed by the project route include Jack Slough, Yuba River, Reeds Creek, and Best Slough. Jack Slough flows from east to west into the Feather River and would be crossed by the project route near Marysville. The Yuba River flows from east to west into the Feather River and would be crossed by the project route near Marysville. Reeds Creek flows from east to west into the Feather River and would be crossed by the project route south of Olivehurst. Best Slough flows from east to west into the Feather River and would be crossed by the project route south of Olivehurst. The border between Yuba and Sutter counties parallels the Bear River, which is also crossed by the project route. Ellis Lake is located approximately 2 miles east of the project route in Marysville.

Reference: Fig. 4.8-1, Feather River Tributary Crossings, *Proponent's Environmental Assessment, Palermo–East Nicolaus 115 kV Transmission Line Reconstruction Project*, ICF Jones & Stokes, February 2009



00533.08 Hydro (9-08)

002803.CP10.03.d (2009 CORP CD Archives - Vol 4) 06/24/2010

PALERMO–EAST NICOLAUS 115-KV TRANSMISSION LINE

Figure 3.9-1

Feather River Tributary Crossings

The minor surface water features that would be crossed by the project route include Simmerly Slough and two unnamed canals. Simmerly Slough flows from east to west and would cross the project route north of Jack Slough. The two unnamed canals would cross the project route near the towns of Marysville and Olivehurst. According to the Clean Water Act Section 303(d) list of impaired waterways, there are no surface-water quality impairments in Yuba County (SWQRB 2009). See Section 3.4, Biological Resources, for further description of the minor wetland features that would be crossed and impacted by the project.

The project passes through two subbasins in Yuba County: the North Yuba Subbasin (Basin Number 5-21.60) and the South Yuba Subbasin (Basin Number 5-21.61). The North Yuba Subbasin is bounded on the north by Honcut Creek, in the east by the Sierra Nevada Mountains, on the south by the Yuba River, and on the west by the Feather River. The subbasin has a surface area of approximately 50,000 acres. The storage capacity of the subbasin is estimated at 620,000 acre-feet. The water bearing formations in the subbasin consist of continental deposits of Quaternary to Late Tertiary age. Groundwater levels in the subbasin were not specified but were said to be relatively constant from 1950 through 1990 (DWR 2006a). The North Yuba Subbasin has generally good groundwater quality. Total dissolved solids concentrations range from 149 milligrams per liter (mg/L) to 655 mg/L, with a median of 277 mg/L. The water chemistry in the area indicates a calcium magnesium bicarbonate or magnesium calcium bicarbonate groundwater. There are no documented impairments to the groundwater in the North Yuba Subbasin (DWR 2006a).

The South Yuba Subbasin is bounded on the north by the Yuba River, on the east by the Sierra Nevada Mountains, on the south by the Bear River, and on the west by the Feather River. The subbasin has a surface area of approximately 89,000 acres. The storage capacity of the basin is estimated at 1,090,000 acre-feet. The water bearing formations in the subbasin consist of continental deposits of Quaternary to Late Tertiary age. In the early 1960’s groundwater levels in the subbasin showed a well-developed cone of depression with water levels at the center being just below sea level. By 1984, the groundwater level at the center of the cone of depression had fallen to 30 feet below sea level. This drop in groundwater level was attributed to the continued reliance on groundwater pumping in the subbasin. However, by 1990 the groundwater level at the center of the cone of depression had risen to 10 feet above sea level. According to DWR the groundwater levels continue to increase due to increasing surface water irrigation (DWR 2006b). The South Yuba Subbasin has generally good groundwater quality. Total dissolved solids concentrations are range from 141 milligrams per liter to 686 milligrams per liter, with a median of 224 milligrams per liter. The water chemistry in the area indicates a calcium magnesium bicarbonate or magnesium calcium bicarbonate groundwater. There are no documented impairments to the groundwater in the North Yuba Subbasin (DWR 2006b).

The project would cross seven Flood Insurance Rate Maps in Yuba County (0604270200C, 0604270280B, 0604270290B, 0604270295B, 0604270360B, 0604270370B, and 0604270450B). On FIRM 0604270200C and at the border between Butte and Yuba counties, the project route would be within the 100-year floodplain of South Honcut Creek (FEMA 1983). The project route would leave the 100-year floodplain 2000 feet south of South Honcut Creek. The project route would then run along the border between two flood zone areas of “minimal flooding” to the east (Zone C) and, to the west, an area that could be flooded with less than one foot of water (Zone B). On FIRM 0604270280B, the project route would cross into the 100-year floodplain of Simmerly Slough (FEMA 1982a).

The project route would continue within the same 100-year floodplain and onto FIRM 0604270290B (FEMA 1982b). The project route would then cross the 100-year floodplain of Jack Slough on FIRM 0604270290B. On FIRM 0604270295B, the project route would cross the 100-year floodplain of the Yuba River (FEMA 1982c). Also on FIRM 0604270295B, the project route would enter the 100-year floodplain of Linda Drain and would leave on FIRM 0604270360B (FEMA 1982d). The project route would then cross the 100-year floodplain of Olivehurst Drain. On the southern end of FIRM 0604270360B, the project route would enter the 100-year floodplain of Reeds Creek and would continue within the same floodplain on to FIRM 0604270370B. On FIRM 0604270370B, the project route would leave the 100-year floodplain of Reeds Creek (FEMA 1982e) and parallel the floodplains of Reeds Creek, Linda Drain, Western Pacific Interceptor Canal, and Best Slough through FIRM 0604270370B. The project route would then enter the floodplain of the Bear River on FIRM 0604270450B (FEMA 1982f).

Sutter County

The major surface water feature in Sutter County that would be crossed by the project route is the Bear River. The Bear River flows from east to west into the Feather River and borders Yuba and Sutter counties. Two minor surface water features that would be crossed by the project route include Ping Slough, which flows from east to west and would cross the project route south of the Bear River, and Yankee Slough, which flows from east to west into the Bear River and would cross the project route near its confluence with the Bear River. See Section 3.4, Biological Resources, for further description of the wetland features that would be crossed and impacted by the project. According to the Clean Water Act Section 303(d) list of impaired waterways, the Upper Bear River is listed as having a medium impairment for mercury. This impairment is suspected to be a result of resource extraction (a.k.a. abandoned mines) (SWQRB 2009).

After crossing Yankee Slough, the project would pass through the North American Subbasin (Basin Number 5-21.64). The North American Subbasin is bounded on the north by the Bear River, on the east by a north-south line extending from the Bear River to Folsom Lake, on the south by the Sacramento River, and on the west by the Feather River. The subbasin has a surface area of approximately 351,000 acres, and the storage capacity is estimated at 4.9 million acre-feet. The water bearing formations in the subbasin consist of unconsolidated continental deposits of Quaternary to Late Tertiary age. Groundwater levels in the Sutter County portion of the subbasin have generally been stable (DWR 2006c).

Groundwater quality in the North American Subbasin varies from good to marginal. When compared to applicable water quality standards and guidelines for drinking and irrigation water, elevated levels of total dissolved solids, chloride, sodium, bicarbonate, boron, fluoride, nitrate, iron manganese, and arsenic are present in some areas of the subbasin. Total dissolved solids concentrations exceeding 1000 mg/L are found in an area extending from just south of Nicolaus to Verona. The water chemistry in the area indicates three groundwater types: a magnesium calcium bicarbonate or calcium magnesium bicarbonate; a magnesium sodium bicarbonate or sodium magnesium bicarbonate; and a sodium calcium bicarbonate or calcium sodium bicarbonate groundwater. There are three documented impairments to the groundwater in the North American Subbasin: the former McClellan Air Force Base (AFB), Union Pacific Railroad Yard in Roseville, and the Aerojet Superfund Site (DWR 2006c). The McClellan AFB is located approximately 20 miles south southeast of the southern end of the project route. The Union Pacific Railroad Yard is located approximately 18 miles southeast of the southern end of the project route. The Aerojet Superfund Site is located approximately 20 miles south of the southern end of the project route.

The project would cross two FEMA Flood Insurance Rate Maps in Sutter County (0603940710E and 0603940720E). The project route would within the 100-year floodplain of the Bear River on FIRM 0603940710E (FEMA 2008a) and leave on FIRM 0603940720E near East Nicolaus (FEMA 2008b).

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on hydrology and water quality. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM HYDRO-1: Prepare and implement a storm water pollution prevention plan

APM HYDRO-2: Develop and implement a spill prevention control and countermeasure plan

APM HYDRO-3: Perform a drainage study and comply with setback requirements and county standards

3.9.2 Environmental Impacts and Mitigation Measures

a. Would the project violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT. Construction activities that would disturb the ground surface—including grading for new and existing access roads, drilling holes for transmission towers, and demolition and construction of concrete pads for footings of the new towers—could result in soil erosion and sedimentation. In addition, construction activities associated with the proposed tower removal and new tower installation, conductor replacement, crossing structure installation, and access road improvements can introduce hydrocarbons, fluids, lubricants, and other toxic substances from construction equipment into the surrounding environment. Approximately 0.054 acres of permanent fill would be placed where 56 new structure footings are proposed for placement in wetlands or other waters, and 26.75 acres would be temporarily impacted due to ground disturbance near aquatic features located within designated work area boundaries, temporary project roadways, or where existing tower footings already located in wetlands or other waters are to be removed. Impacts to water quality could be significant.

The General Construction Permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) that describes erosion and sediment control measures that would be implemented for the project. APM HYDRO-1 indicates that the applicant or its contractor would prepare and implement an SWPPP as part of the project. The SWPPP would include a list of best management practices to control erosion from disturbed areas and reduce runoff. In addition, vegetative cover would be established on the disturbed areas as soon as possible after disturbance. The SWPPP would be designed to achieve the goals and objectives pertaining to the protection of water quality from the general plans for Butte, Yuba, and Sutter counties as well as for the City of Oroville.

APM HYDRO-2 indicates that the applicant or its contractor would develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) to minimize the potential for and effects of spills of hazardous, toxic, or petroleum substances during all construction activities. The SPCCP would be included in the SWPPP prior to construction activities. In addition, the applicant indicates they would routinely inspect the construction areas to verify that the control measures specified in the SPCCP are properly implemented and maintained. The applicant would notify its contractors immediately if there were a noncompliance issue and would require compliance.

Impacts related to water quality or waste discharge are not anticipated for operation or maintenance activities associated with the project. Implementation of the SWPPP and SPCCP would reduce potentially significant impacts associated with construction-related erosion, sedimentation, and introduction of hazardous materials or toxic substances to a less than significant level. Therefore, impacts under this criterion would be less than significant.

b. Would the project 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)?

LESS THAN SIGNIFICANT. Construction activities associated with the project would not include significant water use or increases in impervious surfaces. In addition, operation and maintenance activities would not include significant water use. Therefore, the project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, and impacts under this criterion would be less than significant. For more information about water use, refer to Section 3.17, Utilities and Service Systems.

c. Would the project 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?

LESS THAN SIGNIFICANT. As described under significance criteria "a" (above), construction activities that would disturb the ground surface, potentially resulting in soil erosion, include grading for new and existing access roads, drilling holes for transmission towers, and demolition and construction of concrete pads for footings. Approximately 0.054 acres of permanent fill and 26.75 acres of temporary impacts due to ground disturbance near aquatic features would occur. Implementation of the best management practices detailed in the SWPPP (APM HYDRO-1)—particularly the erosion control measures—would minimize the potential for the project to substantially alter the existing drainage pattern along the project route in a manner that would result in substantial erosion or siltation onsite or offsite. Additional requirements related to aquatic feature permitting under Section 404 and 401 of the CWA and Section 1600 of the California Fish and Game Code, as described in Section 3.4, Biological Resources, of this document, would reduce impacts to less than significant.

The applicant or its contractor would also complete a drainage study (APM HYDRO-3) for all of the areas that require grading and new roadways and areas in the 100-year floodplain where tower footings would be installed. The study would include calculations for potential increases in stormwater runoff from project activities including drainage improvements to minimize the risk of flooding in downstream areas due to project activities. The applicant would then incorporate the recommendations for the drainage study into construction plans and comply with county standards for construction in 100-year floodplains.

Additional impacts related to the alteration of existing drainage patterns are not anticipated for any operation or maintenance activity associated with the project. Therefore, impacts under this criterion would be less than significant.

d. Would the project 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?

LESS THAN SIGNIFICANT. Construction activities include the replacement of existing towers. Although the footprint of the replacement towers is slightly larger than the existing towers, the replacement towers are not anticipated to substantially alter existing drainage patterns of the site or area due to the small increase in permanent fill (i.e., 0.054 acres). Temporary impacts include approximately 27 acres of ground disturbance and potential changes in existing drainage patterns. Temporary impacts would be spread out along the linear footprint of the project work areas; therefore, no one area would have drainage patterns altered. Additionally, the measures as outlined above under item "c" would reduce impacts under this criterion to less than significant levels.

e. Would the project 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?

LESS THAN SIGNIFICANT. The project would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. The applicant would perform a drainage study to determine potential increases in runoff water and incorporate the study's recommendation to comply with local county standards (APM HYDRO-3). Therefore, impacts under this criterion would be less than significant.

f. Would the project otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT. As described under significance criteria "a" (above), construction activities that would disturb the ground surface, potentially resulting in soil erosion, include grading for new and existing access roads, drilling holes for transmission towers, and demolition and construction of concrete pads for footings of the new towers. In addition, construction activities associated with the proposed tower removal and new tower installation, conductor replacement, crossing structure installation, and access road improvements can introduce hydrocarbons, fluids, lubricants, and other toxic substances from construction equipment into the surrounding environment.

As a result, impacts to water quality could be significant under this criterion; however, with the implementation of both the SWPPP (APM HYDRO-1) and SPCCP (APM HYDRO-2), potentially significant impacts associated with construction-related erosion, sedimentation, and introduction of hazardous materials or toxic substances would be reduced to a less than significant level. Additionally, impacts related to water quality are not anticipated for operation and maintenance activities associated with the project. Therefore, impacts under this criterion would be less than significant.

g. Would the project 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?

NO IMPACT. No housing construction would occur as part of this project. Therefore, construction and operation of the project would result in no impact under this criterion.

h. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

LESS THAN SIGNIFICANT. A large portion of the project route would be located within a FEMA-designated Flood Hazard Area. Since new poles would replace existing poles, no new structures would be placed within the FEMA-designated Flood Hazard Area that would impede or redirect flood flows. Although the project is located within a FEMA-designated Flood Hazard Area, new poles would be engineered to withstand stresses associated with their proximity to the waterways (APM HYDRO-3). Therefore, construction and operation of the project would result in a less than significant impact under this criterion.

i. Would the project 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?

LESS THAN SIGNIFICANT. A large part of the project area is within a 100-year flood hazard zone and could expose structures to flooding, including flooding as a result of the failure of a levee or dam. The Thermalito Diversion Dam is located in Oroville, California, five miles upstream from the northern end of the project route. With the implementation of APM HYDRO-3, the new structures constructed within the 100-year flood hazard zone would be engineered to withstand stresses associated with flooding. County standards for construction in the 100-year floodplains would be incorporated into design engineering. Therefore, construction and operation of the project would result in a less than significant impact under this criterion.

j. Inundation by seiche, tsunami, or mudflow?

LESS THAN SIGNIFICANT. There is a very low probability of exposure of people and structures to a seiche, tsunami, or mudflow since the large bodies of water closest to the project area are the Thermalito Diversion Dam, which is approximately 5 miles to the north of the project, and the Pacific Ocean, which is about 90 miles away (Google Earth 2009). Most of the project area is also located on relatively flat ground. Therefore, construction and operation of the project would result in a less than significant impact under this criterion.

References

Google Earth. 2009. Google Earth 5.0 (Web Application). http://earth.google.com. Accessed June 18, 2009.

DWR (California Department of Water Resources). 2004. California's Groundwater Bulletin 118; Sacramento Valley Groundwater Basin; East Butte Subbasin.

__________. 2006a. California's Groundwater Bulletin 118; Sacramento Valley Groundwater Basin; North Yuba Subbasin.

__________. 2006b. California's Groundwater Bulletin 118; Sacramento Valley Groundwater Basin; South Yuba Subbasin.

__________. 2006c. California's Groundwater Bulletin 118; Sacramento Valley Groundwater Basin; North American Subbasin.

SWQRB (State Water Quality Resources Board). 2009. Impaired Water Bodies List. http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/2002reg9303dlist.pdf. Accessed June 18, 2009.

3.10 Land Use and Planning

Table 3.10-1 Land Use and Planning Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☒	☐
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.10.1 Setting

The Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project runs approximately 40 miles from the Palermo Substation at the eastern edge of the town of Palermo in southern Butte County southwards to the East Nicolaus Substation in the town of East Nicolaus in Sutter County. Line modifications would take place entirely within the boundaries of the applicant's easement. Most of the route passes through unincorporated portions of Sutter, Yuba, and Butte Counties in the northern Sacramento Valley and the City of Oroville.

Terrain in the project area is generally flat and consists primarily of grazing lands, agricultural fields, and orchards. The Sierra Nevada Mountains to the east and the Sutter Buttes to the west can be seen from many locations along the route. The project route crosses both rural and urbanized areas such as Marysville, Linda, Olivehurst, and Palermo. The route also passes alongside the edge of the Yuba Community College property.

Butte County

Butte County is divided into two topographical sections: a valley area in the northeast portion of the Sacramento Valley and a foothill/mountain region east of the valley. Topography includes the relatively flat Sacramento Valley Floor and associated alluvial fans, with elevations from 60 to 200 feet generally, extensive rolling foothills with an elevation range from 200 to 2,100 feet and the Cascade and Sierra Nevada Mountain ranges, with elevations from 6,000 to 14,000 plus feet above sea level. The primary land use in Butte County is agricultural.

Yuba County

Yuba County is located north of Sacramento, along the Feather River, in the Sacramento Valley. The County lies along the western slope of the Sierra Nevada, the steep slopes making it prime territory for the siting of hydroelectric power plants. Most of the population is located in or near Marysville (the county seat), which is west of the Sierra Nevada on the valley floor. The County's primary land use is agriculture, especially fruit orchards, rice fields, and cattle grazing. Yuba County also has two planned communities, East Linda and Plumas Lake, and development of these areas is regulated by specific plans. East Linda is a residential community consisting of single-family and multifamily residences, neighborhood-servicing commercial uses, schools, and parks. Plumas Lake consists of 5,000 acres of land in the southerly portion of the County.

Sutter County

Sutter County is located north of Sacramento along the Sacramento River in the Sacramento Valley. Sutter County includes a small volcanic formation called the Sutter Buttes. The County's primary land use is agricultural.

City of Oroville

The City of Oroville is situated on the banks of the Feather River in Butte County. Oroville is situated on the eastern rim of the Sacramento Valley and is defined by the floodplains of the Sacramento River and its tributaries.

Railroad Crossings

The project route would parallel and cross over the Southern Pacific Railroad and Union Pacific Railroad lines. The lines are used to transport agricultural goods and other materials. Passenger service is available from Oroville on Amtrak.

Airports

There are four existing airport facilities in the project vicinity. In Butte County, the Oroville Municipal Airport is located approximately 4.5 miles northwest from the project route in Palermo (Butte County 2008). In Sutter County, the Sutter County Airport is located approximately 2.35 miles east of the Town of Linda (Sutter County 2008). In Yuba County, the Yuba County Airport is located approximately 0.75 miles west of the project route in the Town of Olivehurst, and the Beale Air Force Base is located approximately 5.5 miles east of the project route in Linda (Yuba County 2008).

3.10.2 Environmental Impacts and Mitigation Measures

a. Would the project physically divide an established community?

LESS THAN SIGNIFICANT. The project area is currently occupied by similar electrical transmission facilities located within an existing 40-mile long and 500-foot wide right-of-way (easement). The project makes efficient use of current alignments and easements. It would not result in a new barrier to an existing community. Therefore, the construction and operation of the project would result in a less than significant impact under this criterion.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

LESS THAN SIGNIFICANT. The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. The project is a pre-existing use (the existing towers were originally constructed in the early 1900s), and the route would traverse the same parcels in the applicant's existing easement. This existing use has been contemplated in the general plans for Butte, Yuba, and Sutter counties and the City of Oroville.

Butte County

Within Butte County, the project would cross or be adjacent to land designated by the Butte County General Plan as Agricultural, Agricultural Residential, Light Commercial, and Light Industrial. The Butte County General Plan states as an objective that it seeks to “encourage expansion of private utility systems consistent with County plans and policies” (Butte County 1979). The Agricultural, Agricultural Residential, Industrial, and Commercial designations all allow utilities as a secondary use. Therefore, the project route would be consistent with the Butte County General Plan and zoning designations for the areas through which it would traverse.

