# PROPONENT'S ENVIRONMENTAL ASSESSMENT

# SOUTH OF PALERMO 115 KV POWER LINE REINFORCEMENT PROJECT

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# TABLE OF CONTENTS

*Chapter/Section* *Page*

**Acronyms** ..... **viii**

**Index to CPUC Requirements** ..... **xvii**

**1.0 PEA Summary** ..... **1-1**
1.1 Introduction ..... 1-1
1.2 Organization of the PEA ..... 1-1
**2.0 Project Description** ..... **2-1**
2.1 Overview ..... 2-1
2.2 Project Objective, Purpose, and Need ..... 2-2
2.3 Project Location ..... 2-3
2.3.1 South of Palermo Line ..... 2-3
2.3.2 Palermo Sub Line Segment ..... 2-3
2.3.3 Pease Sub Line Segment ..... 2-3
2.3.4 Bogue Sub Line Segment ..... 2-4
2.3.5 Rio Oso Sub Line Segment Loop ..... 2-4
2.4 Existing System ..... 2-4
2.5 Proposed Project ..... 2-4
2.5.1 South of Palermo Line ..... 2-5
2.5.2 Palermo Sub Line Segment ..... 2-5
2.5.3 Pease Sub Line Segment ..... 2-5
2.5.4 Bogue Sub Line Segment ..... 2-6
2.5.5 Rio Oso Sub Line Segment Loop ..... 2-6
2.5.6 Substations ..... 2-6
2.6 Project Components ..... 2-7
2.6.1 Reconductoring ..... 2-7
2.6.2 New and Modified Structures ..... 2-8
2.6.3 Temporary Structures ..... 2-9
2.7 Right-of-Way Requirements ..... 2-10
2.8 Construction ..... 2-10
2.8.1 Power Line Construction ..... 2-10
2.8.2 Construction Workforce and Equipment ..... 2-14
2.8.3 Work Areas ..... 2-16
2.8.4 Pull Sites ..... 2-17
2.8.5 Helicopter Landing Zones ..... 2-17
2.8.6 Access Routes ..... 2-18

2.8.7 Erosion and Sediment Control and Pollution Prevention during Construction ..... 2-18
2.8.8 Best Management Practices ..... 2-19
2.8.9 Cleanup and Postconstruction Restoration ..... 2-20
2.8.10 Construction Schedule ..... 2-20
2.9 Operation and Maintenance ..... 2-20
2.10 Anticipated Permits and Approvals ..... 2-20
2.11 Applicant-Proposed Measures ..... 2-21
**3.0 Environmental Assessment Summary ..... 3-1**
Introduction ..... 3-1
3.1 Aesthetics ..... 3.1-1
3.1.1 Introduction ..... 3.1-1
3.1.2 Regulatory Background and Methodology ..... 3.1-1
3.1.3 Environmental Setting ..... 3.1-6
3.1.4 Applicant-Proposed Measures and Potential Impacts ..... 3.1-10
3.1.5 References ..... 3.1-14
3.2 Agricultural and Forest Resources ..... 3.2-1
3.2.1 Introduction ..... 3.2-1
3.2.2 Regulatory Background and Methodology ..... 3.2-1
3.2.3 Environmental Setting ..... 3.2-3
3.2.4 Applicant-Proposed Measures and Potential Impacts ..... 3.2-4
3.2.5 References ..... 3.2-7
3.3 Air Quality ..... 3.3-1
3.3.1 Introduction ..... 3.3-1
3.3.2 Regulatory Background and Methodology ..... 3.3-2
3.3.3 Environmental Setting ..... 3.3-6
3.3.4 Applicant-Proposed Measures and Potential Impacts ..... 3.3-9
3.3.5 References ..... 3.3-20
3.4 Biological Resources ..... 3.4-1
3.4.1 Introduction ..... 3.4-1
3.4.2 Regulatory Background and Methodology ..... 3.4-2
3.4.3 Environmental Setting ..... 3.4-12
3.4.4 Applicant-Proposed Measures and Potential Impacts ..... 3.4-39
3.4.5 References ..... 3.4-56
3.5 Cultural Resources ..... 3.5-1
3.5.1 Introduction ..... 3.5-1
3.5.2 Regulatory Background and Methodology ..... 3.5-1
3.5.3 Environmental Setting ..... 3.5-9
3.5.4 Applicant-Proposed Measures and Potential Impacts ..... 3.5-40
3.5.5 References ..... 3.5-45