Yuba County

Within Yuba County, the project would cross or be adjacent to properties designated Agricultural, Residential, Public, Business, and Industrial. In several areas that would be crossed by the project route, utility uses are listed as not permitted. In other areas, utility uses require a conditional use permit (Yuba County 1990; Yuba County 1993; Yuba County 1996). Nonetheless, the existing easement would permit the project to proceed in these areas. With the acquisition of required use permits, the project route would be consistent with the Yuba County General Plan and zoning designations for the areas through which it would traverse.

Sutter County

Within Sutter County, the project route would cross or be adjacent to properties designated Agriculture. The Sutter County General Plan indicates that lands designated Agriculture are used for crop production; orchards; grazing; pasture; rangeland; resource extraction activities; facilities that directly support agricultural operations such as agricultural products processing; and necessary public utility and safety facilities (Sutter County 1996). The zoning ordinance states that communication or utility substations, gas storage, and transmission lines require a use permit. With the acquisition of a use permit, the project route would be consistent with the Sutter County General Plan and zoning designations (Sutter County 1996; Sutter County 2008).

City of Oroville

Within the City of Oroville, the project would cross or be adjacent to properties designated Industrial by the City of Oroville General Plan. In addition, the energy element of the Oroville General Plan states as an objective that they wish to “encourage utility agencies to use existing transmission corridors for future power transmission line development” (City of Oroville 1995). Therefore, the project route would be consistent with the City of Oroville General Plan and zoning designations for the areas through which it would traverse.

CPUC General Order

Projects that maintain electrical facilities are generally exempt from local land use and zoning regulations. However, CPUC General Order No. 131-D, Section III C (CPUC 1995) requires “the utility to communicate with, and obtain the input of, local authorities regarding land use matters and obtain any non-discretionary local permits.”

Although the project would not be consistent with all of the general plan and zoning designations listed above, the applicant’s existing easement is already addressed in relevant land use plans. In addition, the CPUC has jurisdiction over the siting and design of the project. Therefore, no significant conflicts to land use planning have been identified and construction and operation of the project would result in a less than significant impact under this criterion.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NO IMPACT. A Yuba-Sutter Habitat Conservation Plan/ Natural Communities Conservation Plan (HCP/NCCP) area is currently in the planning stage (Sutter County Public Works 2009). The boundaries have not been determined. Though the project route would cross the proposed HCP/NCCP area (DFG 2001), the route is within an existing easement, and the HCP/NCCP area has not been adopted by local jurisdictions and wildlife agencies (i.e., the U.S. Fish and Wildlife Service and Department of Fish and Game). Therefore, the project would result in no impact under this criterion.

References

Butte County. 1979. Butte County General Plan, Land Use Element. http://www.buttecounty.net/dds/Planning/Documents.htm. Accessed June 15, 2009.

___________. 2008. Butte County Zoning Ordinance. http://www.buttecounty.net/dds/Documents/Documents.htm. Accessed June 15, 2009.

City of Oroville. 1995. City of Oroville General Plan. Accessed June 15, 2009.

CPUC (California Public Utilities Commission). 1995. Public Utilities Commission of the State of California, General Order No. 131-D. August 11.

DFG (California Department of Fish and Game). 2001. Natural Community Conservation Planning. http://www.dfg.ca.gov/habcon/nccp/status.html. Accessed July 7, 2009.

Sutter County. 1996. Sutter County General Plan. http://www.suttercounty.org/doc/government/depts/cs/ps/cs_planning_services. Accessed June 15, 2009.

___________. 2008. Sutter County Zoning Code. http://www.suttercounty.org/doc/government/depts/cs/ps/cs_planning_services. Accessed June 15, 2009.

Sutter County Public Works. 2009. Community Services-Environmental Health Department, Yuba City, CA. http://www.co.sutter.ca.us/doc/government/depts/depts_home. Accessed June 22, 2009.

Yuba County. 1990. East Linda Specific Plan. http://yuba.org/Departments/Community%20Development/Planning/Specific%20Plans/East%20Linda/default.aspx. Accessed June 15, 2009.

___________. 1993. Plumas Lake Specific Plan. http://www.yuba.org/Departments/Community%20Development/Planning/Specific%20Plans/Plumas%20Lake. Accessed June 15, 2009.

___________. 1996. Yuba County General Plan. http://www.co.yuba.ca.us/departments/Community%20Development/Planning/Default%20Pages/yubacountygeneralplan.aspx. Accessed June 15, 2009.

___________. 2008. Yuba County Zoning Ordinance. http://www.co.yuba.ca.us/departments/bos/documents/ordinance. Accessed June 15, 2009.

3.11 Mineral Resources

Table 3.11-1 Mineral Resources Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

3.11.1 Setting

The project route would extend just over 40 miles and pass through unincorporated and incorporated areas of Butte, Yuba, and Sutter counties. Mineral resources along the project route consist of oil and gas and deposits of rock, sand, and gravel (CGS 2002; DOGGR 2001; DOGGR 2008).

Regulatory Setting

Under the California State Surface Mining and Reclamation Act of 1975, Mineral Resource Zones (MRZs) are classified by the State Geologist to classify land according its level of significance as a mineral resource. MRZs are used to help identify and protect state mineral resources from urban expansion or other irreversible land uses that might preclude mineral extraction. The MRZ categories used to classify land include:

- SZ: Areas containing unique or rare occurrence of rocks, minerals, or fossils that are of outstanding scientific significance.
- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- MRZ-2a: Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present.
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present.
- MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.

In Butte County, the State Geologist has not yet mapped mineral resources (Butte County 2007). No MRZ designations have been identified within the County. The State Geology Board is currently reviewing petitions for the classification of two locations in Butte County, but the project route does not cross either of them (Butte County 2007).

In Yuba County, the Yuba Goldfields area and the Western World Mining Company Copper-Zinc Deposit have been classified under the MRZ system. The Yuba Goldfields area is classified MRZ-2 for its cement and concrete aggregate deposits. The Yuba Goldfields area extends from the town of Smartville west to Marysville and would be crossed by the project route. The point at which the project route would cross the Yuba Goldfields area is at the Yuba River. Yuba County, in addition to recognizing MRZ classifications, has acknowledged that the Yuba Goldfields area is a locally-important mineral resource. The Western World Mining Company Cooper-Zinc Deposit would not be crossed by the project route (Yuba County 1996; 2008).

No significant or substantial mineral deposits have been identified within Sutter County (Sutter County 2008).

3.11.2 Environmental Impacts and Mitigation Measures

a. Would the project 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?

LESS THAN SIGNIFICANT. Mineral extraction operations exist near the project area; however, the only segment of the project route that would cross a known mineral resource is near Marysville at the Yuba Goldfields area. The area is designated MRZ-2, but no mineral extraction is currently underway. Construction and operation of the project would not obstruct or affect future ability to access the deposits. There are no productive oil or coal developments or geothermal resources along the project route. Additionally, the project involves the reconstruction of an existing transmission line along an existing right-of-way. Therefore, the project would not result in the loss of availability of a known mineral resource, and impacts would be less than significant under this criterion.

b. Would the project 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?

LESS THAN SIGNIFICANT. The only segment of the project route that would cross a known mineral resource is at the Yuba River, which is part of the Yuba Goldfields area. Though Yuba County has acknowledged that the Yuba Goldfields area is a locally-important mineral resource, the project route does not cross the Yuba Goldfields area at a location that is currently used to extract mineral resources. In addition, since the project involves the reconstruction of an existing transmission line along an existing right-of-way, the crossing is not new. It is part of the existing system. Therefore, the project would not result in the loss of availability of a locally-important mineral resource recovery site, and impacts would be less than significant under this criterion.

References

Butte County. 2007. Butte County General Plan Update 2030, Setting and Trends Report. http://www.buttegeneralplan.net/products/SettingandTrends/default.asp. Accessed November 6, 2008.

CDC (California Department of Conservation). 2000. California Surface Mining and Reclamation Policies and Procedures: State Mining and Geology Board in cooperation with Office of Mine and Reclamation and Division of Mines and Geology, Special Publication 5. Third Revision, January.

__________. 2007. Executive Officer's Report, Agenda Item No. 7: Report on the Mineral Land Classification and Designation Program Under the Surface Mining and Reclamation Act of 1975: State Mining and Geology Board. June 14.

CGS (California Geologic Survey). 2002. California Geomorphic Provinces: California Geological Survey Note 36.

City of Oroville. 2008. Oroville 2030 General Plan, Public Review Draft. http://www.cityoforoville.org/index.aspx?page=302. Accessed November 6, 2008.

DOGGR (California Division of Oil, Gas, and Geothermal Resources). 2001. Online Oil and Gas and Geothermal Maps. http://www.consrv.ca.gov/DOG. Accessed November 6, 2008.

__________. 2008. Geothermal Map of California: Department of Conservation, Map 617.

Sutter County. 2008. General Plan Update: Technical Background Report.

Yuba County. 1996. Yuba County General Plan.

__________. 2008. General Plan Update: Technical Background Report.

3.12 Noise

Table 3.12-1 Noise Checklist

Would the project:	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?	☐	☐	☒	☐

3.12.1 Setting

Noise Fundamentals

Human response to noise varies depending on the person and the setting and activity in which the person is engaged while exposed to environmental noise. Certain land use types are more sensitive to noise exposure. Noise-sensitive receptors can be defined as locations where noise may interfere with people's primary activities. These locations, or receptors, include places where people sleep, such as residences and hospitals as well as schools, libraries, parks, recreation areas, business offices, and places of worship during hours of operation or primary use.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-decibel (dB) changes in sound levels when exposed to steady, single-frequency tones in the mid-frequency (1,000–8,000 Hertz [Hz]) range. However, it is widely accepted that in typical real-world environments, people are able to begin to detect sound level increases of 3 dB. Whereas a 10-dB increase is generally perceived as a doubling of loudness, a doubling of sound energy (i.e., doubling the volume of traffic on a highway or two pieces of the same model of construction equipment versus one) will produce a 3-dB change and would generally be perceived as detectable. A five-dB change, however, is generally considered to be a substantially noticeable change above the existing noise environment.

To account for the fact that human hearing does not process all frequencies equally, an A-weighting (dBA) scale was developed. Depending on the specific frequency value, the dBA scale deviates from the "linear" dB scale.

To characterize the average ambient noise environment in a given area, noise level descriptors are commonly used. The Leq, or Sound Equivalent Level, is generally used to characterize the average sound energy that occurs during a relatively short period of time, such as an hour. Two other descriptors, the Ldn (Day-Night Level) and CNEL (Community Noise Equivalent Level), would be used for an entire 24-hour period. The value of the Ldn and CNEL are generally within one dB of each other and, therefore, will be used interchangeably in this analysis. Both the Ldn and CNEL noise metric descriptors place a stronger emphasis on noise that occurs during nighttime hours (10 p.m. to 7 a.m.) by applying a 10-dB "penalty" to those hours, with the difference being that the CNEL also applies a 5-dB "penalty" to the evening hours of 7 p.m. to 10 p.m.

Existing Conditions

The project spans three counties (Butte, Yuba, and Sutter) and the project alignment extends just over 40 miles. Primary noise sources within the project vicinity include traffic on local two-lane roads; traffic from California Highways 20, 70, and 65; train activity along Union Pacific railroad tracks; and aircraft flyovers to and from Beale Air Force Base in Yuba County, the Yuba County Airport, the Sutter County Airport, and Siller Bros Inc. Aviation (a private airstrip).

Existing ambient sound levels in the project area are typical of a rural environment, where sounds levels typically range from 40 to 60 dBA during the day and 20 to 45 dBA at night. Ambient levels within more densely populated areas, such as Marysville, closer to highways, or under the flight paths of aircraft would be relatively higher.

Regulatory Setting

Federal, state, and local bodies of government establish regulations and guidance to control excessive noise and reduce disturbance due to noise to a level that is acceptable within their jurisdiction. While federal and state laws regulate transportation noise, establish "normally" and "conditionally" acceptable exterior noise limits based on land-use type, and establish maximum acceptable interior noise limits for residences, federal and state provisions do not regulate noise from temporary construction activities. This type of noise is generally regulated at the local or county level.

Yuba County

The goals of the noise element of the Yuba County General Plan (Yuba County 1980) are to identify existing and potential noise sources within the community, identify strategies to minimize residents' exposure to noise, and mitigate noise impacts to the extent feasible. Beyond characterizing existing noise sources in the community, these goals are achieved by setting provisions for acceptable noise exposure to areas within the county, based on their land use. The Yuba County noise ordinance is the primary enforcement tool for the operation of locally regulated noise sources, such as mechanical equipment and construction activity, and is set forth in Chapter 8.20 in the Yuba County Code (Yuba County 1980).

Goals and policies of the Yuba County noise ordinance related to environmental noise are as follows:

> **Goal NOI-YB-1:** To control unnecessary, excessive, and annoying noise.
>
> **Policy NOI-YB-1:** Prohibit such noise generated from or by all sources subject to its police power as specified in Chapter 8.20. To this end, the County has identified exterior noise exposure standards, which are shown in Table 3.12-2.

Table 3.12-2 Yuba County Noise Level Standards

Zone Permitted	Time	Sound Level	Maximum Noise Level
Multi-Family Residential	10 p.m. to 7 a.m.	45	55
	7 p.m. to 10 p.m.	50	60
	7 a.m. to 7 p.m.	55	65
Multi-Family Residential	10 p.m. to 7 a.m.	50	60
	7 a.m. to 10 p.m.	55	65
Commercial	10 p.m. to 7 a.m.	55	65
	7 a.m. to 10 p.m.	60	70
M1 (General Industrial Zone)	Anytime	65	75
M2 (Extractive Industrial Zone)	Anytime	70	80

Source: Yuba County Noise Ordinance (Yuba County Code, Chapter 8.20)

Section 8.20.310 pertains to construction noise. The ordinance states that it is unlawful to operate equipment within a 500-foot radius of a residential zone between the hours of 10 p.m. to 7 a.m. (nighttime hours) "in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless a permit has been duly obtained."

Section 8.20.710 explains the procedural process by which a project applicant may apply to the Department of Planning and Building Services for an exemption authorized by permit when immediate compliance is impractical or unreasonable (providing the project does not exceed 6 months).

City of Marysville Municipal Code

Because Marysville is an incorporated city, it has established separate provisions that relate to noise regulation. Chapter 9.09 of the Marysville Municipal Code (City of Marysville 1991) lays forth procedural provisions for police response to loud and unreasonable noise. However, noise level standards are not set and noise due to construction activity is not addressed.

Sutter County

The goal of the noise element of the Sutter County General Plan (Sutter County 1996) is to protect county residences from the harmful effects of exposure to excessive noise. The policy stated to implement this goal is to not allow development of new noise-sensitive land uses where the existing ambient level due to noise sources would exceed acceptable limits as set forth by the County. Sutter County has not adopted a noise ordinance, and noise due to construction activity is not addressed.

Butte County

The goals of the noise element of the Butte County General Plan (Butte County 1977) are to secure and maintain an environment free from annoying noise, to provide information concerning the community noise environment, and to make noise a consideration in the on-going planning process and the development of ordinances relating thereto. Butte County has not adopted a noise ordinance, and noise due to construction activity is not addressed.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on noise. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM NOISE-1: Employ Noise-Reducing Construction Practices During Temporary Reconstruction Activities

3.12.2 Environmental Impacts and Mitigation Measures

a. Would the project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

LESS THAN SIGNIFICANT. No additional pieces of operational equipment are proposed at the substations along the transmission line, and the transmission lines that would replace existing ones are of the same voltage. Therefore, there would be no impact from operation of the project under this criterion. High noise levels associated with the use of equipment, including helicopters, for construction of the project would result in short-term temporary impacts. As discussed under item "d" below, however, construction impacts under this criterion would be less than significant.

b. Would the project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, the type of equipment creating vibration, and the soil conditions surrounding the construction site. Ground vibration from construction equipment could be perceptible to receptors in the immediate vicinity of the construction activity. For example, the tamping of ground surfaces, the passing of heavy trucks on uneven surfaces, and the excavation of vaults and/or trenches could each create perceptible vibration in the immediate vicinity of the activity. Impacts from construction-related groundborne vibration would be short-term and confined to the immediate area surrounding the activity (not likely to exceed approximately 25 feet). No major work at the substations would be done as a part of the project. Minor relay replacement or setting changes may be required. All work would be within the existing substation control buildings. Therefore, impacts under this criterion would be less than significant.

c. Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

NO IMPACT. No additional pieces of operational equipment are proposed at the substations along the transmission line, and the transmission lines that would replace existing ones are of the same voltage. Because no new operational noise sources would be associated with the proposed project, no substantial permanent increase in ambient noise levels would occur due to its implementation. Therefore, there would be no impact under this criterion.

d. Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT. Construction noise associated with the replacement of existing steel towers, construction of temporary access roads, and limited improvements to permanent access roads would represent a short-term impact on ambient noise levels.

Proposed pieces of construction equipment and the typical dBA noise levels associated with their use (as measured at 50 feet) are presented in Table 3.12-3. Assuming a scenario under which multiple pieces of the loudest equipment (excluding helicopter operations) are used, reasonable upper-bound noise levels (based on distance to nearest receptor) due to construction activities were predicted using methods recommended by the Federal Transit Administration (FTA 2006). Table 3.12-4 summarizes the results of this analysis.

Table 3.12-3 Proposed Construction Equipment Types and Typical Noise Emission Levels

Equipment	Typical Noise Level 50 Feet from source (dBA)
Backhoe	78
Concrete mixer truck[2]	76
Crane	81
Pick-up truck	55
Dump truck	76
Equipment/tool van[1]	55
Dozer	82
Water truck[2]	76
Grader	85
Rock transport[2]	76
Roller	80
Hole auger	84
Line truck and trailer[1]	55

Source: FHWA 2006
Notes:
1 Based on noise level for pick-up truck
2 Based on noise level for dump truck

Table 3.12-4 Predicted Construction-Related (Non-Helicopter) Upper Bound Noise Levels Along the Project Route

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
50	0	0	89	85
100	-6	-2	81	77
200	-12	-4	74	70
300	-16	-5	69	65
400	-18	-6	66	62
500	-20	-6	63	59
600	-22	-7	61	57
700	-23	-7	59	55
800	-24	-7	58	54
900	-25	-8	56	52
1000	-26	-8	55	51
1200	-28	-9	53	49

Table 3.12-4 Predicted Construction-Related (Non-Helicopter) Upper Bound Noise Levels Along the Project Route

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
1400	-29	-9	51	47
1600	-30	-9	50	46
1800	-31	-10	49	45
2000	-32	-10	47	43
2500	-34	-10	45	41
3000	-36	-11	43	39

Source: Calculations based on data from FTA 2006.
Note: This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers that may further reduce noise levels.

As described in Chapter 1.0, Background Information, helicopters may be used to install poles and replace transmission towers when the use of cranes is not feasible. A large single-rotor helicopter such as the Bell 214 produces a maximum sound level of about 79 dBA at a distance of 500 feet under level flight conditions (Nelson 1987). This corresponds to a sound level of about 93 dBA at 100 feet. A small single-rotor helicopter such as the Hughes 500 produces a maximum sound level of 75 dBA at a distance of 500 feet under level flight conditions (Nelson 1987). This corresponds to a sound level of about 89 dBA at 100 feet. Helicopters could produce noise in the range of 89 to 93 dBA in the vicinity of residences that are located as close as 100 feet to helicopter staging areas. Noise from helicopters operating above pole installation locations could be as close as about 250 feet to residences. At this distance helicopter noise levels could be in the range of about 83 to 87 dBA.

With land-based construction activities located as close as 25 feet to noise-sensitive receptors, land-based construction noise levels could be as high as 91 dBA at these locations. This analysis indicates that there is potential for construction noise from both land-based construction activities and helicopter activities to exceed the Yuba County daytime noise standard of 55 dBA and to result in a substantial temporary increase in noise.

Nighttime construction (construction between 7:00 pm and 7:00 am) is also proposed as part of the project (Section 1.8.5.8). To limit potential noise impacts, nighttime work would only be undertaken between June and October and would not be undertaken in *urban areas* (Section 1.8.5.8). In addition, the only construction activities that would occur at night would be those required to raise towers, and the majority of construction staging activities, including onsite and offsite vehicle movement, would occur during the day.

APM NOISE-1 would reduce impacts from both day and nighttime construction. While it may not be feasible in all cases to reduce noise to a level that is in compliance with applicable noise standards, given the very short duration of construction activity at any one location, impacts under this criterion would be less than significant with the implementation of APM NOISE-1.

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?

LESS THAN SIGNIFICANT. Beale Air Force Base is located approximately 3.5 miles from the proposed project route; the Yuba County Airport is approximately 0.75 miles from the proposed route; and Sutter County Airport is approximately 3 miles from the proposed route. Although noise from aircraft operations could occur along the proposed project route during construction, the temporary nature of construction work would limit the amount of noise exposure that workers along the proposed route would experience. In addition, it is assumed that workers would use noise safety gear during construction of the project. Therefore, impacts would be less than significant under this criterion. Impacts from helicopter use for construction of the project are discussed above under item "d."

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?

LESS THAN SIGNIFICANT. Siller Bros Inc. Aviation, a private airstrip, is located within 2 miles of the proposed project route. However, due to the distance between the project route and the airport, infrequent flights at the airport, and light aircraft that take off and land there, people residing or working along the project route would not be exposed to excessive noise levels. Therefore, people residing or working along the project route would not be exposed to excessive noise levels from air traffic, and impacts would be less than significant under this criterion. Impacts from helicopter use for construction of the project are discussed above under item "d."

References

Butte County. 1977. Butte County General Plan.

City of Marysville. 1991. Marysville City Municipal Code, Chapter 9.09.

FHWA (Federal Highway Administration). 2006. FHWA Roadway Construction Noise Model User's Guide. Washington, D.C.

FTA (Federal Transit Administration). 2006. Transit Noise and Vibration Impact Assessment. Washington, D.C.

Nelson, P. M. 1987. Transportation Noise Reference Book. London: Butterworths & Co.

Sutter County. 1996. Sutter County General Plan, Section 8: Noise.

Yuba County. 1980. Yuba County General Plan, Noise Element.

This page intentionally left blank

3.13 Population and Housing

Table 3.13-1 Population and Housing Checklist

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?	☐	☐	☐	☒

3.13.1 Setting

The project route would extend just over 40 miles and pass through unincorporated and incorporated areas of Butte, Yuba, and Sutter counties. The regional area is presently experiencing population and housing increases due to a regional transition from agricultural use to major residential and commercial development use. As a result, there has been substantial population growth in the region, which has created a need to meet immediate and future electrical power demand. The Sacramento Area Council of Governments (SACOG) prepares long-term job, population, and household projections based on U.S. Census data in 5-year increments to 2050. The 2000 U.S. Census reported that the population of Butte County was 204,065, Yuba County 60,598, and Sutter County 79,632 (U.S. Census Bureau 2000).

Projections from the California Department of Finance (CDF) and SACOG forecast that current growth will continue at an increasing rate based on national and state data (Table 3.13-2). By 2030, the populations of Butte, Yuba, and Sutter counties are projected to increase by 47 percent, 129 percent, and 69 percent, respectively. The projected increase in housing needs for the region is expected to correlate to increased population projections. The report, *Projections of Employment, Population and Household Income in the SACOG Region for 2000–2050,* includes data projections for Sutter and Yuba Counties (SACOG 2005). Butte County data was extracted from the Butte County Association of Governments (BCAG) Regional Growth Projections report. Tables 3.13-3 and 3.13-4 present U.S. Census information on housing units, vacancy, total employment, and construction trade employment in the regional area for the three counties.

Table 3.13-2 Regional Population Trends

	2000 Census	2010 Projection	*Projected Growth 2000–2010*		2020, Projection	*Growth,* 2010–2020	2030, Projection	*Growth*, 2020–2030
			Number	Percent				
Regional Population and Growth Projections								
Butte County	204,065	230,116	26,051	13%	281,442	51,326	334,842	53,400
Yuba County	60,598	80,411	19,813	33%	109,216	28,805	137,322	28,106
Sutter County	79,632	102,326	22,694	28%	141,159	38,833	182,401	41,242

Table 3.13-2 Regional Population Trends

	2000 Census	2010 Projection	*Projected Growth* 2000–2010		2020, Projection	*Growth,* 2010–2020	2030, Projection	*Growth*, 2020–2030
			Number	Percent				
Household Projections								
Butte County	85,523	99,655	14,132	17%	118,271	18,616	137,266	18,995
SACOG[1] (Yuba)	58,885	71,668	12,783	22%	*Regional household growth projection increase of 500,000 or 70% between 2000 and 2030.*			
(Sutter)	77,547	95,041	17,494	23%				

Sources: BCAG 2006, CDF 2007, CDF 2009, SACOG 2005
Note:
[1] SACOG data for 2000 and 2009.

Table 3.13-3 Housing in the Project Area

Location	Housing Units (U.S. Census 2000)		Housing Units (SACOG 2009)[1]
	Total Units	Vacancy Rates	Total Units
Butte County	85,523	7%	N/A
Yuba County	22,636	11.4%	28,016
Sutter County	28,319	6.8%	33,681

Sources: U.S. Census Bureau 2000; SACOG 2005
Note:
[1] Projected for 2009.

Table 3.13-4 Employment in the Project Area

Location	Employment (Year 2000)		
	Total Employed	In Construction Trades	Unemployment Rate
Butte County	91,098	5,226	5.3 %
Yuba County	32,227	3,430	10.9%
Sutter County	43,080	3,611	10.6%

Source: U.S. Census Bureau 2000

The general plans of Butte, Yuba, and Sutter Counties include policies that address housing, employment, and growth management and the adequate provision of facilities and services. The Butte County General Plan Land Use Element includes a number of goals and policies to encourage continuous analysis of population trends that allow sites and facilities for population growth of the counties, encourage development in and around existing communities with public facilities, and encourage expansion, construction and efficiency of hydroelectric power plants (Butte County 2007).

The BCAG Final Regional Housing Needs Plan describes the impact of projected job growth for an increased amount of housing to meet the needs of present and future employees in Butte County (BCAG 2007). The Yuba County General Plan Housing Element goal addresses the identification of adequate sites with appropriate zoning, development standards, services and facilities to encourage the development of a variety of types of housing and includes land use zoning changes to encourage residential use in former commercial and agricultural zones (Yuba County 2008). The Sutter County General Plan includes goals for the County to require that adequate public facilities and services be available to serve new development and policies that address the direction of new urban and suburban residential development where adequate public facilities and services are available (Sutter County 2008).

The applicant estimates that approximately 160 construction workers over the full phased construction period would be required for approximately 12 to 18 months. The applicant intends to hire project construction workers from the regional labor pool. The applicant does not expect that relocation and permanent housing options will be required for project workers (PG&E 2009).

Construction of the proposed steel towers and replacement of the conductors would result in an increase in the existing rating of the transmission lines to 825 amps normally and 975 amps under emergency conditions. The applicant has stated that the location of distribution facilities have been designed to allow for future population growth and has assessed that current load increases are due to greater customer demand within the region. The reconductoring and replacement of existing infrastructure would be conducted in response to future growth.

Additionally, SACOG acknowledges that increased urbanization of rural areas and population growth increases are a result of both natural increases and migration into the area. Regional household projected growth is expected to increase by 70 percent between 2000 and 2030 (SACOG 2005). The projections report acknowledges the need to increase infrastructure facilities and services to support population growth.

3.13.2 Environmental Impacts and Mitigation Measures

a. Would the project 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)?

*LESS THAN SIGNIFICANT***.** The project is an upgrade to existing infrastructure. The intent of the project is to increase the reliability of existing electrical supply to accommodate existing and planned growth projected by the jurisdictions of Butte, Sutter, and Yuba counties. It would not induce population growth in the region but would be growth accommodating. The availability of electrical capacity does not normally ensure or encourage growth. Other factors such as economic conditions, population trends, availability of public services (e.g., water and sewer) have a more direct effect on growth. Growth is anticipated and planned in the project area through applicable local planning policies and zoning ordinances. Reconstruction of the transmission lines would allow the applicant to continue to provide safe and reliable electrical services and to meet existing peak load demand requirements.

Construction of the proposed steel towers and replacement of the conductors would require approximately 160 construction workers over the full phased construction period of approximately 12 to 18 months. Construction work is expected to provide short-term employment opportunities to the present population base. Additional employees would not be required for operation of the project. During the construction phase, the need for temporary accommodations would be met within the regional area.

As shown in Table 3.13-4, a relatively large construction workforce is available within the regional area. Most project construction workers are expected to originate from the regional labor pool and would not generate a permanent increase in population levels or result in a decrease in the availability of permanent housing. Operation of the project is not expected to result in a significant increase in the local population or housing market and would not indirectly induce growth by creating permanent new opportunities for local industry. Therefore, a less than significant impact would result from construction of the project and no impact would result from operation of the project under this criterion.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

NO IMPACT. The project would traverse entirely through existing transmission line easements. No existing housing would be displaced. The project work would take place entirely within existing and/or acquired right-of-ways. The project represents improvements to existing transmission lines and would strive to increase the reliability of the existing electrical supply. No existing housing would be displaced at the proposed staging areas, work sites, or locations along the transmission alignment. Implementation of the project would not result in the displacement of housing nor would it necessitate the construction of any replacement housing; therefore, no impact would result from construction and operation of the project under this criterion.

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

NO IMPACT. As previously stated, the project would not result in the displacement of any housing or businesses because there is no housing currently located within the applicant's easements. Implementation of the project would not result in the displacement of people, nor would it necessitate the construction of replacement housing elsewhere; therefore, no impact would result from the construction and operation of the project under this criterion.

References

Butte County. 2007. Butte County General Plan Settings and Trends Report Public Draft. Prepared by Design, Community & Environment. August 2.

Butte County Association of Governments (BCAG). 2006. BCAG Regional Growth Projections 2006–2030. http://www.bcag.org/Demographics/Growth-Projections/index.html. Accessed June 15, 2009.

__________.2007. 2007 Regional Housing Needs Plan. http://www.bcag.org/Planning/2007-Regional-Housing-Needs-Plan/index.html. Accessed August 5, 2009.

California Department of Finance (CDF). 2007. *Population Projections for California and its Counties 2000–2050.* Sacramento, California. July. http://www.dof.ca.gov/research/demographic/reports/projections/p-1. Accessed June 15, 2009.

__________. 2009. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001–2009, with 2000 Benchmark. Sacramento, California. May.* http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2009*. Accessed June 15, 2009.*

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo-East Nicolaus 115 kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services, by ICF Jones & Stokes. February.

Sacramento Area Council of Governments (SACOG). 2005. Projections of Employment, Population and Household Income in the SACOG Region for 2000–2050. Sacramento, California. September 15. http://www.sacog.org/demographics/projections. Accessed June 4, 2009.

Sutter County. 2008. Sutter County General Plan Update Technical Background Report: Housing Element. Prepared by PBS&J. February.

U.S. Census Bureau. 2000. American Fact Finder, Fact Sheet, Census Demographic Profile Highlights. Population and other statistics for Butte, Yuba, and Sutter Counties, California. http://www.factfinder.census.gov. Accessed August 7, 2009.

Yuba County. 2008. Yuba County General Plan Update Background Report: Housing Element. December.

This page intentionally left blank

3.14 Public Services

Table 3.14-1 Public Services Checklist

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

3.14.1 Setting

This section discusses public services including fire protection, police protection, schools, parks, and other public facilities, which are provided and maintained by a variety of local and/or regional entities. The environmental setting and evaluation of impacts to park and recreational facilities are discussed in Section 3.15, Recreation. The project route traverses Butte, Yuba, and Sutter counties. In Butte County, the City of Oroville is near the project route. Details related to the various jurisdictions are outlined below.

Fire Protection

Butte County

The Butte County Fire Department operates 42 fire stations, two of which would serve the portions of the project route located in Butte County (Butte County 2008a).

Station 72, Palermo

Station 72 is located at 2290 Palermo Road in the unincorporated town of Palermo and would serve the portion of the project route within the vicinity of Palermo. Station 72 is staffed with two firefighters 24 hours per day, 7 days per week. The station houses one engine that is often used to assist Station 74 with its duties. The estimated response time to the portion of the project route served by Station 72 would be 4 minutes maximum (Butte County 2008a).

Station 74, Gridley

Station 74 is located at 47 East Gridley Road in the unincorporated town of Gridley and would serve the project route from south of Palermo to the Yuba County border. The Station is staffed by four personnel: two are assigned to each of the station’s two engines 24 hours per day, 7 days per week. Station 72 assists Station 74 with calls, meaning that three engines often arrive on site to high-priority incidents. Station 74’s response time to service areas along the project route would be approximately 9 to 10 minutes (Butte County 2008a).

City of Oroville

Although the City of Oroville (City) has its own fire department, fire service for certain portions of the City are provided by Butte County. Specifically, the portion of the project route within the City of Oroville would receive fire protection services from the Butte County First Station 72 (Palermo) described above. The estimated response time of Station 72 staff to the portion of the project route within the Oroville service area would be between 2 and 5 minutes (City of Oroville 2008b).

Yuba County

The following fire stations would serve the areas of Yuba County crossed by the project route:

Olivehurst Fire Department

The Olivehurst Fire Department (Department) is located at 1962 Ninth Avenue in the unincorporated town of Olivehurst. The Department is staffed by four captains, a chief, and seasonal employees. The Department is charged with protecting the small portion of the project route that traverses the unincorporated town of Olivehurst. The Department estimates a response time of 30 seconds for the portion of the project route for which it is responsible (Olivehurst Fire Department 2008).

Linda Fire Department

The Linda Fire Department provides fire protection and emergency medical services to a 52-square-mile area, covering the unincorporated towns of Linda, Arboga, and Plumas Lake. Station 5, located at 1286 Scales Avenue, Marysville, would be responsible for providing fire protection to areas along the project route that traverse the Linda Fire Department's service area. The estimated response time to service areas along the project route is 3 minutes (Linda Fire Department 2008).

Wheatland Fire Department

The Wheatland Fire Department has three stations that serve the southern portion of Yuba County. Station 1, located at 4514 Darry Road in Wheatland, would serve areas along the project route that pass through the Wheatland Fire Department's service area. The estimated response time to service areas along the project route would vary between 4 to 9 minutes depending on the distance from the Station (Wheatland Fire Department.2000).

Marysville Fire Department

The Marysville Fire Department serves an 85-square–mile area that includes Marysville, Hallwood, and surrounding areas. The station located at 107 Ninth Street in Marysville serves areas along the project route north of Marysville to the Butte County border. Response time to these areas is estimated to be 15 minutes (Marysville Fire Department 2008).

Sutter County

The East Nicolaus Fire Department, located at 1988 Nicolaus Avenue in the unincorporated town of East Nicolaus, would serve areas along the project route in Sutter County. The station is staffed by 12 volunteer firefighters. None of these volunteer firefighters staff the station on a regular basis but instead are on-call, responding to incidents as needed. One paid firefighter is staffed at the station during harvest season, which runs from June to the end of October. During this period, this firefighter is on duty from 8 a.m. to 5 p.m.

Response time would vary depending on the call's location. The maximum estimated response time is 16 minutes. Certain volunteer firefighters could arrive at the incident sooner if they live close to the incident.

In addition, if the incident is close to the Yuba County border, the East Nicolaus Fire Department could ask for assistance from the Wheatland Fire Department, which might also reduce response time (East Nicolaus Fire Department 2008).

Police Protection Services

Butte County

The Butte County Sheriff serves that portion of the project route within unincorporated Butte County. The Sheriff's main office is located at 33 County Center Drive in Oroville. Although a sheriff substation is also located in the vicinity of the project route at 2094 Palermo Road in Palermo, service calls are not handled at the substation. Depending on an incident's proximity to the City of Oroville, the Butte County Sheriff's Office may contact the Oroville Police Department to assist with a call.

The number of officers patrolling the area in the project vicinity would depend on the time of day. Four deputies and a sergeant patrol the County during the day. After 3 a.m., staffing drops to two deputies and a sergeant. Call response time is difficult to predict because the patrolling officers' locations vary widely. The response time to calls from service areas along the project route could be several minutes or longer, depending on the location of the patrol officers when the calls are received and whether officers are already handling a call with a new call is received (Butte County 2008b).

City of Oroville

The Oroville Police Department provides police protection services within the portion of the project route within the Oroville service area. The Oroville Police Department headquarters is located at 2055 Lincoln Street in Oroville and is staffed by 23 sworn police officers, although it is budgeted for 27 police officers. Support staff are also housed in the department's headquarters. Response times to service areas along the project route would depend on the number of other calls already being handled, proximity of a patrol to the project route at the time, and the nature of the call (City of Oroville 2008a).

Yuba County

The Yuba County Sheriff provides police protection to service areas along the project route within Yuba County. The Sheriff's Department is headquartered at 215 Fifth Street, Suite 150, in Marysville, and is staffed by 55 patrol personnel. The estimated response time depends on the type of call received. If the call is the highest priority—a priority-one call—average response time is approximately 9 minutes. Response time for the lowest priority call could be as long as 30 minutes (Yuba County 2008a).

Sutter County

Areas along the project route in Sutter County would be served by the Sutter County Sheriff. The Sheriff's Department headquarters, located at 1077 Civic Center Boulevard in Yuba City, is staffed by 30 law enforcement deputies and K-9 units. Because the deputies patrol throughout the county, response times to service areas along the project route would depend on the number of patrols on-duty at the time of the incident, the nature of the incident, and the incident's proximity to Yuba City because the Sheriff's Office sometimes uses Yuba City Police officers to assist with calls. Given these factors, response times could vary from 15 to 30 minutes (Sutter County 2008).

Schools

The regional area is served by five school districts within Butte, Sutter and Yuba counties, including:

- Oroville Elementary District
- Oroville Union High School District,
- Marysville Joint Unified School District,
- Palermo Union School District, and
- Plumas Lake Elementary School District.

Each school district includes a number of schools that provide educational services for grades K through 12 students. The school nearest the project route in Sutter County is East Nicolaus High School (0.25 mile). Within Yuba County, the schools nearest the project route include Plumas Lake Charter School (0.25 mile), Linda Elementary School (0.125 mile), and Yuba Gardens Intermediate School (0.125 mile).

From north to south, the following schools would be within 2 miles of the project route: Las Plumas High School, Helen M. Wilcox Elementary School, Abright Start Preschool, Goldman Adventure Bible School, Honcut School, Cordua School, Kynoch Elementary School, Kynoch Preschool, McKenney Intermediate School, Anna Bell Karr School, Marysville Charter Academy for the Arts, Marysville High School, Linda Elementary School, Edgewater Elementary School, Ella Elementary School, Yuba Gardens School, Lindhurst High School, Olivehurst Elementary School, Arboga Elementary School, Plumas Lake Charter School, Rio Del Oro Elementary School, Riverside Intermediate School, Browns Elementary School, Three Rivers High School, Marcum-Illinois Union Elementary School, South Sutter Charter School, and East Nicolaus High School.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on public services. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM PS-1: Maintain secured facilities during construction activities

APM HAZ-5: Prepare a health and safety plan,

APM HAZ-6: Develop and implement a fire risk management plan

3.14.2 Environmental Impacts and Mitigation Measures

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a. Fire protection?

LESS THAN SIGNIFICANT. Construction and operation of the project would not be expected to increase the demand for fire protection services in the regional area. During construction of the project, emergencies could occur within the project vicinity and PG&E would incorporate safety measures into the project as well as coordinate with local agencies. APMs that would address safety include preparation of a health and safety plan (APM HAZ-5) and development and implementation a fire risk management plan (APM HAZ-6) as described in Section 3.8, Hazards and Hazardous Materials. In addition, road closures may occur; however, emergency vehicles would be provided access in the event of temporary freeway or road closures; the APMs associated with transportation are described in Section 3.16, Transportation and Traffic.

During operation of the project, the applicant would continue to implement their existing protection scheme and continue to employ a maintenance crew to provide ongoing inspection of the facilities (APM PS-1). The maintenance crew would look for any vandalism, safety, security, maintenance, and reliability issues along the project route.

The maximum emergency response times for fire services to areas along the project route are as follows: 10 minutes for Butte County, 5 minutes for the City of Oroville, 15 minutes for Yuba County, and 16 minutes for Sutter County, respectively. However, the safety features that would be incorporated into the project would reduce the demand for emergency services during construction and operation. Therefore, impacts on fire protection and response times would be less than significant.

b. Police protection?

LESS THAN SIGNIFICANT. Construction activities associated with the project would not be anticipated to increase the demand for police protection services in the regional area. The existing substation and switching station would remain fenced and locked to prevent unauthorized entry. In order to prevent unauthorized structure access from the ground, the first climbing steps or pegs for the tubular steel poles and the wood poles would be located approximately 10 to 12 feet above the ground. In addition, the applicant would continue to implement the existing protection scheme and continue to employ a maintenance crew to provide ongoing inspection of the facilities. During operation of the project, the maintenance crew would look for any vandalism, safety, security, maintenance, and reliability issues along the project route.