3.6 Geology and Soils ..... 3.6-1
3.6.1 Introduction ..... 3.6-1
3.6.2 Regulatory Background and Methodology ..... 3.6-2
3.6.3 Environmental Setting ..... 3.6-3
3.6.4 Applicant-Proposed Measures and Potential Impacts ..... 3.6-11
3.6.5 References ..... 3.6-16
3.7 Greenhouse Gas Emissions ..... 3.7-1
3.7.1 Introduction ..... 3.7-1
3.7.2 Regulatory Background and Methodology ..... 3.7-1
3.7.3 Environmental Setting ..... 3.7-5
3.7.4 Applicant-Proposed Measures and Potential Impacts ..... 3.7-5
3.7.5 References ..... 3.7-9
3.8 Hazards and Hazardous Material ..... 3.8-1
3.8.1 Introduction ..... 3.8-1
3.8.2 Regulatory Background and Methodology ..... 3.8-2
3.8.3 Environmental Setting ..... 3.8-7
3.8.4 Applicant-Proposed Measures and Potential Impacts ..... 3.8-12
3.8.5 References ..... 3.8-20
3.9 Hydrology and Water Quality ..... 3.9-1
3.9.1 Introduction ..... 3.9-1
3.9.2 Regulatory Background and Methodology ..... 3.9-2
3.9.3 Environmental Setting ..... 3.9-5
3.9.4 Applicant-Proposed Measures and Potential Impacts ..... 3.9-11
3.9.5 References ..... 3.9-17
3.10 Land Use and Planning ..... 3.10-1
3.10.1 Introduction ..... 3.10-1
3.10.2 Regulatory Background and Methodology ..... 3.10-1
3.10.3 Environmental Setting ..... 3.10-2
3.10.4 Applicant-Proposed Measures and Potential Impacts ..... 3.10-4
3.10.5 References ..... 3.10-5
3.11 Mineral Resources ..... 3.11-1
3.11.1 Introduction ..... 3.11-1
3.11.2 Regulatory Background and Methodology ..... 3.11-1
3.11.3 Environmental Setting ..... 3.11-2
3.11.4 Applicant-Proposed Measures and Potential Impacts ..... 3.11-2
3.11.5 References ..... 3.11-4
3.12 Noise ..... 3.12-1
3.12.1 Introduction ..... 3.12-1
3.12.2 Regulatory Background and Methodology ..... 3.12-4
3.12.3 Methodology ..... 3.12-7