The maximum emergency response times for police services would be up to 30 minutes along the project route. However, the safety features that would be incorporated into the project would reduce the demand for emergency services during construction and operation. Therefore, impacts on police protection and response times would be less than significant.

c. Schools?

NO IMPACT. Construction of the project would require approximately 160 workers during peak activity. These construction personnel would likely commute from within Butte, Sutter, or Yuba counties or nearby counties and would not create a permanent change in local population (Section 3.13, Population and Housing). Upon completion, the project would be automated and require no additional employees for operation and maintenance. Since the project would not result in an increase in population during or after construction and would not increase the demand for school services, there would be no impact on schools.

d. Parks?

NO IMPACT. Park facilities in the regional area are described in Section 3.15, Recreation. The project would not increase population during or after construction that could increase the demands on existing parks, and no new or altered park or recreational facilities would be required. No impacts on parks would result from construction and operation of the project.

e. Other public facilities?

NO IMPACT. The project would not result in an increase in population during or after construction and, therefore, would have no impact on other public facilities.

References

Butte County Fire Rescue. 2009. http://buttefire.org. Accessed June 26, 2009.

Butte County. 2008a. Personal Communication with Russ Fowler, Battalion Chief, Butte County Fire Department, ICF Jones & Stokes, October 29.

Butte County. 2008b. Personal Communication with Andrew Wetter, Butte County Sheriff's Office, ICF Jones & Stokes, October 23.

City of Oroville. 2008a. Personal Communication with Trish Briel, Administrative Assistant, Oroville Fire Department, ICF Jones & Stokes, October 24.

City of Oroville. 2008b. Personal Communication with Ryan Silva, Firefighter, Oroville Fire Department, ICF Jones & Stokes, October 23.

East Nicolaus Fire Department. 2008. Personal Communication with Richard Herrington, Chief, ICF Jones & Stokes, October 29.

Linda Fire Department. 2008. Personal Communication with Tim Taylor, Captain, Linda Fire Department, ICF Jones & Stokes, October 24.

Marysville Fire Department, 2008. Personal Communication with Curt Williges, Chief, ICF Jones & Stokes, October 29.

Olivehurst Fire Department. 2008a. Personal Communication with Eric Miller, Captain, ICF Jones & Stokes, October 24.

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo-East Nicolaus 115 kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services, by ICF Jones & Stokes. February.

Sutter County. 2008. Personal Communication with Ida Loyd, Public Safety Dispatcher, Sutter County Police Department, ICF Jones & Stokes, October 29.

Wheatland Fire Department. 2008. Personal Communication with Arthur Paquette, Captain, ICF Jones & Stokes, October 24.

Yuba County. 2008. Personal Communication with Jerry Reed, Sheriff, Yuba County Sheriff's Department, ICF Jones & Stokes, October 29.

3.15 Recreation

Table 3.15-1 Recreation Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.1 Setting

The project passes within one half-mile of 10 public parks—nine in the City of Olivehurst and one in the City of Marysville. The project also passes within one half-mile of one private recreational facility and intersects with one private recreational facility, the Peach Tree Golf and Country Club. The locations of these facilities are shown in Table 3.15-2 below.

Table 3.15-2 Recreational Facility Locations

Miles to Transmission Line	Feet to Transmission Line	Jurisdiction	Facility Name
0.40	2092	City of Marysville	Gavin Park
0.02	102	Olivehurst Public Utility District	Community Park
0.49	2580	Olivehurst Public Utility District	Chestnut Park
0.28	1454	Olivehurst Public Utility District	Johnson Park
0.43	2296	Olivehurst Public Utility District	Rio Del Oro Park Site
0.46	2443	Olivehurst Public Utility District	Plumas Lake Park
0.29	1526	Olivehurst Public Utility District	Rio Del Oro Park 1
0.30	1579	COUNTY OF YUBA	Edgewater Park
0.29	1537	Olivehurst Public Utility District	Orchard Glen Park
0.50	2634	Olivehurst Public Utility District	Rolling Hills Park
.01	50	Private	Wyman Creek
0.00	Intersects With Transmission Line	Private	Peach Tree Golf and Country Club

Sources: Assessor's Parcels and County Land Use 2008, CPAD 2009, GNIS 2009

3.15.2 Environmental Impacts and Mitigation Measures

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

NO IMPACT. Population growth in a given area generally leads to increased use of recreational facilities, which can cause accelerated deterioration of the facilities. The project is not anticipated to induce population growth during or after construction (Section 3.13, Population and Housing); therefore, there would be no impact under this criterion.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

NO IMPACT. The project would not include recreational facilities or require the construction or expansion of recreational facilities. There would be no impact under this criterion.

References

Assessor's Parcels and County Land Use. 2008. Yuba and Sutter County GIS Departments. December.

California Protected Areas Database (CPAD). 2009. Greeninfo Network. March.

Geographic Names Information System (GNIS). 2009. U.S. Geological Survey Board of Geographical Names. April.

3.16 Transportation/Traffic

Table 3.16-1 Transportation/Traffic Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards 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 results 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. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

3.16.1 Setting

The project route would extend just over 40 miles and pass through Butte, Yuba, and Sutter counties including the City of Oroville. The project area is defined as the land within a 500-foot corridor of the two proposed transmission line segments. The applicant currently owns rights-of-way (ROWs) and easements along the entire project route. Additional overhang easements may be needed in some locations due to recent development on adjacent properties in the Marysville and Palermo areas. No major work at the substations will be done as a part of this project.

The transportation facilities in the project area include California State Routes and local access roads; railroads and waterways; bus, pedestrian and bicycle routes; and public and private airports. The project would not cross any federal roads.

State and Local Routes

The project area would be in proximity to the following three state routes. The California Department of Transportation (Caltrans) is the agency responsible for funding and maintaining state routes and highways within the State.

State Route (SR 20) serves commuter, commercial, agricultural, and recreational travel in Yuba County and as a regional east/west connection. It extends from west of Marysville through the Yuba County foothills and into Nevada County.

State Route (SR 65) serves both local and regional travel within Yuba County. It begins at Interstate 80 in South Placer County and extends to the north through downtown Wheatland, terminating at SR 70. SR 65 is a two-lane conventional highway from Wheatland to South Beale Road and a four-lane freeway north of South Beale Road to SR 70.

State Route (SR 70) serves both local and regional travel within Yuba County. It begins at SR 99 in Sutter County and extends to the north through Yuba County and into Butte County. It is a two- to four-lane conventional highway from Sutter/Yuba County Line to McGowan Parkway, where it becomes a four-lane freeway that extends into Marysville.

Project-area access road efficiencies were evaluated according to local circulation element guidelines that assign a Level of Service (LOS) rating based on factors such as speed, travel time, ability to maneuver, traffic interruptions, and safety. The majority of local access roadways in Butte, Yuba, and Sutter counties and the City of Oroville that would be used during construction are operating at an acceptable LOS C or better (Butte County 1984; City of Oroville 1995; Sutter County 1996; Yuba County 1996) with the exception of Simpson Lane in Yuba County, which operates at LOS D during p.m. peak-hour traffic volumes (Yuba County 2007).

Waterways and Railroads

The project route would cross several waterways (Figure 3.9-1). The project route would also parallel and cross Southern Pacific Railroad and Union Pacific Railroad lines. Crossing structures would be installed at all major roads, railroads, and other utility crossings along the project route to prevent injury or damage from the inadvertent falling of a conductor.

Southern Pacific Railroad lines extend through Sutter County east of Highway 70 from Sacramento County to Yuba City, and north of Yuba City to Butte County. The rail lines are available for the transport of agricultural goods and other materials. Rail passenger service is only available from Oroville by way of the Amtrak Coast Starlight. Union Pacific Railroad owns and operates two freight railroads for commodity transport in Yuba County.

Airports

There are several existing airport facilities in the project area. In Butte County, the Oroville Municipal Airport is located approximately 4.5 miles northwest from the project alignment in Palermo (Butte County). In Sutter County, the Sutter County Airport is located approximately 3 miles from the project route. In Yuba County, the Yuba County Airport is located approximately 0.75 miles west of the project route in the Town of Olivehurst, and the Beale Air Force Base is located approximately 3.5 miles from project route in the Town of Linda (Yuba County 1996). Siller Bros Inc. Aviation, a private airstrip, is located within 2 miles of the project route.

Alternate Modes of Transportation

There is a range of alternate modes of transportation within the project area. In addition to rail and air travel, there are local transit services for disabled and elderly residents; public and private buses; and infrastructure for pedestrians and bicycles.

The Butte County Association of Governments (BCAG) is the designated organization responsible for the preparation of all federal- and state-required transportation planning and programming documents for Butte County and the City of Oroville (BCAG 2004). The Sacramento Area Council of Governments (SACOG) is the Transportation Planning Agency designated by the Director of the Department of Transportation for the Sacramento Region, providing regional transportation planning and funding for Sutter County and Yuba County (SACOG 2009). At the local level, transportation planning is the responsibility of the three counties (Butte, Yuba, and Sutter) and the City of Oroville.

Regulatory Setting

Caltrans and Western Pacific / Union Pacific Railroad

The applicant would be required to obtain encroachment permits from Western Pacific / Union Pacific Railroad and Caltrans for railway and road crossings.

Sacramento Area Council of Governments

SACOG, which is an association of governments in the six-county Sacramento Region responsible for transportation planning and funding, has established a Congestion Management Program (CMP) for Yuba and Sutter counties as part of its Metropolitan Transportation Improvement Plan (SACOG 2009). The CMP is a countywide program designed to keep traffic congestion within an acceptable standard. The CMP must include traffic flow standards, standards for public transit service, a program to analyze the traffic impacts of land use decisions, a "trip reduction/travel demand" element to reduce vehicular use, and a 7-year capital improvement program.

Butte County

Chapter 14, Motor Vehicles and Traffic, of the Butte County Municipal Code addresses a range of traffic and transportation issues, including travel demand management and trip reduction, but does not include system performance measures. The Butte County General Plan, Transportation Element (Butte County 1984) addresses transportation planning in the County, and includes performance standards for the transportation circulation system. It also addresses congestion management.

Yuba County

Title IX, Vehicle and Traffic Codes, of the Yuba County Ordinance Code addresses a range of traffic and transportation issues, including travel demand management and trip reduction, but does not include system performance measures. The Yuba County General Plan, Transportation Element (Yuba County 1996) addresses transportation planning in the county, and includes performance standards for the transportation circulation system. Congestion is addressed in the SACOG CMP for Yuba and Sutter counties.

Sutter County

Chapters 1100 to 1160, Traffic, of the Sutter County Municipal Code address a range of traffic and transportation issues, including travel demand management and trip reduction, but does not include system performance measures. The Sutter County General Plan, Transportation Element (Sutter County 1996) addresses transportation planning in the county, and includes performance standards for the transportation circulation system. Congestion is addressed in the SACOG CMP for Yuba and Sutter counties.

City of Oroville

The City of Oroville County General Plan, Transportation Element (City of Oroville 1995) addresses transportation planning and includes performance standards for the transportation circulation system.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on transportation and traffic. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM AIR-4: Implement standard mitigation measures

APM HAZ-4: Develop and implement a helicopter lift plan

APM HAZ-5: Prepare a health and safety plan

APM HAZ-6: Develop and implement a fire risk management plan

APM TRAN-1: Restriction of Simpson Lane during p.m. peak Hours

3.16.2 Environmental Impacts and Mitigation Measures

Project construction is anticipated to take 12 to 18 months and would require an excavation crew, a light-duty helicopter crew, a heavy-duty helicopter crew, a pole crew, line crew, substation crew, and environmental monitor. Equipment that may be used includes a line truck, water truck, four-wheel-drive pickups, 70-ton crane, helicopter, auger, bulldozer, hand tools, rope truck for reconductoring, and a truck-mounted rope puller and conductor tensioner. Details about the project construction schedule, number of workers, and construction-related truck trips are provided in Table 3.16-2.

Table 3.16-2 Construction Phases, Workers, Truck Trips, Schedule, and Activities

Project Phase	Total Days of Construction [1]	Maximum Number of Workers	Maximum Daily Delivery Trucks	Total Daily Delivery Trucks for the Project
Construction of Staging areas/helicopter landing zones and new temporary roads	120	30	5	50
Existing Tower removal and Tower Site Recovery [2]	120	30	5	500
Pole Site Excavation, concrete base construction and new pole installation [3]	300	50	10	1,400 [4]
Transmission Line Installation	200	30	5	500
Staging areas/helicopter landing zones recovery	100	20	5	20

Source: PG&E 2009

Notes:

1 Off-road construction equipment is assumed to operate 12 hours per day.

2 Includes the helicopter operation of two Bell 214 and two Hughes 500, which are assumed to operate 4 hours per day for a total of 100 hours for each helicopter.

3 Includes the helicopter operation of one Bell 214 and two Hughes 500. One Bell 214 is assumed to operate 4 hours per day for a total of 100 hours and two Hughes 500 are assumed to operate 8 hours per day for a total of 200 hours for each helicopter.

4 Includes concrete trucks for pole foundation construction.

a. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

LESS THAN SIGNIFICANT WITH MITIGATION. The project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Although the general plans for Sutter, Butte and Yuba counties and the City of Oroville all include performance measures for traffic and transportation, the project would not cause a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections that would conflict with the effectiveness of the circulation system. Construction is anticipated to occur over a 12- to 18-month period, and there would be a temporary increase in truck traffic on regional and local roadways in the project area.

During construction of the transmission line modifications and telecommunication improvements, periodic single-lane closures may be required, which could temporarily impact traffic conditions along the project route. The traffic management procedures required under the encroachment permits that the applicant would be required to obtain, however, would ensure adequate traffic flow. The traffic management procedures would require the use of sufficient signage to alert drivers of construction zones, notification of emergency responders prior to construction, community outreach, and traffic control around schools (APM AIR-4). To ensure that advance notification to nearby airports, railroads, and schools would take place, the following mitigation measure is required:

> **MM TRAN-1: Construction Notification.** PG&E will provide advance notice to nearby airports, railroads, and schools in the project vicinity regarding construction activities.

During operation and maintenance, the reconstructed transmission lines would be monitored and the applicant's personnel would only visit the project area for repairs on an as-needed basis. Such visits would require substantially fewer trips than during construction and would result in a less than significant impact on the effectiveness of the circulation system. Therefore, with the implementation of MM TRAN-1, impacts under this criterion would be less than significant.

b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

LESS THAN SIGNIFICANT. Construction of the project is not anticipated to exceed a level of service standard established by the county congestion management agencies for the project. Due to the short-term and linear nature of project, construction activities are not anticipated to impact traffic levels. Construction crews and vehicles (Table 3.16-2) would use existing paved or graveled roads along most of the transmission line corridor to access tower/pole sites; these include existing paved roads and farm roads, in addition to existing maintenance access to the existing transmission lines. Where necessary, existing access roads would be widened to a maximum of 16 feet, and new, temporary, access roads will be constructed. The traffic management plan required by the encroachment permits would include provisions for signage and noticing to inform the public about work before any disruptions occur, the use of flagmen and/or escort vehicles to control and direct traffic flow, and scheduling roadway work during periods of minimum traffic flow (APM AIR-4).

Access would be primarily by existing major roadways suitable for truck traffic. The roadways within Butte County, the City of Oroville, and Sutter County that would be used for construction are identified above as having an LOS are operating at LOS C or better and currently meet the adopted operating standards. In Yuba County, the roads currently operate at acceptable levels during the p.m. peak hour with the exception of a portion of Simpson Lane, which operates at LOS D during p.m. peak-hour traffic volumes. To reduce impacts to Simpson Lane, the applicant would implement APM TRAN-1.

During operation and maintenance, the reconstructed transmission lines would be monitored and the applicant's personnel would only need to visit the project area for necessary repairs on an as-needed basis. Therefore, the project would not exceed a level of service standard, and impacts would be less than significant under this criterion.

c. Would the project 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?

LESS THAN SIGNIFICANT. During construction, helicopters would be used to transport materials and work crews to locations where overland access is not possible or difficult due to topography and vegetation, and otherwise as warranted by construction needs. Temporary helicopter landing areas would be established to pick up and drop off crew and materials, as well as to stage and refuel. Although operation of the helicopters would result in a temporary change in air traffic patterns, the applicant would require the contract helicopter vendors to develop and implement a helicopter lift plan (APM HAZ-4) as required by the FAA to mitigate safety risks. The FAA also requires notice about construction or alteration projects that exceed a height restriction of 200 feet above ground level per Federal Aviation Regulations (FAR) Part 77 (Yuba 1994).

Since the existing steel towers range in height from 75 to 95 feet and the replacement structures would range in height from 80 to 120 feet, the project would not constitute a new obstruction to navigable air space under FAR Part 77. Therefore, with implementation of APM HAZ-4, the project would not result in a change in air traffic patterns that would result in substantial safety risks, and impacts would be less than significant under this criterion.

d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

LESS THAN SIGNIFICANT WITH MITIGATION. The project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). During construction, towers would be removed and replaced, and transmission lines would be pulled across roadways, waterways, and railroad tracks. The maneuvering of construction-related vehicles and equipment among the general-purpose traffic on local roads could cause safety hazards.

To minimize potential hazards, traffic management procedures would be prepared and submitted for approval by Caltrans and/or local authorities pursuant to the encroachment permit(s). Construction or installation work requiring the crossing of a local street, highway, or rail line would incorporate the use of guard poles, netting, or similar means to protect moving traffic and structures from the activity. In addition, the only construction activities that would occur at night would be those required to raise towers. The majority of construction staging activities, including onsite and offsite vehicle movement, would occur during the day, and nighttime construction would only occur from June 1st to October 1st (Chapter 1, Background Information).

The traffic management plan required by the encroachment permits would include provisions for signage and noticing to inform the public about work before any disruptions occur, the use of flagmen and/or escort vehicles to control and direct traffic flow, and scheduling roadway work during periods of minimum traffic flow (APM AIR-4). Any specific transportation needs (e.g., temporary road closures) would be identified in the plan and coordinated with the appropriate jurisdictions (encroachment permit requirements). Damage to local streets would be repaired and streets restored to their pre-project condition during and at the completion of construction of the project pursuant to the encroachment permits. In addition, the applicant will provide advance notice to nearby airports, railroads, and schools in the project vicinity regarding construction activities (MM TRAN-1).

The existing access roads have several “wet” crossings (cobble base) that may be impassible for larger/heavier construction vehicles; therefore, portable bridges that would span top of bank to top of bank are proposed. Vehicular traffic and heavy equipment would be scheduled for the dry/low flow season. If bridging is not possible, construction would utilize sky crane helicopters to transport materials to job sites. During construction, helicopters would be used to remove existing towers, install new poles, and to deliver materials and workers to locations where overland access is difficult. The helicopter vendor would prepare a helicopter lift plan for approval by the FAA prior to helicopter operations (APM HAZ-4).

Operation of the project would not substantially increase hazards due to a design feature or incompatible uses because operation of the project would not involve, create, or increase hazards at applicable transportation-related facilities. Therefore, construction and operation of the project would result in a less than significant impact with implementation of MM TRAN-1.

e. Would the project result in inadequate emergency access?

LESS THAN SIGNIFICANT. The project would not permanently change the existing circulation system and emergency access routes. However, construction activities may result in temporary open trenches and traffic lane closures for large equipment and/or vehicles that could potentially delay or obstruct emergency access for the fire or police departments. As required by the encroachment permits, traffic management procedures will protect workers as well as moving traffic, structures, and local streets during construction activities.

Under the encroachment permit, damage to roadways will be repaired, and streets will be restored to their pre-project condition during and at the completion of construction of the project. This will reduce potential impacts to emergency response along roadways in the project area. If road closures are required, the applicant would coordinate with local agencies to maintain emergency access routes or services pursuant to the encroachment permit (APM AIR-4). The applicant would also prepare a Health and Safety Plan (APM HAZ-5) and develop and Implement a Fire Risk Management Plan (APM HAZ-6). Therefore, impacts would be less than significant under this criterion.

f. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

LESS THAN SIGNIFICANT. The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycles, or pedestrian facilities or otherwise decrease the performance of such facilities. The majority of project construction would take place within the existing project right-of-way. During construction and maintenance of the project, temporary lane closures may be required in some areas where power lines would cross roads; however, this would not permanently impact traffic flow including all affected modes of transportation and access. Therefore, construction and operation of the project would result in a less than significant impact under this criterion.

References

Butte County. 1984. Butte County General Plan, Circulation Element.

Butte County Association of Governments. 2004. Regional Transportation Plan. http://www.bcag.org/documents/planning/2004_RTP/3Analysis.pdf. Accessed June 15, 2009.

City of Oroville. 1995. City of Oroville General Plan Circulation Element.

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services. ICF Jones & Stokes. February.

Sacramento Area Council of Governments (SACOG). 2009. http://www.sacog.org/about. Accessed June 18, 2009.

__________. 2009. 2009/12 Metropolitan Transportation Plan.

Sutter County. 1996. Sutter County General Plan, Circulation Element.

__________. 2008. General Plan Technical Background Report. February.

Yuba County. 1994 Yuba County Airport Comprehensive Land Use Plan. May.

__________. 1996. Yuba County General Plan, Circulation Element.

__________. 2007. Yuba County General Plan Update Background Report. Transportation and Circulation. November.

3.17 Utilities and Service Systems

Table 3.17-1 Utilities and Service Systems Checklist

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?	☐	☐	☐	☒
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 has 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?	☐	☐	☐	☒

3.17.1 Setting

The project route would pass through Butte, Yuba, and Sutter counties including the City of Oroville. This section describes existing water and solid-waste utility and service systems in these jurisdictions. Table 3.17-2 provides a summary of existing water and solid waste services in the regional area.

Butte County

Wastewater

Wastewater service in the Butte County project area is provided to residences by private septic systems. The nearest municipal system is the Oroville Regional Wastewater Treatment Plant (WWTP) owned and operated by the Sewerage Commission—Oroville Region. The WWTP is a regional treatment plant, which provides wasterwater service to the City of Oroville, Thermalito Irrigation District, Lake Oroville Area Public Utility District, California Parks and Recreation Department, and California Department of Water Resources. The Oroville Regional WWTP treats approximately 3.2 million gallons per day (mgd) with a design average dry weather flow capacity of 6.5 mgd.

Table 3-17-2 Utilities and Service Systems Summary by Jurisdiction

Jurisdiction	Wastewater Service	Potable Water	Water Service	Solid Waste Company/Landfill Site
Butte County	Approximately 50,000 on-site sewage disposal systems (septic systems)	Miners Ranch Reservoir; 14.5 mgd capacity	South Feather Water and Power	Neal Road Landfill; maximum disposal approximately 1,500 tons per day; capacity approximately 20,217,600 cubic yards (13,141,300 tons)
City of Oroville	• City of Oroville • Thermalito Irrigation District • Lake Oroville Area Public Utility District	Sewerage Commission, Oroville Region (SCOR) Plant	Calwater—Oroville (a private supplier); the project area served by the South Feather Water and Power Agency	Norcal Waste Systems
Yuba County	• Linda County Water District • Olivehurst Public Utilities District • Individual Septic Systems	Yuba County Water Agency	• Olivehurst Public Utility District • Brophy Water District • Cordua Irrigation District • South Yuba Water District • Linda County Water District	• Yuba-Sutter Disposal, Inc. • Ostrom Road Landfill
Sutter County	Private Septic Systems	Private Wells*	South Sutter Water District	N/A

Note:
*Most Sutter County residents and businesses pump potable water from privately owned wells. Several municipal and community systems operate within Sutter County, but the project area is not served by any of them.

Potable Water and Water Service

The nearest municipal water system to the in the Butte County project area is located in the City of Oroville. Residents in this project area use potable water supplied by a surface water diversion from a spring. The spring ties into the Oregon Gulch, which then ties into the South Fork of the Feather River downstream of Lake Oroville. A portion of the project route located in unincorporated Butte County is supplied with water by the South Feather Water and Power Agency (Agency). Areas not served by the Agency extract water from groundwater basins through privately owned wells (Butte County 2007).

Stormwater Drainage

Butte County does not maintain a stormwater drainage system in the vicinity of the project route. Stormwater drainage is handled by the individual incorporated cities.

Solid Waste/Landfills

The management of non-hazardous solid waste in Butte County is mandated by state law and guided by policies at the state and local levels. Solid waste services are not currently utilized at the project site. There are four hauling companies that service unincorporated Butte County. The nearest transfer station is Oroville and is operated by Norcal Waste Systems. Solid waste is transferred to the Neal Road Landfill. The landfill is located in Paradise, California on 190 acres with 140 acres available for disposal. As of July 2005, approximately 22 million cubic yards of disposal capacity were remaining out of a total 25 million cubic yards. On average, the landfill receives 700 to 800 tons per day and is permitted to receive 1,500 tons per day (Butte County 2009).

City of Oroville

Wastewater

The City of Oroville provides wastewater collection services to approximately 13,500 individuals. Current wastewater flows are 1.9 mgd and are expected to grow to approximately 3.2 mgd over the next 20 years. The city collection system is sufficient to meet current demands; however, the pipelines for transporting the city's wastewater are not large enough to support additional growth. To support expected growth, new developments will be required to upgrade the existing collection system infrastructure to accommodate additional capacity.

The Thermalito Irrigation District of the City provides wastewater collection services to approximately 1,985 customers. Wastewater flows currently average 0.37 mgd and are expected to grow to 0.67 mgd within the next 20 years.

Potable Water and Water Service

Refer to the Butte County section.

Stormwater Drainage

The Lake Oroville Area Public Utility District provides sewer collection services to approximately 12,000 individuals. Their service area is primarily in unincorporated areas east and south of the City of Oroville. The district's population is expected to grow to more than 20,000 individuals by 2025. The District collects an average of 384 million gallons of wastewater annually. The current demand of 0.81 mgd is expected to grow to 1.35 mgd over the next 20 years. Currently, no capacity issues exist with collection volumes, and there are no plans for capacity expansion. New development in the District's service area may be required to upgrade existing collection systems if additional capacity is required (City of Oroville 2008).

Solid Waste/Landfills

The City of Oroville contracts for solid waste collection and recycling services to be provided by Norcal Waste Systems. Waste generated within the city limits gets collected and processed at the Oroville Transfer Station. This station receives more than 200 tons of material per day on average and is permitted to receive 975 tons per day. This permitted volume is greater than the City of Oroville's needs for the foreseeable future, and no plans now exist for expansion of this facility. Once processed, waste that cannot be recycled is transported to the Ostrom Road Landfill. The landfill is expected to reach its capacity of 41.8 million cubic yards in 2066, and there are no planned expansions or deficiencies at the landfill at this time (City of Oroville 2008).

Yuba County

Wastewater

Portions of the project route that would not lie within serviced areas of Yuba County do not receive central wastewater treatment. These areas rely on septic systems. Septic systems are located on individual properties and provide treatment of wastewater onsite. Septic systems are allowed in most areas of the county only if no public sewer system exists nearby. Property owners must maintain their own septic systems in these areas. Approximately 9,000 septic systems exist throughout Yuba County (Yuba Local Agency Formation Commission 2008).

Potable Water and Water Service

Yuba County has adequate water supplies on the whole. Yuba County Water Agency and Browns Valley Irrigation District are major water rights holders whose future water supplies are affected by increased flow requirements of the Lower Yuba River Accord. The North Yuba Water District and Nevada Irrigation District are also among the major water suppliers to Yuba County. In the long term, there may be inadequate groundwater supplies to serve future development in the county.

Stormwater Drainage

In the unincorporated areas of Yuba County, the drainage system consists of roads with drainage systems, catch basins, water basins, detention basins, constructed wetland, artificial channels, aqueducts, curbs, gutters, ditches, sumps, pumping stations, storm drain inlets, and storm drains. The county plans on developing a master underground drainage system in Linda and Olivehurst to address problems with their current system. Improvements identified in the plan will be funded and constructed by developers.

Yuba County prepared a drainage master plan for southwest Yuba County in 1981 and issued an update to the plan in 1992, identifying drainage improvements for the area. With the exception of the Eastside Interceptor Canal, all of the major improvements have been made since the publication of the plan, including the Olivehurst Interceptor Canal, Olivehurst Detention Basin, Eastside Interceptor Canal, and the County Regional Detention Basin (Yuba Local Agency Formation Commission 2008).

Solid Waste/Landfills

Yuba-Sutter Disposal, Inc. collects more than 100,000 tons of materials and serves more than 43,000 residential customers and 3,00 commercial customers (YSD 2009). The amount of trash collected from Yuba and Sutter counties has increased from 127,289 tons in 1995 to 139,649 in 2006.

Ostrom Road Landfill is the only active solid waste landfill in Yuba County. A Class II landfill, the facility is owned and operated by Norcal Waste Systems, Inc., and has a total disposal area of 225 acres. The Ostrom Road Landfill has a permitted capacity of over 41.8 million cubic yards. More than 97 percent of its capacity is still available. The landfill can accept a maximum of 3,000 tons of waste a day. The estimated closure date of the landfill is December 31, 2066. According to the California Integrated Waste Management Board, the Ostrom Road Landfill has adequate capacity to accommodate current and projected service demands (Yuba Local Agency Formation Commission 2008).

Sutter County

Wastewater

The South Sutter Water District is a public agency that provides irrigation water to 52,000 acres of land including the project area. Located on the eastern side of Sutter County, the South Sutter Water District's surface water is obtained from the Camp Far West Reservoir, located within their service area. South Sutter Water District has also purchased surplus water from the Nevada Irrigation District in the past (Sutter County 2008).

Wastewater in Sutter County is treated at individual parcels with septic systems (onsite treatment facilities) or at community or city wastewater treatment plants. The project area would not be within the service area of any community or city wastewater treatment plants and would be entirely served by private septic systems (Sutter County 2008).

A portion of the project route in southeast Sutter County would be located in the Reclamation District 1001 watershed. The District watershed encompasses an area of approximately 54 square miles and drains south to the Verona Pump Station, which has a total capacity of 577 cubic feet per second and pumps the water into the Cross Canal. Reclamation District 1001 also has three small pump stations that lift stormwater from the northern portion of the watershed into the Yankee Slough (Sutter County 2008).

Potable Water and Water Service

Potable water in Sutter County is provided from the Feather River by groundwater and surface water, although most of Sutter County uses groundwater for potable water supplies that are pumped by privately owned wells. Several municipal and community potable water systems operate within Sutter County, but the project area is not served by any of them. The County's groundwater supply is at risk due to a variety of naturally occurring contaminants, which are currently being addressed through the preparation of a groundwater management plan to help protect the county's groundwater resources.

Additionally, several irrigation water companies and districts provide irrigation water within Sutter County. Their main source of water is from the Feather and Sacramento Rivers. When surface water supplies are reduced or not available during the summer, groundwater is also used.

Stormwater Drainage

As mentioned above, a portion of the project route in southeast Sutter County would be located in the Reclamation District 1001 watershed. The District watershed encompasses an area of approximately 54 square miles and drains south to the Verona Pump Station, which has a total capacity of 577 cubic feet per second and pumps the water into the Cross Canal.

Solid Waste/Landfills

No solid waste management facilities or transfer stations are located within Sutter County. Solid waste management for Sutter County is conducted by Yuba-Sutter Disposal, Inc. under a joint agreement with Yuba County; the cities of Marysville and Wheatland in Yuba County; the cities of Live Oak and Yuba City in Sutter County; and the City of Gridley in Butte County. The agreement was made in 1990 to jointly address the provision of waste management services including the planning for the future provision of waste management services. Yuba-Sutter Disposal, Inc. provides for the collection, recycling, and disposal of municipal solid waste in Sutter County.

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts on utilities and service systems. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM USS-1: Conduct a pre-construction records search/field survey to identify specific locations of water wells and well fields

APM USS-2: Notify underground service alert at least 14 days prior to initiation of construction activities in the underground portion of the power line

APM AIR-3: Minimize greenhouse gas emissions during construction

APM HYDRO-1: Prepare and implement a storm water pollution prevention plan

3.17.2 Environmental Impacts and Mitigation Measures

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

NO IMPACT. Because project construction would only involve replacement of existing steel towers, reconductoring, and minor substation modifications, water use would be minimal and limited to dust control activities and crewmember consumption. Therefore, the project would not exceed wastewater treatment requirements established by the Central Valley Regional Water Quality Control Board. Additionally, there are no population growth impacts associated with the project; therefore, wastewater treatment and other utility and service systems along the project route would not be affected. Project construction would negligibly affect wastewater because construction crews would use portable toilets; however, no changes to wastewater treatment facilities would be required due to the small amount of waste generated. PG&E would operate and maintain the new transmission line in the same way they operated and maintained the original line, which did not require water because transmission lines do not require water to operate. Therefore, it would not generate substantial amounts of wastewater, and no impact would occur under this criterion.

b. Would the Project 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. The water supply and wastewater treatment aspects of the project would be designed such that the project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The amount and source of water needed for construction would depend on the time of year and the construction location. Water would be primarily used for dust control and fire protection during construction. All water used would be trucked in from an outside source in the project vicinity. The project would use available reclaimed water for this purpose. The amount required for the duration of the project is estimated at 2,000 gallons per day for 100 days (200,000 gallons total). No water would be required for project operation.

Wastewater use for the average transmission line construction workforce would be minimal and temporary (approximately 50 workers maximum per day). Portable restrooms would be used and maintained during construction and removed after the completion of project construction. No impact to local sewer systems would result from the project and no new water or expanded wastewater treatment facilities would be required. Therefore, no impact would occur under this criterion.

c. Would the project 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?

LESS THAN SIGNIFICANT. The project would not result in a need for new stormwater drainage facilities nor substantially alter existing facilities. Construction of the project would not increase stormwater run-off from roadways. The project route would be accessed primarily via existing access roads, but temporary access roads would still be needed and limited improvements to permanent access roads would be made. Additionally, prior to power line construction, temporary lay down (staging) areas would be prepared to provide space for materials delivery, storage, and preparation; equipment storage; crew parking; and offices prior to installation. In addition, there would be helicopter landing zones, pull sites, and temporary access roads for construction vehicles and workers.

The temporary construction areas and access roads would involve vegetation maintenance such as mowing, trimming, and blading, and may affect drainage temporarily. The effects to vegetation should regenerate naturally with little restorative effort. However, PG&E would obtain the appropriate permits (encroachment permits from Caltrans) for potential drainage impacts due to staging areas. Construction areas and access roads would be temporary and be restored to near preconstruction conditions after project construction is completed. They would not result in a permanent impact to drainage in the area. New or expanded stormwater drainage facilities would not be required.

In addition, a Stormwater Pollution Prevention Plan (SWPPP) would be written for the entire project as described in APM HYDRO-1, and workers would receive instruction about the plan. Existing stormwater management procedures would also apply, but the project would not require or result in the need for new stormwater drainage facilities or the expansion of existing facilities. Therefore, impacts would be less than significant under this criterion.

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

NO IMPACT. Water would only be required for dust suppression purposes or for the concrete for filling the new pole holes, as needed, during construction of the transmission line. Sufficient sources of potable water are available for PG&E to conduct standard dust and fire-suppressant activities, as well as for crew consumption during construction. The amount of water used during the 12 to 18 months construction period would be minimal. Therefore, no impact would occur under this criterion.

e. Would the project 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. The project would not be served by a wastewater treatment provider. During project construction, portable restrooms would be used. Additionally, water use would be minimal and limited to dust control activities and crew consumption. Because the project involves reconductoring of existing transmission lines and minor substation modifications, the same operations and maintenance activities would resume for the new facilities; therefore, no wastewater treatment would be required as part of the project, and there would be no impact on wastewater treatment providers or their capacities.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

LESS THAN SIGNIFICANT. The Neal Road Landfill is anticipated to be able to continue to receive solid waste until at least the year 2033. Ostrom Road Landfill has adequate capacity to accommodate current and projected demand for service until 2066. The permitted maximum disposal amount at the Neal Road is 1,500 tons per day. Yuba and Sutter counties' Ostrom Road Landfill can accept a maximum of 3,000 tons of waste a day and is estimated to have enough capacity to remain open until the year 2066 with only about three percent in use as of 2006.

The project would have a less than significant affect on landfills because it would generate a small amount of construction waste that can easily be accommodated by the existing landfills within the area. In addition, construction waste will be recycled to the maximum extent possible. Upon completion of tower modifications, reconductoring, and substation modifications, operations and maintenance of the transmission line would continue in the same manner as it did prior to the project. Capacity levels of existing landfills would be sufficient for the continuation of operations and maintenance activities. This disposal activity would have a minimal impact on the capacity of existing landfills and would not require the development of new or expanded landfills. Additionally, under APM AIR-3, construction waste recycling would be encouraged. Therefore, impacts would be less than significant under this criterion.

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

NO IMPACT. The project would comply with the California Integrated Waste Management Act of 1989 (AB 939), which requires each city and county in California to prepare, adopt, and implement a Source Reduction and Recycling Element (SRRE). The purpose of the SRRE is to identify how the jurisdiction would divert through source reduction, recycling, and composting, 25 percent of its solid waste from landfill or incinerator disposal by 1995, and 50 percent by the year 2000. County of Butte Department of Public Works reports that in 2008, the county was diverting more than 51 percent of its solid waste from landfill disposal.

The project would not generate additional solid waste except during the construction period. For the few existing wood poles that would be removed during the course of the project, PG&E would make the poles available for reuse or, if demand does not exist for the poles, would dispose of them in an appropriate landfill with sufficient capacity to accept the material. Other miscellaneous non-hazardous construction materials that could not be reused or recycled would likely be acceptable for disposal at county landfills. Any hazardous materials and wastes will be recycled, treated, and disposed of in accordance with federal, state, and local laws.

During project construction, PG&E would dispose of all waste in accordance with published national, state, or local standards relating to solid waste. The same operations and maintenance activities conducted for the previous transmissions lines would be conducted for the new lines. PG&E would adhere to all national, state, or local standards for the disposal of solid waste during operation and maintenance of the line. Therefore, there would be no impact under this criterion.

References

Butte County. 2009. Neal Road Sanitary Landfill. http://www.buttecounty.net/Public%20Works/Divisions/Solid%20Waste/Neal%20Road%20Sanitary%20Landfill.aspx. Accessed June 22, 2009.

CPUC (California Public Utilities Commission). 1995. General Order No. 131-D, Rules relating to the planning and construction of electric generation, transmission/power/distribution line facilities and substations located in California. Adopted June 8, 1994. Decision 94-06-014. Modified August 11, 1995. Decision 95-08-038. August 11.

County of Butte, Department of Public Works. 2008. Butte County to Conduct Recycling Load Checks at the Neal Road Landfill. News Press Releases November 14, 2008.

PG&E (Pacific Gas and Electric Company). 2009. Proponent's Environmental Assessment, Palermo-East Nicolaus 115 kV Transmission Line Reconstruction Project. Prepared for Land Planning and Routing Technical and Land Services, by ICF Jones & Stokes. February.

Sutter County. 2005. General Plan Background Report, CERES. http://ceres.ca.gov/planning/genplan/sutter/facilities4.html. Accessed June 22, 2009.

Yuba Local Agency Formation Commission. 2008. Municipal Service Review: Background Report.. *http://www.burrconsulting.com/Yuba_LAFCO/MSR%20Document/Countywide/Final/Final%20Countywide%20Yuba%20MSR%20Background%20Report.pdf*. Accessed July 2, 2009.

YSD (Yuba-Sutter Disposal, Inc.). 2009. Yuba-Sutter Disposal, Inc. http://www.ysdi.com. Accessed July 2, 2009.

3.18 Mandatory Findings of Significance

Table 3.18-1 Mandatory Findings of Significance Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measures (APMs) into the project to minimize or avoid impacts. See Chapter 1.0 for a full description of each APM that the applicant has incorporated into the project to avoid or minimize impacts on all resource areas.

APM BIO-1 through BIO-24

APM CR-1: Stop work if previously unknown cultural resources are discovered.

APM CR-2: Stop work if previously unknown paleontological resources are discovered.

APM CR-3: Stop work if human remains are discovered.

APM HAZ-1: Implement a Spill Prevention Plan

APM HAZ-2: Conduct construction soil sampling and testing if soil contamination is suspected.

APM HAZ-3: Conduct groundwater sampling and testing if suspected contaminated groundwater is encountered during construction.

APM HAZ-4: Develop and implement a helicopter lift plan

APM HAZ-5: Prepare a health and safety plan

APM HAZ-6: Develop and implement a fire risk management plan

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

LESS THAN SIGNIFICANT WITH MITIGATION. A number of special-status wildlife and plants have been identified that may be impacted by construction of the project. Implementation of the APMs and mitigation measures (MMs) discussed in Section 3.4, Biological Resources, however, would be sufficient to protect these species and their habitat. The APMs and MMs would also be sufficient to protect other fish and wildlife found in the project area and would reduce potential impacts to less than significant levels.