3.12.4 Environmental Setting ..... 3.12-7
3.12.5 Applicant-Proposed Measures and Potential Impacts ..... 3.12-8
3.12.6 References ..... 3.12-14
3.13 Population and Housing ..... 3.13-1
3.13.1 Introduction ..... 3.13-1
3.13.2 Regulatory Background and Methodology ..... 3.13-1
3.13.3 Environmental Setting ..... 3.13-1
3.13.4 Applicant-Proposed Measures and Potential Impacts ..... 3.13-5
3.13.5 References ..... 3.13-6
3.14 Public Services ..... 3.14-1
3.14.1 Introduction ..... 3.14-1
3.14.2 Regulatory Background and Methodology ..... 3.14-1
3.14.3 Environmental Setting ..... 3.14-2
3.14.4 Applicant-Proposed Measures and Potential Impacts ..... 3.14-6
3.14.5 References ..... 3.14-8
3.15 Recreation ..... 3.15-1
3.15.1 Introduction ..... 3.15-1
3.15.2 Regulatory Background and Methodology ..... 3.15-1
3.15.3 Environmental Setting ..... 3.15-2
3.15.4 Applicant-Proposed Measures and Potential Impacts ..... 3.15-4
3.15.5 References ..... 3.15-5
3.16 Transportation and Traffic ..... 3.16-1
3.16.1 Introduction ..... 3.16-1
3.16.2 Regulatory Background and Methodology ..... 3.16-2
3.16.3 Environmental Setting ..... 3.16-5
3.16.4 Applicant-Proposed Measures and Potential Impacts ..... 3.16-10
3.16.5 References ..... 3.16-14
3.17 Utilities and Service Systems ..... 3.17-1
3.17.1 Introduction ..... 3.17-1
3.17.2 Regulatory Background and Methodology ..... 3.17-2
3.17.3 Environmental Setting ..... 3.17-3
3.17.4 Applicant-Proposed Measures and Potential Impacts ..... 3.17-9
3.17.5 References ..... 3.17-12
3.18 Mandatory Findings of Significance and Cumulative Impact Analysis ..... 3.18-1
3.18.1 Introduction and Methodology ..... 3.18-1
3.18.2 Mandatory Findings of Significance ..... 3.18-1
3.18.3 Cumulative Impacts ..... 3.18-4
3.18.4 Key Projects in the Project Vicinity ..... 3.18-4
3.18.5 Analysis of Cumulative Impacts ..... 3.18-7
3.18.6 References ..... 3.18-10

## List of Figures

*Follows Page*


| | | |
|---|---|---|
| Figure 2.3-1 | Project Overview Map | 2-4 |
| Figure 2.3-2 | Circuit Design | 2-4 |
| Figure 2.3-3 | Existing Transmission Facilities | 2-4 |
| Figure 2.6-1 | Typical Single-Circuit Hybrid Pole Designs | 2-8 |
| Figure 2.6-2 | Typical Single-Circuit Tubular Steel Pole Design | 2-8 |
| Figure 2.6-3 | Typical Single-Circuit Lattice Steel Pole Design | 2-8 |
| Figure 2.6-4 | Typical Double-Circuit Pole Designs | 2-10 |
| Figure 2.8-1 | Preliminary Landing Zones and Pull Sites | 2-18 |
| Figure 3.1-1 | Landscape Units and Photograph Viewpoint Locations | 3.1-6 |
| Figure 3.1-2 | Landscape Unit 1 Photographs | 3.1-6 |
| Figure 3.1-3 | Landscape Unit 2 Photographs | 3.1-6 |
| Figure 3.1-4 | Landscape Unit 3 Photographs | 3.1-6 |
| Figure 3.1-5A | Key Observation Point #4 | 3.1-12 |
| Figure 3.1-5B | Key Observation Point #4 | 3.1-12 |
| Figure 3.1-6A | Key Observation Point #14 | 3.1-12 |
| Figure 3.1-6B | Key Observation Point #14 | 3.1-12 |
| Figure 3.1-7A | Key Observation Point #20 | 3.1-12 |
| Figure 3.1-7B | Key Observation Point #20 | 3.1-12 |
| Figure 3.1-8A | Key Observation Point #25 | 3.1-12 |
| Figure 3.1-8B | Key Observation Point #25 | 3.1-12 |
| Figure 3.2-1 | Agricultural Resources | 3.2-4 |
| Figure 3.4-1 | Sensitive Vegetation Communities with the Study Area | 3.4-14 |
| Figure 3.6-1 | Regional Fault Lines | 3.6-8 |
| Figure 3.9-1 | Major Surface Water Features in the Project Area | 3.9-6 |
| Figure 3.10-1 | Butte County General Plan Land Use and Zoning Designations | 3.10-2 |
| Figure 3.10-2 | Yuba County General Plan Land Use and Zoning Designations | 3.10-2 |
| Figure 3.10-3 | Sutter County General Plan Land Use and Zoning Designations | 3.10-2 |
| Figure 3.15-1 | Schools, Parks, and Recreational Facilities within ½ Mile of Project Alignment | 3.15-4 |
| Figure 3.16-1 | Roadways Crossed in Butte County | 3.16-6 |
| Figure 3.16-2 | Roadways Crossed in Yuba County Map 1 | 3.16-8 |
| Figure 3.16-3 | Roadways Crossed in Yuba County Map 2 | 3.16-8 |
| Figure 3.16-4 | Roadways Crossed in Sutter County | 3.16-8 |