Though the project route would cross several areas of high paleontological sensitivity, implementation of the APMs and MMs discussed in Section 3.5, Cultural Resources, to protect potential historical, archaeological, and paleontological findings during construction of the project, would be sufficient to reduce impacts to less than significant levels. Therefore, impacts under this criterion would be reduced to less than significant levels.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

LESS THAN SIGNIFICANT. The project involves the reconstruction of an existing transmission line including the replacement of towers, poles, and conductors. Potential cumulative impacts could occur with regard to air pollutant or greenhouse gas emissions. Implementation of the APMs discussed in Section 3.3, Air Quality, and Section 3.7, Greenhouse Gas Emissions, would be sufficient to mitigate air quality impacts during construction and operation of the project. Cumulative impacts associated with air pollutants are addressed in Section 3.3, Air Quality.

Greenhouse gas (GHG) emissions, and their contribution to climate change, are an inherently cumulative impact. However, GHG emissions from electrical transmission projects are generally much lower than those from other types of construction projects. In 2008, the most recent year that data is available, GHG emissions in California were estimated by the California Air Resources Board to be approximately 477.74 million metric tons (MMT) of carbon dioxide or carbon dioxide equivalents (CO_2e). Of this total, 0.96 MMT (or 0.2%) were calculated to be associated with electric transmission and distribution (CARB 2010). Based on this data, project emissions would account for approximately 0.0006% of GHG emissions statewide (2652 MT CO_2e for the project, Appendix A). To further reduce the cumulative significance of project-related GHG emissions, under APM AIR-3, worker carpooling, construction waste recycling, and biodiesel use would be encouraged to reduce greenhouse gas emissions during construction.

Cumulative impacts could also occur with regard to other resource areas. Other than the maintenance of existing transmission lines in the regional area, however, no activities associated with past, present, or reasonably foreseeable future projects are anticipated. Therefore, impacts under this criterion would be less than significant.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT WITH MITIGATION. Implementation of the APMs and MMs discussed in Section 3.8, Hazards and Hazardous Materials, for hazardous materials, substance, and waste handling and wildfire prevention would reduce potential impacts to human beings, either directly or indirectly, to less than significant levels. Therefore, impacts under this criterion would be reduced to less than significant levels.

References

California Air Resources Board (CARB). 2010. California Greenhouse Gas Inventory for 2000 to 2008: By Category as Defined in the Scoping Plan. May 12.

This page intentionally left blank

4.0 List of Preparers

A consultant team headed by Ecology and Environment, Inc. prepared this document under the direction of the California Public Utilities Commission. The preparers and technical reviewers of this document are presented below.

4.1 Lead Agency

California Public Utilities Commission, Energy Division

- Iain Fisher, Project Manager

4.2 Project Management and Document Production

Ecology and Environment, Inc.

- Nick Figone, Project Manager
- Rob Peterson, Deputy Project Manager
- Alexis Amaye-Hunter, Environmental Planner
- Erica Brown, Visual Resources Specialist
- Louise Flynn, Environmental Planner
- Joe Grieser, Biologist
- Christy Herron, Environmental Planner
- Karen Ladd, Environmental Planner
- Deborah Linton, Graphic Designer
- Christine McCollum, Cultural Resources Specialist
- Mark Roeder, Paleontologist
- Amber Santilli, Word Processor
- Dale Schneeberger, Geologist
- Brian Sholly, Computer Support and Document Production
- Tom Siener, Noise Specialist
- Jennifer Siu, Biologist
- Paul VanKerkhove, Air Quality Specialist
- Rachel Wilkinson, Technical Editor
- Silvia Yanez, Project Engineer and Planner
- Kim Zuppiger, Environmental Planner

5.0 Mitigation Monitoring, Reporting, and Compliance Plan

The purpose of this Mitigation Monitoring, Reporting, and Compliance Plan (MMRC Plan) is to ensure effective implementation of the applicant proposed measures (APMs) and mitigation measures required by the California Public Utilities Commission (CPUC) and that Pacific Gas & Electric Company (the applicant) has agreed to implement as part of the Palermo–East Nicolaus 115-kV Transmission Line Reconstruction Project (the project). The MMRC Plan, which is outlined in Table 5-1, includes the:

- APMs and mitigation measures that the applicant is required to implement as part of the project;
- California Environmental Quality Act (CEQA) checklist questions to which the APMs and mitigation measures apply;
- Monitoring requirements; and
- Timing for implementation of the APMs and mitigation measures.

A CPUC-designated environmental monitor (or monitors) will monitor construction of the project to ensure full implementation of each APM and mitigation measure. In all instances where non-compliance occurs, the CPUC's designated environmental monitor will issue a warning to the construction foreman and the applicant's project manager. Continued non-compliance will be reported to the CPUC's designated project manager. Any decisions to halt work due to non-compliance will be made by the CPUC. The CPUC-designated environmental monitor will keep a record of any incidents of non-compliance with mitigation measures, APMs, or other conditions of project approval. Copies of these documents will be supplied to the applicant and the CPUC.

With full implementation of the APMs and mitigation measures listed in Table 5-1, all project permitting requirements, and all applicable federal, state, and local regulations, each potentially significant impact identified in this Initial Study (IS) would be avoided or reduced to less than significant levels.

Variances

The CPUC along with its designated environmental monitor will ensure that any *project variance*—change to the project that deviates from how it was described in the IS or Proponent's Environmental Assessment—or deviation from the procedures identified under the MMRC Plan is consistent with CEQA requirements. No project variance will be approved by the CPUC if it creates new significant impacts. Variances will be strictly limited to minor project changes that do not trigger additional permit requirements; do not increase the severity of an impact or create a new impact; and that clearly and strictly comply with the intent of the mitigation measures listed in Table 5-1.

If a proposed change to the project has the potential for creating significant environmental effects, it will be evaluated to determine whether supplemental CEQA review is required. Any variance from the approved project, adopted mitigation measures, APMs, and correction of such deviation, will be reported immediately to the CPUC and the environmental monitor for their review and approval. In some cases, a variance may also require approval by a CEQA responsible agency.

Dispute Resolution

The following procedure will be observed for dispute resolution:

- **Step 1.** Disputes and complaints (including those of the public) should be directed first to the CPUC designated Project Manager for resolution. The Project Manager will attempt to resolve the dispute.
- **Step 2.** Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the Proposed Project or adopted Mitigation Monitoring Plan.
- **Step 3.** If a dispute or complaint regarding the implementation or evaluation of the Mitigation Monitoring Plan cannot be resolved informally or through enforcement or compliance action by the CPUC, any affected participant in the dispute or complaint may file a written “notice of dispute” with the CPUC Executive Director. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days or receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants for purposes of resolving the dispute. The Executive Director shall issue an Executive Resolution describing his/her decision, and serve it on the filer and other affected participants.
- **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the Resolution, such party(ies) may appeal it to the CPUC via a procedure to be specified by the Commission.

Parties may also seek review by the CPUC through existing procedures specified in the CPUC Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the foregoing procedure.

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
3.1 Aesthetics				
No applicable APMs or mitigation measures.				
3.2 Agriculture and Forestry Resources				
No applicable APMs or mitigation measures.				
3.3 Air Quality				
b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	APM AIR-1: **Implement best management practices to reduce construction tailpipe emissions.** The Applicant would implement all applicable and feasible measures to reduce tailpipe emissions from diesel-powered construction equipment. This requirement would be incorporated into the construction contract for the Project. Applicable and feasible measures include: • Maximize to use of diesel construction equipment meeting CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines. • Use emission control devices at least as effective as the original factory-installed equipment. • Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors. • Substitute gasoline-powered for diesel-powered equipment when feasible. • Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. • In the event that line-stringing activities would be required during peak ozone season, ground equipment would be used in place of helicopters, where practicable. APM AIR-2: **Implement mitigation measures for**	See requirements in APM AIR-1. See requirements in APM AIR-2.	During construction During	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	construction fugitive dust emissions. The applicant would implement all applicable and feasible fugitive dust control measures required by the Feather River Air Quality Management District (FRAQMD) and the Butte County Air Quality Management District (BCAQMD) including those listed below. This requirement would be incorporated into the construction contract for the Project. Applicable and feasible measures include: • Watering all active construction sites at least twice daily in dry conditions, with the frequency of watering based on the type of operation, soil, and wind exposure. • Prohibit all grading activities during periods of high wind (over 20 miles per hour). • On-site vehicles limited to a speed that minimizes dust emissions on unpaved roads. • Cover all trucks hauling dirt, sand, or loose materials. • Cover inactive storage piles. • Install wheel washers at the entrance to construction sites for all exiting trucks. • Sweep streets if visible soil material is carried out from the construction site. • Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person would respond and take corrective action within 48 hours. The phone number of the FRAQMD and BCAQMD also would be visible to ensure compliance with FRAQMD and BCAQMD rules regarding nuisance and fugitive dust emissions. • Limit the area under construction at any one time.		construction	
	APM AIR-3: **Minimize greenhouse gas emissions during construction.** The applicant would incorporate the following measures into the construction contract to reduce greenhouse gas (and other air pollutant) emissions:	See requirements in APM AIR-3.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	• Encourage the use of biodiesel fuel for diesel-powered equipment and vehicles. • Encourage construction workers to carpool. • Encourage recycling construction waste.			
	APM AIR-4: Implement SMMs. The applicant would implement all feasible standard mitigation measures (SMMs), including: • A Fugitive Dust Control Plan would be prepared and submitted to the FRAQMD and BCAQMD prior to the start of construction work. • Construction equipment exhaust emissions shall not exceed FRAQMD Rule 3.0, Visible Emissions or BCAQMD Rule 201, Visible Emissions. Operators of vehicles and equipment found to exceed opacity limits shall take action to repair the equipment within 72 hours or remove the equipment from service. • The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation. • Minimize idling time to 5 minutes. • When possible, utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators. • Develop a Traffic Plan to minimize traffic flow interference from construction activities. The Plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites. During construction, demonstrate to the CPUC-designated environmental	Confirm that a Fugitive Dust Control Plan was prepared and submitted to the FRAQMD and BCAQMD. Confirm that a traffic management plan was prepared and local permits were obtained for all roadway encroachment locations. See additional requirements in APM AIR-4.	Prior to and during construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	monitor that the required local permits were obtained for all roadway encroachment locations. • Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require CARB portable equipment registration with a state or local air district permit. The owner/operator shall be responsible for arranging appropriate consultations with CARB or the local air district to determine registration and permitting requirements prior to equipment operation at the site.			
	APM AIR-5: Implement all Appropriate BAMMs. The applicant would implement all feasible best available mitigation measures (BAMMs). These measures include the following: • The applicant would assemble a comprehensive inventory list (i.e. make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower [hp] and greater) that will be used an aggregate of 40 or more hours for the construction project. • The applicant would provide a plan for approval by FRAQMD and BCAQMD demonstrating that heavy-duty (equal to or greater than 50 hp) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 40 percent NO_x reduction and 45 percent particulate reduction compared to the most recent ARB fleet average at time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district offsite mitigation projects, and/or other options as they become available. The FRAQMD and BCAQMD would be contacted to discuss	Confirm that a comprehensive inventory list of all heavy-duty off-road equipment was prepared and a plan for its use submitted to the FRAQMD and BCAQMD. See additional requirements in APM AIR-5.	Prior to and during construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	alternative measures. • An operational water truck would be onsite at all times to apply water to control dust as needed to prevent dust impacts offsite. • No open burning of removed vegetation during infrastructure improvements. Vegetative material should be chipped or delivered to waste to energy facilities. **APM AIR-6: Avoid concurrent daytime and nighttime construction emissions.** To reduce impacts at any one location, daytime project construction work would not be allowed on the day proceeding or on the day after nighttime project construction work that occurs in the same air district as the daytime construction work.	 See requirements in APM AIR-6.	 During construction	
c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	**APM AIR-1: Implement best management practices to reduce construction tailpipe emissions** (see above) **APM AIR-2: Implement mitigation measures for construction fugitive dust emissions** (see above) **APM AIR-3: Minimize greenhouse gas emissions during construction** (see above) **APM AIR-4: Implement SMMs** (see above) **APM AIR-5: Implement all Appropriate BAMMs** (see above) **APM AIR-6: Avoid concurrent daytime and nighttime construction emissions** (see above)	See requirements in APMs AIR-1 to AIR-6.	Prior to and during construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
3.4 Biological Resources				
a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*	<u>Special Status Plants</u>			Less than significant
	APM BIO-9: Avoid impacts on special-status plants. Wherever possible, the project components would be redesigned to avoid impacts to special-status plants. The applicant would, under the direction of a qualified botanist and to the extent possible, adjust the location of work areas, access roads, and other project components to completely avoid impacts on brown fox sedge and other special-status plants that may be located within the study area prior to construction. If this avoidance measure is not feasible, the applicant would implement APM BIO-10 (Minimize impacts on special-status plants) and APM BIO-11 (Compensate for the loss of special-status plants).	See requirements in APM BIO-9.	During construction	
	APM BIO-10: Minimize impacts on special-status plants. If full avoidance of fox sedge and other special-status plants identified in the project area is not possible during construction, the applicant would minimize impacts by limiting the work area to the smallest area necessary to complete the work and would establish avoidance areas. Avoidance areas would be clearly staked and flagged in the field by a qualified botanist prior to construction. Where temporary disturbance is necessary, the applicant would conduct project activities and necessary ground disturbance in a manner that is consistent with the successful reestablishment of the species to the extent feasible. A list of specific actions necessary to ensure successful reestablishment of the species following temporary disturbance, and the locations where these actions would be implemented, would be prepared by a qualified botanist prior to construction and implemented during construction. The environmental awareness education program should include	See requirements in APM BIO-10.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	information on the location of special-status plants in the project area and the measures that would be implemented to avoid or minimize impacts on the plants.			
	APM BIO-11: **Restore habitat for special-status plants disturbed during construction.** If impacts on special-status plants are unavoidable, the applicant would develop a Special Status Plant Restoration Plan in consultation with the DFG and with the USFWS as well in the event that a federally listed plant is found. No impacts to special-status plants would be allowed until agency requirements are determined and implemented. The specific actions necessary would depend on the biology of the species in question and the type of impact; however, the actions would be designed to ensure successful reestablishment of the species following disturbance. The Plan would be prepared by a qualified botanist prior to construction and would indicate when and where the actions would be implemented during construction. The Plan would include a restoration and reseeding plan specific to the special-status plant habitat which was disturbed.	Confirm that if impacts on special-status plants were unavoidable, the applicant developed a Special Status Plant Restoration Plan in consultation with the DFG and with the USFWS as well in the event that a federally listed plant was found. See additional requirements in APM BIO-11.	Prior to, during, and after construction	
	<u>Noxious Weeds</u>			
	APM BIO-12: **Implement management practices to control the introduction and spread of invasive plants.** Prior to construction, the applicant would identify the location of noxious weed species of concern within areas that would be disturbed as part of the project. Appropriate management practices would be designed by a botanist and implemented during construction to reduce the likelihood of spreading already established weeds into new areas or increasing their abundance, and of introducing new weed species to the project area.	Confirm that the SWPPP includes best management practices (BMPs) for the control of noxious weeds as listed in APM BIO-12. Confirm that a post-construction survey for new weeds in areas that were disturbed during construction would also be conducted. See additional requirements in APM BIO-12.	Prior to and during construction	
	The SWPPP to be prepared for the project would include best			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	management practices (BMPs) such as using construction equipment that has been cleaned of soil and plant parts, including seeds, before entering the project area; using weed-free straw for erosion control, weed free gravel or fill for road construction, and revegetating with appropriate seed mixes that may include native species and/or sterile nurse crops. A post-construction survey for new weeds in areas that were disturbed during construction would also be conducted. If weed populations not previously found adjacent to project-disturbed areas were found following construction, they would be controlled using the most effective and least environmentally harmful methods. Implementing the management practices described above would reduce potentially significant impacts from invasive plants to a less-than-significant level. <u>Special Status Wildlife</u> *Valley Elderberry Longhorn Beetle*			
	APM BIO-13: Avoid or minimize effects on valley elderberry longhorn beetle during construction. Direct impacts to VELB would be avoided when feasible by minimizing the amount of suitable habitat that would be trimmed or removed. Suitable habitat is considered all elderberry stems greater than one-inch in diameter when measured at ground level. Work areas and structure locations would be designed or selected such that elderberry shrubs are avoided whenever possible. The transmission line and construction area would avoid potential impacts by spanning riparian forest vegetation along the Yuba River and Bear River where many of the elderberry shrubs in the study area are located. Additional shrubs within the study area are separated from potential project effects by a distinct barrier, such as a railroad or canal.	Confirm that impacts are avoided to the 44 elderberry shrubs located within 100 feet of the project area through project design and implementation of BMPs. Confirm that impacts to the 26 elderberry shrubs located within 20 feet of the project area are minimized as described in APM BIO-13. See additional requirements in APM BIO-13.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Potential impacts to 44 elderberry shrubs located within 100 feet of the project area but greater than 20 feet from the project area would be avoided through project design and implementation of BMPs. These shrubs are subject to potential indirect impacts from project construction; however, reconstruction and maintenance activities would not require ground disturbance within 20 feet of the drip-lines of these shrubs. The applicant does not expect impacts to VELB habitat located greater than 20 feet from the transmission facilities or project access routes. Potential impacts to 26 elderberry shrubs located within 20 feet of the project area would be minimized through implementation of these measures and as detailed in the Valley Elderberry Longhorn Beetle Conservation Program (PG&E 2003). • A qualified biologist would survey for the presence of elderberry plants within 20 feet of the work area and mark the minimum set-back distance with construction flagging. • Field workers would be briefed on the location of elderberry plants in or near the work area and would review the appropriate avoidance, protection, and minimization measures. • Ground-disturbing activities would include erosion control measures that prevent soil from leaving the work area or encroaching on an elderberry shrub. • A qualified biologist would survey all project access roads prior to conducting routine road maintenance or road grading. Construction vehicles would avoid traveling near elderberry shrubs that are located within 20 feet of an existing or temporary access road.			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Shrub numbers 1, 3-11, 26, and 55 are located directly beneath existing transmission towers. Most of these shrubs are greater than 25 feet in height, having grown up through and around portions of the tower structures. To avoid potential impacts from traditional demolition, these towers would be dismantled and removed only to ground level where feasible. Where the elderberry shrub has grown into or is entwined with the tower to the extent where the tower cannot be removed completely without trimming the shrub, that portion of the tower would be left in place. In order to protect public safety, the applicant's BMPs call for removal of non-functional facilities. Therefore, this measure would be implemented to the extent feasible without jeopardizing public safety. In general, metal tower structures would be dismantled and removed from the site while concrete footings would remain in place or be dismantled to ground-level.			
	APM BIO-14: Compensate for loss of valley elderberry longhorn beetle habitat and potential loss of individuals. The applicant would compensate for permanent and temporary loss of habitat and potential loss of individual VELB through participation in the Valley Elderberry Longhorn Beetle Conservation Program (PG&E 2003). The program was developed to compensate for trimming approximately 250 elderberry plants and removing approximately 20 plants per year. The applicant would continue to fund the recovery of VELB and increase habitat through acquisition, restoration, or protection of lands in areas that provide the greatest conservation to the species. Habitat locations identified during technical studies for the project would be added to the applicant's database or VELB habitat. Elderberry shrub	See requirements in APM BIO-14.	During construction and operations	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	locations and project activities would be incorporated in the applicant's biennial monitoring report. *Vernal Pool Species* APM BIO-15: Avoid or minimize impacts on habitat for vernal pool species during construction. The applicant would implement measures that would substantially reduce the risk of incidental take of vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot in the project area. Prior to and during construction, the applicant would perform the following actions: • Where feasible, the project would be designed to avoid direct and permanent impacts to vernal pool species and their habitat; new structures would be located outside of suitable habitat features; and work areas and access routes would be designed to avoid vernal pool habitats. • Where existing towers are located within a suitable habitat feature, the removal of those towers would be conducted in a way that minimizes potential ground disturbance. Lattice towers would be removed from habitat using a helicopter or crane lift so that construction equipment would not enter the habitat area. Existing foundations proposed to be removed from habitat would be demolished only to ground level to avoid unnecessary ground disturbances. • Conduct a preconstruction survey for Western spadefoot and monitor construction activities within suitable aquatic habitat. A USFWS-approved biologist would conduct a preconstruction survey in suitable habitat no more than 48 hours before construction and would be onsite during construction activity in potential aquatic habitat. The construction area would be resurveyed whenever there is a lapse in construction activity of two weeks or more. If a Western spadefoot is encountered within the construction	– Confirm that a preconstruction survey for Western spadefoot was completed no more than 48 hours before construction. Confirm that applicable field survey forms are submitted to DFG no more than 90 days after last field visit. – Monitor construction activities within 250 feet of suitable aquatic habitat for vernal pool species. – Confirm that within 1 week of completion of the project, all habitats subject to temporary ground disturbances are restored as described in APM BIO-15. – See additional requirements in APM BIO-15.	Prior to, during, and after construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	work area, the biologist would relocate the frog to a suitable aquatic habitat, outside the construction area. For each spadefoot encountered, the biologist would submit a completed CNDDB field survey form (or equivalent) to DFG no more than 90 days after completing the last field visit to the project site. • Temporary construction disturbances to vernal pools, seasonal wetlands, and ponds would be minimized to the extent practicable. All project-related vehicle traffic would be restricted to established roads, temporary access roads, or designated construction areas. • Ground-disturbing activities within 250 feet of suitable aquatic habitat would be conducted during the dry season (generally May 1 to October 15) where possible. Work areas where ground disturbing activities would likely be required during the wet season are shown in Appendix B-2. • If construction activities occur during the wet season, temporary silt fencing should be installed at the limits of the affected work areas to prevent amphibians from moving into the work areas. The location of the fencing would be determined by the environmental monitor and the construction supervisor. • An environmental monitor would monitor construction activities within 250 feet of suitable aquatic habitat for vernal pool species. • Plastic monofilament netting (erosion control matting) or similar material would not be used for erosion control or other purposes in the construction area because amphibians may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or hydro-seeding. • The applicant would implement BMPs to prevent sediment from entering aquatic habitat near the work			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	areas. Measures include silt fencing, sterile hay bales, no cleaning of equipment in drainages or other wetlands, and temporary sediment disposal. • Within 1 week of completion of the project, all habitats subject to temporary ground disturbances would be re-contoured, if appropriate in the opinion of the onsite biologist, and re-vegetated to promote restoration of the area to natural conditions.			
	APM BIO-16: Compensate for impacts to habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Consistent with the USFWS's existing programmatic consultation for vernal pool crustaceans, direct impacts on aquatic habitat for federally listed vernal pool crustaceans will be compensated through habitat preservation at a 2:1 ratio, and creation at a 1:1 ratio. The habitat preservation and creation will be achieved at a USFWS-approved conservation bank, or other location with comparable conservation values, subject to USFWS approval. Adequate funding, monitoring, and adaptive measures will be incorporated into the compensation program that will ensure the protected habitat is conserved in perpetuity.	See requirements in APM BIO-16.	During construction	
	Giant Garter Snake			
	APM BIO-2: Implement general protection measures for wetlands and other waters. During construction, the applicant would implement the following general measures to minimize or avoid impacts on wetlands and other waters: • Establish exclusion zones and minimize the amount of area disturbed to the minimum amount necessary to complete the work. • Restrict travel to established and temporary roads and work areas. • Restrict construction personnel and equipment from	Confirm that a SWPPP was prepared. Confirm that all fueling of vehicles occurs at least 100 feet from water bodies and 250 feet from wetlands and vernal pools. See additional requirements in APM BIO-2.	Prior to and during construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	entering fenced protected areas. • Conduct all fueling of vehicles at least 100 feet from water bodies and 250 feet from wetlands and vernal pools. • To the extent feasible, complete road construction in wetlands and other waters in the dry season, generally from June 1 to October 15. If it is not feasible to complete road construction work during the dry season, appropriate erosion control measures for the site would be used. Additionally, the applicant or its contractor would prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter Counties. These BMPs would be selected to achieve maximum sediment removal and represent the best available technology (BAT) that is economically achievable. (See APM HYDRO-1).			
	APM BIO-17: Minimize potential impacts on giant garter snake during construction within suitable habitat. To avoid and minimize impacts on giant garter snake, the applicant would implement the following measures: • As feasible, construction activity within giant garter snake aquatic and upland habitat in and around agricultural ditches would be conducted within the active period for giant garter snakes (between May 1 and October 1). Depending on weather conditions and consultation with USFWS and DFG, it may be possible to extend the construction period into mid or late October. This would reduce direct impacts on the species because the snakes would be active and may respond to construction activities by moving out of the way. • Prior to any construction within suitable giant garter	– Confirm that a USFWS-approved biologist conducted a preconstruction survey in suitable habitat no more than 24 hours before construction and is onsite during construction activity in potential aquatic and upland habitat. – Ensure adherence to requirements for ceasing construction work if a giant garter snake is encountered and notification of the USFWS within 24 hours and	Prior to, during, and after construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	snake aquatic habitat (agricultural ditches), the habitat would be dewatered and must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of dewatered habitat. • A USFWS-approved biologist would conduct a preconstruction survey in suitable habitat no more than 24 hours before construction and would be onsite during construction activity in potential aquatic and upland habitat. The construction area would be resurveyed whenever there is a lapse in construction activity of two weeks or more. • If a giant garter snake is encountered within the construction work area, construction activities must cease until the snake moves out of the work area unassisted. Capture and relocation of trapped or injured individuals can only be attempted by USFWS-permitted personnel. The applicant or its contractors would notify USFWS within 24 hours and submit a report, including dates, locations, habitat description, and any corrective measures taken to protect the snake(s) encountered. For each giant garter snake encountered, the biologist would submit a completed CNDDB field survey form (or equivalent) to DFG no more than 90 days after completing the last field visit to the project site. • Construction personnel would participate in a USFWS-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of giant garter snake and the terms and conditions of the BO. Proof of this instruction would be submitted to USFWS Sacramento field office. • To ensure that construction equipment and personnel do not affect giant garter snake aquatic habitat outside the construction work area, orange barrier fencing would be erected to clearly delineate the aquatic habitat to be	DFG within 90 days. – Confirm that a post-construction compliance report is submitted to the USFWS Sacramento field office within 60 days of project completion. – See additional requirements in APM BIO-17.		

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	avoided. • A post-construction compliance report prepared by a qualified biologist would be forwarded to the chief of the Endangered Species Division of USFWS Sacramento field office within 60 days after completion of the project. This report would include dates that construction occurred, pertinent information about the applicant's success in implementing project mitigation measures, an explanation of any failures to implement mitigation measures, any known project impacts on federally listed species, any occurrences of incidental take of federally listed species, and any other pertinent information.			
	APM BIO-18: Compensate for loss of aquatic and upland habitat for giant garter snake. Any giant garter snake habitat temporarily impacted by project related activities will be restored to pre-project conditions within the same season or, at most, the same calendar year. PG&E will conduct one year of monitoring consistent with a Habitat Monitoring Plan to include measurable criteria for restoration success, and a defined restoration and monitoring timeline. A monitoring report will be due to USFWS and DFG one year from the restoration implementation, including photo-documentation with pre- and post-project photos, and other information as specified in the monitoring plan. To compensate for the permanent loss of 0.12 acre of suitable habitat for giant garter snake, PG&E will purchase off-site giant garter snake habitat credits at a 3:1 ratio from a USFWS- and DFG- approved conservation bank.	Confirm that a Habitat Monitoring Plan was prepared and implemented as described in APM BIO-18. See additional requirements in APM BIO-18.	After construction	
	MM BIO-1 Rice field fallowing activities, berm construction and removal, and habitat restoration. The applicant will implement measures to insure the restoration of fallowed fields. Prior to, during, and/or after berm construction	See requirements in MM BIO-1.	During and after construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	and dewatering of potential giant garter snake rice field habitat, the applicant will adhere to measures within the Biological Opinion issued by the US Fish and Wildlife Service and any Incidental Take Permit/Consistency Determination issued by the California Department of Fish and Game.			
	Western Pond Turtle			
	APM BIO-19: **Conduct a preconstruction survey for western pond turtles and monitor construction activities within suitable aquatic and upland habitat.** To avoid construction-related impacts on northwestern pond turtles, the applicant would retain a qualified wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction in work areas that are within suitable upland habitat (grasslands within 1,300 feet of aquatic habitats). The preconstruction survey would be conducted in conjunction with giant garter snake and western spadefoot surveys. The wildlife biologist would look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If an adult western pond turtle is located in the construction area, the biologist would move the turtle to a suitable aquatic site, outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the applicant would consult DFG to determine and implement appropriate avoidance measures, which may include a "no-disturbance" buffer around the nest site until the hatchlings have moved to a nearby aquatic site.	Confirm that a preconstruction survey for western pond turtles was completed within 48 hours of construction. See additional requirements in APM BIO-19.	Prior to construction	
	Western Spadefoot			
	APM BIO-2: **Implement general protection measures for wetlands and other waters** (see above)			
	APM BIO-3: **Conduct mandatory contractor/worker**	See requirements in APM BIO-3.	Prior to	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	awareness training for construction personnel. Before the start of construction activities, the applicant shall ensure that a qualified biologist would conduct mandatory contractor/worker awareness training for construction personnel. The awareness training would be provided to all construction personnel to brief them on the need to avoid impacts on wetlands and on the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor would ensure that the personnel receive the mandatory training before starting work.		construction (during construction for new personnel)	
	APM BIO-4: Install construction barrier fencing to protect wetlands and other waters adjacent to the project area. The applicant or its contractor would install construction barrier fencing that clearly identifies wetlands that are to be avoided. Wetlands located within work areas would be fenced off to avoid disturbance in these areas. Before construction, the construction contractor would work with the project engineer and a resource specialist to identify the locations for the barrier fencing and would place stakes around the wetland areas to indicate their locations. The protected area would be designated an environmentally sensitive area and clearly identified on the construction specifications. Temporary fences would be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer.	See requirements in APM BIO-4.	Prior to construction	
	APM BIO-5: Restore temporarily impacted wetlands and other waters to pre-construction condition. • Minimize ground disturbance wherever possible. • Remove construction materials. • Save and replace topsoil and re-grade where necessary to pre-construction topographic contours. • Re-seed with native local weed-free seed source in highly disturbed areas.	See requirements in APM BIO-5.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	APM BIO-6: Monitor during and after disturbance in wetlands and other waters. • Monitor to avoid travel through wetlands and other waters wherever possible. • Monitor to assure that restoration to pre-construction condition is completed. • Monitor to make sure no noxious weed species are introduced. A Noxious Weed Survey was conducted prior to project initiation which contains a list of pre-existing weeds of concern. If weeds are introduced or spread initiate a Treatment Plan. • The length of time period for monitoring will be determined in consultation with resource agencies, with a 5 year monitoring period likely to be required.	Adhere to the monitoring requirements outlined in APM BIO-6 including monitoring after construction for a period likely to extend to 5 years.	During construction and operations	
	APM BIO-7: Compensate for permanent impacts on wetlands and other waters caused by new structures. Within the project study area there would be 56 new structures placed in wetlands and other waters. The placement of the new structures would result in a total of 0.054 acres of permanent impacts on wetlands and other waters. The applicant would compensate for permanent impacts on wetlands and other waters to ensure no net loss of wetland habitat functions and values. The compensation would be provided at a minimum ratio of 1:1 (1 acre restored or created for every acre filled), but final compensation ratios would be based on site-specific information and determined through coordination with 1) the U.S. Army Corps of Engineers (USACE), in consultation with the U.S. Fish and Wildlife Service (USFWS) for the Section 404 and Section 7 permit process; and 2) the California Department of Fish and Game (DFG) for the 2081 permit and Streambed Alteration Agreement.	See requirements in APM BIO-7.	During and after construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Compensation may be a combination of onsite restoration, offsite restoration and creation, and mitigation credits. Onsite creation will not be considered. The applicant would retain an environmental consultant with the appropriate design/engineering experience (e.g., restoration ecologist, hydrologic engineer, landscape architect) as needed to evaluate the project study area and determine if onsite wetland habitat restoration/creation is feasible. APM BIO-15: Avoid or minimize impacts on habitat for vernal pool species during construction (see above) APM BIO-16: Compensate for impacts to habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp (see above)			
	MM BIO-2: Reduce construction night lighting impacts on sensitive habitats. The applicant will implement measures to insure the reduction of construction night lighting impacts on sensitive habitats and special status wildlife. Exterior night lighting along the project route adjacent to aquatic and riparian habitat will be the lowest illumination allowed for human safety and selectively placed a minimum of 50 feet from those habitats except where workplace safety prevents this minimum distance. All construction night lighting will be shielded with cutoffs and/or shades. Vehicle traffic associated with nighttime project activities will be kept to a minimum volume and 15 mph on all non-public roads to prevent mortality of nocturnal wildlife species. *Green Sturgeon, Chinook Salmon, and Central Valley Steelhead* APM BIO-2: Implement general protection measures for	Confirm that all construction night lighting is shielded. See additional requirements in MM BIO-2.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	wetlands and other waters (see above) APM BIO-3: Conduct mandatory contractor/worker awareness training for construction personnel (see above) APM BIO-4: Install construction barrier fencing to protect wetlands and other waters adjacent to the project area (see above) APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see below) MM BIO-2: Reduce construction night lighting impacts on sensitive habitats (see above) *Swainson's Hawk*			
	APM BIO-22: Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season. To avoid removal of active nests, tree trimming, vegetation removal, and removal of towers with active nests or in close proximity to areas with active nest sites, should be conducted during the non-breeding season (generally August 16 through February 28).	See requirements in APM BIO-22.	During construction	
	APM BIO-23: Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds. Construction activities are anticipated to occur mainly during the nesting season for migratory birds and raptors (March 1–August 15). The applicant would retain a qualified wildlife biologist to conduct preconstruction surveys for nesting birds, for all construction activities that occur within or near suitable breeding habitat. Due to the long linear nature of the project, construction activities would be conducted in distinct sections of the transmission line. The preconstruction	Confirm that preconstruction surveys for nesting birds were conducted as specified in APM BIO-23. See additional requirements in APM BIO-23 for monitoring during construction, buffer zones, and the potential to halt construction.	Prior to and during construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	surveys would be conducted for each section no more than 1 week prior to the start of construction activities in that section. Surveys would cover all affected areas, which are the transmission line route, staging areas, pull sites, and areas of access road improvements where ground disturbance or vegetation clearing is required. Preconstruction surveys would be repeated if construction activities are dormant in a section for longer than 1 week. If surveys indicate that migratory bird or raptor nests occur in areas that would be directly affected by construction activities, a no-disturbance buffer would be established around the nest site to avoid disturbance or destruction of the nest site until after the breeding season or until a wildlife biologist determines that the young have fledged. Generally, the buffer zones are 50–100 feet for nesting passerine birds, 300 feet up to 2,640 feet for nesting raptors, and 500 feet up to 2,640 feet for golden eagles. However, the extent of these buffers would be determined through coordination with DFG and would depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors would be analyzed to make an appropriate decision on buffer distances. All active nests occurring in or near the project area would be monitored during construction by the onsite monitor for signs of stress. If the onsite monitor determines that birds on the nest are stressed, construction would be halted and PG&E would contact DFG to determine a further course of action.			
	APM BIO-24: **Avoid disturbance of active nests by helicopter use.** Use of helicopters would be restricted to necessary trips to install and remove poles, install transmission lines, and deliver and remove equipment to areas lacking vehicle access. If active nests occur under	See requirements in APM BIO-24.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	planned helicopter flight paths, coordination with DFG would be required to determine whether modification of the flight path is necessary to avoid disturbance of active nests. *White-Tailed Kite* APM BIO-22: Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season (see above) APM BIO-23: Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds (see above) APM BIO-24: Avoid disturbance of active nests by helicopter use (see above) *Northern Harrier* APM BIO-22: Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season (see above) APM BIO-23: Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds (see above) APM BIO-24: Avoid disturbance of active nests by helicopter use (see above) *Western Burrowing Owl* APM BIO-20: Conduct preconstruction surveys for active burrowing owl burrows. DFG (1995) recommends that preconstruction surveys be conducted at all construction sites	Confirm that preconstruction surveys were conducted for burrowing owl burrows as	Prior to construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	(except paved areas) in the project study area and in a 250-foot-wide buffer zone around the construction site to locate active burrowing owl burrows. The applicant would retain a qualified biologist to conduct preconstruction surveys for active burrows according to the DFG guidelines. Surveys typically include a nesting season survey and a wintering season survey. The surveys would cover all affected areas, including the transmission line route, staging areas, pull sites, and areas of access road improvements where ground disturbance is required. If no burrowing owls are detected, no further mitigation is required. If active burrowing owl burrows are detected, the applicant would implement APM BIO-21 (Implement DFG guidelines for burrowing owl mitigation, if necessary).	described in APM BIO-20. See additional requirements in APM BIO-20.		
	APM BIO-21: Implement DFG (1995) guidelines for burrowing owl mitigation, if necessary. The applicant would implement the following measures based on DFG Guidelines if active owl burrows are located within 250 feet of the project area. • Occupied burrows would not be disturbed during the nesting season (February 1–August 31). PG&E would consult with DFG to determine the appropriate no disturbance buffer around active burrows, if owls are located near the project area. • When destruction of an occupied burrow is unavoidable during the non-breeding season (September 1–January 31), unsuitable burrows would be enhanced (enlarged or cleared of debris) or new burrows created by installing artificial burrows at a ratio of 2:1 on protected lands approved by DFG. Newly created burrows would follow guidelines established by DFG. • If owls must be moved away from the project construction area, passive relocation techniques, such as installing one-way doors at the burrow entrance, would be used	See requirements in APM BIO-21 for active burrowing owl burrows located within 250 feet of the project route.	During construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	instead of trapping the owls. At least 1 week would be necessary to accomplish the passive relocation and allow the owls to acclimate to alternative burrows. • If active burrowing owl burrows are found and the owls must be relocated, the applicant would offset the loss of foraging and burrow habitat in the project construction area by acquiring and permanently protecting a minimum of 6.5 acres of foraging habitat per occupied burrow identified in the project construction area. The protected lands should be located adjacent to the occupied burrowing owl habitat in the project construction area or at another occupied site near the project construction area. The location of the protected lands would be determined in coordination with DFG. The applicant also would prepare a Monitoring Plan and provide long-term management and monitoring of the protected lands. The Monitoring Plan would specify success criteria, identify remedial measures, and require an annual report to be submitted to DFG. • Avoidance would be the preferred method of addressing potential impacts. Avoidance would involve preventing disturbance within 160 feet of occupied burrows during the nonbreeding season (September 1–January 31) or within 250 feet during the breeding season. Avoidance also requires that at least 6.5 acres of foraging habitat (calculated based on an approximately 300-foot foraging radius around an occupied burrow), contiguous with occupied burrow sites, be permanently preserved for each pair of breeding burrowing owls or single unpaired resident bird. The configuration of the protected site would be submitted to DFG for approval. MM BIO-2: Reduce construction night lighting impacts on sensitive habitats (see above)			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Tri-Colored Blackbird APM BIO-22: Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season (see above) APM BIO-23: Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds (see above) *California Black Rail* APM BIO-22: Conduct tree trimming, vegetation removal, and, if possible, tower removal during the non-breeding season (see above) APM BIO-23: Conduct preconstruction surveys for active special-status and non-special-status raptors and migratory birds (see above) APM BIO-24: Avoid disturbance of active nests by helicopter use (see above) *Bank Swallow* APM BIO-20: Conduct preconstruction surveys for active burrowing owl burrows (see above) APM BIO-21: Implement DFG (1995) guidelines for burrowing owl mitigation, if necessary (see above) MM BIO-2: Reduce construction night lighting impacts on sensitive habitats (see above) *Bats*			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	MM BIO-2: Reduce construction night lighting impacts on sensitive habitats (see above)			
b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see below) MM BIO-3: Riparian habitat impact minimization measures. The applicant will implement measures to insure the reduction of construction impacts on riparian habitats. No riparian trees or shrubs will be removed during construction outside of the existing ROW in PG&E-maintained areas unless required by CPUC General Order 95 and applicable safety codes. Herbaceous riparian vegetation will be restored to pre-construction conditions within 30 days of the end of construction. The applicant will contact the DFG prior to construction to determine whether a 1600 Streambed Alteration Agreement is necessary for the project.	Confirm that herbaceous riparian vegetation is restored to pre-construction conditions within 30 days of the end of construction. See additional requirements in MM BIO-3.	During and after construction	Less than significant
c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	APM BIO-2: Implement general protection measures for wetlands and other waters (see above) APM BIO-3: Conduct mandatory contractor/worker awareness training for construction personnel (see above) APM BIO-4: Install construction barrier fencing to protect wetlands and other waters adjacent to the project area (see above) APM BIO-5: Restore temporarily impacted wetlands and other waters to pre-construction condition (see above) APM BIO-6: Monitor during and after disturbance in wetlands and other waters (see above) APM BIO-7: Compensate for permanent impacts on wetlands and other waters caused by new structures (see			Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	above) APM BIO-12: Implement management practices to control the introduction and spread of invasive plants (see above) APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see below)			
d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*	APM BIO-2: Implement general protection measures for wetlands and other waters (see above) APM BIO-3: Conduct mandatory contractor/worker awareness training for construction personnel (see above) APM BIO-4: Install construction barrier fencing to protect wetlands and other waters adjacent to the project area (see above)			Less than significant
e. *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*	APM BIO-1: Conduct a preconstruction tree survey and avoid or compensate for tree removal. Prior to construction, the applicant would conduct a tree survey to map and identify any protected trees in the Project that may be affected by the project. If feasible, the identified trees would be avoided during construction. If avoidance is not feasible, trees would be replaced or compensation would be provided, as stipulated in applicable local regulations. MM BIO-4: Adherence to Policy 116-OSCP through Policy 118-OSCP under Goal 7-OSCG of the Yuba County General Plan, provisions for Valley oak. Yuba County policies concerning Valley oak, if these species would be impacted by project activities, shall be followed. Specific mitigation measures should be designated and implemented by the applicant regarding Valley oak to adhere to the following Yuba County policies: • Policy 116-OSCP: Project proponent shall identify and map the location of all Valley oaks within the project area.	Confirm that a preconstruction tree survey was conducted as described in APM BIO-1. See additional requirements in APM BIO-1. Confirm that all Valley oak along the project route were mapped and a protection plan was submitted to Yuba County as described in MM BIO-4. See additional requirements in MM BIO-4.	Prior to and during construction Prior to and during construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Identification need not include individual trees where groves of Valley oaks are present, and need not include trees less than 6 inches in diameter at breast height. • Policy 117-OSCP: The following guidelines shall be implemented by the project proponent: - During any construction, fill should not be placed within an area which is 1.5 times the distance from the trunk to the dripline (the perimeter of the crown) of Valley oaks and no closer than 10 feet from the trunk. The dripline of the tree should be fenced during grading and construction. - Soil compaction, which could damage root systems and interfere with vital gas and nutrient exchanges in the roots, should be prevented by not operating or storing heavy equipment within oak driplines. - Excavations around trees should be minimized. Depth of excavations should be the minimum required. Utility lines should be combined in single trenches whenever possible. - If roots need to be removed, they should be cut rather than torn and immediately covered with mulch or soil to prevent desiccation. - Submit a Tree Protection Plan to Yuba County along with grading and erosion control plans when Valley oaks are present [within construction work areas]. The Tree Protection Plan should include a planting replacement program for all Valley oaks removed, including maintenance and monitoring program, and should also show how any snags present on the site would be retained where feasible when they do not pose a threat to public safety. • Policy 118-OSCP: Based on the amount of existing Valley oak canopy area on the project site, the determined amount of canopy must be retained [unless			

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	required by CPUC General Order 95 and applicable safety codes].			
3.5 Cultural Resources				
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	APM CR-1: Stop work if previously unknown cultural resources are discovered. If buried cultural resources such as chipped or ground stone, historic debris, or building foundations are inadvertently discovered during site preparation or construction activities, work would stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the applicant and other appropriate agencies. (With the archaeologist's approval, work may continue on other portions of the site.) The applicant would be responsible for ensuring that the archaeologist's recommendations for treatment are implemented.	See requirements in APM CR-1.	During construction	Less than significant
c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	APM CR-2: Stop work if previously unknown paleontological resources are discovered. Training should be conducted for construction personnel, and work should be ceased if paleontological resources are encountered. Construction is defined to include any excavation, paving, building construction, or landscaping.	Confirm that training was conducted as described in APM CR-2.	Prior to construction	Less than significant
	MM CR-1: Paleontological Resources Treatment Plan. Prior to construction, a Paleontological Resources Treatment Plan will be prepared that addresses the treatment of paleontological resources that may be discovered during construction. This Plan, prepared by a qualified paleontologist, will include procedures for paleontological onsite monitoring, significance testing, and data recovery. Paleontological monitor(s) must be present during all ground disturbing activities where the underlying geology has high sensitivity for fossil resources unless the vertical disturbance will not impact the underlying geology or is located in a highly disturbed area as identified by a qualified paleontologist.	Confirm that a Paleontological Resources Treatment Plan was prepared as described in MM CR-1. See additional requirements in MM CR-1.	Prior to and during construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
d. Would the project disturb any human remains, including those interred outside of formal cemeteries?	APM CR-3: Stop work if human remains are discovered. If human remains are encountered during site preparation or construction, work will stop within a 100-foot radius of the find and the county coroner will be notified immediately, as required by state law *(California Health and Safety Code [CHSC]. 7050.5)*. A qualified archaeologist also will be notified immediately. If the county coroner determines that the remains are Native American, the coroner will contact the NAHC, pursuant to *CHSC 7050.5[c]*. There will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the county coroner has determined that (1) no investigation of the cause of death is required; and (2) if the remains are of Native American origin, the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of with appropriate dignity the human remains and any associated grave goods as provided in *PRC 5097.98*—unless the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 48 hours after being notified by the commission.	See requirements in APM CR-3.	During construction	Less than significant
3.6 Geology and Soils				
a. Would the project 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*	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards. For overhead transmission lines, tower replacement(s), and any other associated project activities, site-specific, design-level geotechnical investigations will be performed at specific locations where required to evaluate the potential for the presence of soft and/or loose soils, unstable slopes, surface fault rupture, ground shaking, liquefaction hazard, slope stability in the vicinity of river crossings, and expansive soils.	Confirm that geotechnical investigations were conducted and pole locations adjusted accordingly as described in APM GEO-1. See additional requirements in APM GEO-1.	Prior to construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
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.	Where significant potential for these hazards exists, pole locations will be adjusted when possible in order to minimize any potential for damage.			
ii) Strong seismic ground shaking?	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant
iii) Seismic-related ground failure, including liquefaction?	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant
iv) Landslides?	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant
b. Would the project result in substantial soil erosion or the loss of topsoil?	APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see below) APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
c. *Would the project 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?*	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant
d. *Would the project 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?*	APM GEO-1: Incorporate measures identified in geotechnical report/use of standard engineering practices to mitigate for individual site specific and design-specific hazards (see above)			Less than significant
3.7 Greenhouse Gas Emissions				
a. *Would the project generate greenhouse gas emissions, either directly or indirectly that may have a significant impact on the environment?*	APM AIR-3: Minimize greenhouse gas emissions during construction (see above)			Less than significant
3.8 Hazards and Hazardous Materials				
a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*	APM HAZ-1: Implement a Spill Prevention Plan. A Spill Prevention Plan would be implemented for each staging area, and workers would receive written instructions and training on the Plan. This Plan would include: • A Hazardous Substance Control and Emergency Response Plan addressing preparations for quick and safe cleanup of accidental spills. The Plan would prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and	Confirm that a Spill Prevention Plan, including a Hazardous Substance Control and Emergency Response Plan and an Environmental Training and Monitoring Program, was prepared and implemented as described in APM HAZ-1.	Prior to and during construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	include an emergency response program. The Plan would identify areas where refueling and vehicle maintenance activities and storage of hazardous materials would be permitted. • An Environmental Training and Monitoring Program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and applicable best management practices to all construction and operations personnel. A monitoring program would be implemented to ensure that the plans are followed during project construction. APM HYDRO-1: Prepare and implement a storm water pollution prevention plan. (see below)			
b. Would the project 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?	APM HAZ-1: Implement a Spill Prevention Plan (see above) APM HYDRO-1: Prepare and implement a storm water pollution prevention plan. (see below)			Less than significant
c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	APM HAZ-1: Implement a Spill Prevention Plan (see above)			Less than significant
d. Would the project be located on a site which is included on a list of hazardous materials sites	APM HAZ-1: Implement a Spill Prevention Plan (see above) APM HAZ-2: Conduct construction soil sampling and testing if soil contamination is suspected. The applicant	See requirements in APM HAZ-2.	Prior to and during	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	would conduct soil sampling along the project alignment, as needed, before construction begins. Soil information would be provided to construction crews, to inform them about soil conditions and potential hazards. In the event that contaminated soil is encountered during excavation activities along the transmission line alignment, work would be stopped and the soil would be segregated and tested to determine appropriate disposal and treatment options. If the soil test results positive for hazardous materials, the soil would be properly handled, transported, and disposed of in accordance with federal, state, and local regulations.		construction	
	APM HAZ-3: Conduct groundwater sampling and testing if suspected contaminated groundwater is encountered during construction. If suspected contaminated groundwater is encountered in the proposed project construction areas, samples would be collected and submitted for analysis of petroleum hydrocarbons, metals, volatile organic compounds, and semi-volatile organic compounds. If necessary, groundwater would be collected during construction, contained, and disposed of in accordance with all applicable regulations.	See requirements in APM HAZ-3.	During construction	
	MM HAZ-1: Contaminated Soil and Groundwater Contingency Plan. The applicant shall integrate the proposed sampling protocols described in APM HAZ-2 and APM HAZ-3 into a project construction-specific contingency plan to address potential for unearthing or exposing buried hazardous materials or contamination or shallow contaminated groundwater during construction activities. The plan shall detail the preventive actions that the applicant or its contractor would take to prevent the migration of contaminated soils or other materials offsite and the remedial action that would be undertaken. Site-specific plans should be developed for the areas where there is a high probability of encountering shallow	Confirm that site-specific plans were developed for areas where there is a high probability of encountering shallow contaminated soil or groundwater within 20 feet of the ground surface. See additional requirements in MM HAZ-1.	Prior to construction	

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	contaminated soil or groundwater within 20 feet of the ground surface and the depth of construction.			
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?*	APM HAZ-4: Develop and Implement a Helicopter Lift Plan. The applicant would require the helicopter vendor to prepare a Helicopter Lift Plan for approval by the FAA prior to any construction helicopter operations. Any specific transportation needs (e.g., temporary road closures) would be identified in the Plan and would be coordinated with the appropriate jurisdictions.	Confirm that a Helicopter Lift Plan was prepared as described in APM HAZ-4.	Prior to construction	Less than significant
g. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*	APM HAZ-5: Prepare a Health and Safety Plan. The applicant would prepare a Health and Safety Plan that would address emergency medical services to be provided in case of an emergency. The Plan would list procedures, specific emergency response, and evacuation measures to be followed during emergencies. The applicant would prepare this manual and distribute it to all the applicant and contract workers involved in the project prior to construction and during operation of the proposed project. The applicant would provide project maps to emergency personnel, which describe tower and pole locations as well as access roads, to ensure proper emergency response to all parts of the proposed project alignment.	Confirm that a Health and Safety Plan and project maps were prepared and circulated as described in APM HAZ-5.	Prior to construction and during operations	Less than significant
h. *Would the project 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?*	APM HAZ-6: Develop and Implement a Fire Risk Management Plan. The applicant follows a standard practice of developing and implementing a Fire Risk Management Plan that addresses fire-suppression equipment and procedures to be used during construction and training of construction and maintenance crews. Additionally, fire suppression equipment and materials would be kept adjacent to all areas of work and in staging areas, and would be clearly marked. Detailed information for responding to fires would be provided in the project's Fire Risk Management Plan. Information contained in the Plan and location of fire-suppression materials and equipment would be included as part of the employee environmental training discussed in APM HAZ-1. Furthermore,	Confirm that a Fire Risk Management Plan was prepared and implemented as described in APM HAZ-6. See additional requirements in APM HAZ-6.	Prior to and during construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	water tanks would be sited in the project area to protect against fire, and all vehicles shall carry fire suppression equipment. The applicant would contact and coordinate with local and county fire departments to determine the minimum amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks.			
3.9 Hydrology and Water Quality				
a. *Would the project violate any water quality standards or waste discharge requirements?*	APM HYDRO-1: **Prepare and implement a storm water pollution prevention plan.** The applicant or its contractor would prepare and implement an SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter Counties. These BMPs would be selected to achieve maximum sediment removal and represent the BAT that is economically achievable. BMPs to be implemented as part of the project-specific SWPPP may include, but are not limited to, the following control measures. • Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) would be employed to control erosion from disturbed areas. • Drainage facilities in downstream offsite areas would be protected from sediment using BMPs acceptable to Butte, Sutter, and Yuba Counties and the CVRWQCB. • Pervious/porous pavement would be used to reduce runoff when economically feasible. The pavement is a unique cement-based concrete product with a porous structure, which allows rainwater to pass directly through the pavement and into the soil.	Confirm that a SWPPP was prepared and implemented as described in APM HYDRO-1.	Prior to and during construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	Vegetative cover would be established on the disturbed areas as soon as possible after disturbance. Final selection of BMPs would be subject to review by the applicant. APM HYDRO-2: **Develop and implement a spill prevention control and countermeasure plan.** The applicant or its contractor would develop and implement an SPCCP to minimize the potential for, and effects of, spills of hazardous, toxic, or petroleum substances during all construction activities. The SPCCP would be completed and included in the SWPPP before any construction activities begin. The applicant would routinely inspect the construction areas to verify that the control measures specified in the SPCCP are properly implemented and maintained. The applicant would notify its contractors immediately if there is a noncompliance issue and would require compliance. If an appreciable spill occurs, a detailed analysis would be performed by a registered environmental assessor to identify the likely cause of contamination. This analysis would conform to American Society for Testing and Materials (ASTM) standards and would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the applicant and its contractors would select and implement additional measures to control contamination, with a performance standard that groundwater quality and surface water quality must be returned to baseline conditions.	Confirm that a SPCCP was prepared and implemented as described in APM HYDRO-2.	Prior to and during construction	
c. *Would the project 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*	APM HYDRO-1: **Prepare and implement a storm water pollution prevention plan** (see above) APM HYDRO-3: **Perform a drainage study and comply with setback requirements and county standards.** A drainage study would be performed for all of the areas that require grading and new roadways in addition to placement of tower footings in the 100-year floodplain. The drainage study	Confirm that a drainage study was completed and results incorporated into the design of the project as described in APM HYDRO-3. Confirm compliance	Prior to construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
or siltation on- or off-site?	would include calculations for the potential increases in stormwater runoff from related construction activities. The study would also include drainage improvements to minimize the risk of flooding to downstream areas based on any potential increase in flood areas from the proposed project. The applicant would incorporate the recommendation s for the drainage study into construction plans and would comply with county standards for construction in 100-year floodplains.	with county standards for construction in 100-year floodplains.		
e. *Would the project 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?*	APM HYDRO-3: Perform a drainage study and comply with setback requirements and county standards (see above)			Less than significant
f. *Would the project otherwise substantially degrade water quality?*	APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see above) APM HYDRO-2: Develop and implement a spill prevention control and countermeasure plan (see above)			Less than significant
h. *Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*	APM HYDRO-3: Perform a drainage study and comply with setback requirements and county standards (see above)			Less than significant
i. *Would the project 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?*	APM HYDRO-3: Perform a drainage study and comply with setback requirements and county standards (see above)			Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
3.10 Land Use and Planning				
No applicable APMs or mitigation measures.				
3.11 Mineral Resources				
No applicable APMs or mitigation measures.				
3.12 Noise				
d. Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	APM NOISE-1: Employ noise-reducing construction practices during temporary reconstruction activities. The applicant would employ noise-reducing construction practices so that noise produced by construction activities is in compliance with applicable local noise level standards and ordinances where feasible. Measures to be implemented may include but are not limited to the measures listed here. • Ensure that all equipment is equipped with mufflers that meet or exceed factory new equipment standards. • Locate stationary equipment as far as practical from noise sensitive receptors. • Limit unnecessary engine idling. • Use equipment that is specifically designed for low noise emissions and employ equipment that is powered by electric or natural gas engines as opposed to those powered by diesel or gasoline reciprocating engines. • In the vicinity of noise-sensitive receptors, use cranes wherever feasible as opposed to helicopters to install poles and replace transmission towers. • Design helicopter flight paths over land use areas that are not noise sensitive (i.e. agricultural and vacant). • Locate helicopter staging areas as far from residential locations as is practical. • Limit all construction activity in urban areas to the hours of 7 a.m. to 7 p.m. Monday through Saturday. • Use temporary enclosures or noise barriers (i.e. wood and/or noise blankets) around loudest pieces of	Confirm that all of the requirements in APM NOISE-1 are followed including limiting all construction activity in urban areas to the hours of 7 a.m. to 7 p.m., Monday through Saturday, and scheduling construction activities within 300 feet of schools on days when classes are not in session.	During construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	equipment when practical and necessary. • Notify communities and neighborhoods that would be most heavily impacted by construction activities, including but not limited to written notice and the posting of signs with contractor contact number on construction site fences. Signs would also include contact details for the PG&E noise complaint officer for the project. • Locate vehicle access roads as far from noise sensitive receptors as practical. • Schedule construction activities that would occur within 300 feet of schools and learning institutions (such as Yuba Community College) on days when classes are not in session. • PG&E proposes that night work not occur in urban areas or areas with substantial concentrations of residences.			
3.13 Population and Housing				
No applicable APMs or mitigation measures.				
3.14 Public Services				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: *a. Fire protection?*	APM HAZ-5: Prepare a health and safety plan. (see above) APM HAZ-6: Develop and implement a fire risk management Plan. (see above) APM PS-1: Maintain secured facilities during construction activities. The applicant would implement the following measures during construction activities. • All unattended equipment would be locked and secured at the most secure locations available. • Contract security would be made available for use at active pull/tension sites, lay-down, and storage areas outside work hours. • All open holes would be covered and secured once activity at that location stops (after hours).	See requirements in APM PS-1.	During construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
	• Anchor bolts on foundations without structures would be capped. Safety structures would be placed at road crossings during overhead wire installation activity to protect traffic and pedestrians.			
3.15 Recreation				
No applicable APMs or mitigation measures.				
3.16 Transportation/Traffic				
a. *Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*	APM AIR-4: Implement SMMs (see above) MM TRAN-1: Construction Notification. PG&E will provide advance notice to nearby airports, railroads, and schools in the project vicinity regarding construction activities.	See requirements in MM TRAN-1.	Prior to construction	Less than significant
b. *Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other*	APM AIR-4: Implement SMMs (see above) APM TRAN-1: Restriction of Simpson Lane during p.m. peak hours. During p.m. peak hours, Simpson Land shall not be used by the project for construction related activities.	See requirements in APM TRAN-1.	During construction	Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
standards established by the county congestion management agency for designated roads or highways?				
c. *Would the project 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?*	APM HAZ-4: Develop and Implement a Helicopter Lift Plan. (see above)		Prior to construction	Less than significant
d. *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*	APM AIR-4: Implement SMMs (see above) APM HAZ-4: Develop and Implement a Helicopter Lift Plan (see above) MM TRAN-1: Construction Notification (see above)			Less than significant
e. *Would the project result in inadequate emergency access?*	APM AIR-4: Implement SMMs (see above) APM HAZ-5: Prepare a Health and Safety Plan (see above) APM HAZ-6: Develop and implement a fire risk management Plan (see above)			Less than significant
3.17 Utilities and Service Systems				
c. *Would the project 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?*	APM HYDRO-1: Prepare and implement a storm water pollution prevention plan (see above)			Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
f. *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*	APM AIR-3: Minimize greenhouse gas emissions during construction (see above)			Less than significant
3.18 Mandatory Findings of Significance				
a. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*	APM BIO-1 through BIO-24 (see above) APM CR-1 through CR-3 (see above) MM BIO-1: Rice field fallowing activities, berm construction and removal, and habitat restoration (see above) MM BIO-2: Reduce construction night lighting impacts on sensitive habitats (see above) MM BIO-3: Riparian habitat impact minimization measures (see above) MM BIO-4: Adherence to Policy 116-OSCP through Policy 118-OSCP under Goal 7-OSCG of the Yuba County General Plan, provisions for Valley oak (see above) MM CR-1: Paleontological Resources Treatment Plan (see above)			Less than significant

Table 5-1 Mitigation Monitoring, Reporting, and Compliance Plan

CEQA Checklist Questions	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)	Monitoring Requirements	Timing	Level of Significance After Mitigation
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	APM AIR-1 through AIR-6 (see above)			Less than significant
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	APM HAZ-1 through HAZ-6 (see above) MM HAZ-1: Contaminated Soil and Groundwater Contingency Plan (see above)			Less than significant

This page intentionally left blank