## List of Tables

*Page*


Table 2.8-1 Summary of Typical Structure Dimensions ..... 2-11
Table 2.8-2 Typical Construction Workers and Equipment ..... 2-15
Table 2.8-3 Anticipated Construction Equipment ..... 2-16
Table 2.8-4 Access Summary Table ..... 2-18
Table 2.10-1 Permits and Approvals that May be Required ..... 2-21
Table 2.11-1 Applicant-Proposed Measures ..... 2-22
Table 3.1-1 CEQA Checklist for Aesthetics ..... 3.1-1
Table 3.2-1 CEQA Checklist for Agricultural and Forest Resources ..... 3.2-1
Table 3.3-1 CEQA Checklist for Air Quality ..... 3.3-1
Table 3.3-2 Ambient Air Quality Standards ..... 3.3-3
Table 3.3-3 Ambient Air Quality Monitoring Data from the Yuba City Monitoring Station (2012–2014) ..... 3.3-7
Table 3.3-4 Attainment Status for Criteria Pollutants of Concern ..... 3.3-9
Table 3.3-5 BCAQMD Significance Thresholds for Criteria Pollutants of Concern ..... 3.3-10
Table 3.3-6 FRAQMD Significance Thresholds for Criteria Pollutants of Concern ..... 3.3-10
Table 3.3-7 Construction-Related Emissions within BCAQMD's Jurisdiction (Unmitigated) ..... 3.3-14
Table 3.3-8 Construction-Related Emissions within FRAQMD's Jurisdiction (Unmitigated) ..... 3.3-15
Table 3.3-9 Construction-Related Emissions within BCAQMD's Jurisdiction (Mitigated without Off-site Mitigation) ..... 3.3-16
Table 3.3-10 Construction-Related Emissions within FRAQMD's Jurisdiction (Mitigated without Off-site Mitigation) ..... 3.3-17
Table 3.3-11 Annual Construction-Related Emissions within FRAQMD's Jurisdiction (Mitigated) ..... 3.3-18
Table 3.4-1 CEQA Checklist for Biological Resources ..... 3.4-1
Table 3.4-2 Special-Status Plant Species Identified as Potentially Occurring in the Project Area ..... 3.4-19
Table 3.4-3 Special-Status Wildlife Species ..... 3.4-22
Table 3.5-1 CEQA Checklist for Cultural and Paleontological Resources ..... 3.5-1
Table 3.5-2 Paleontological Sensitivity Ratings Employed ..... 3.5-7
Table 3.6-1 CEQA Checklist for Geology and Soils ..... 3.6-1
Table 3.6-2 Summary Soil Data ..... 3.6-6
Table 3.6-3 Wind Erodibility Groups ..... 3.6-7
Table 3.7-1 CEQA Checklist for Greenhouse Gas Emissions ..... 3.7-1
Table 3.7-2 Total GHG Construction Emissions (MT $CO_2e$) ..... 3.7-8
Table 3.8-1 CEQA Checklist for Hazards and Hazardous Materials ..... 3.8-1
Table 3.8-2 Airports in the Project Vicinity ..... 3.8-7
Table 3.9-1 CEQA Checklist for Hydrology and Water Quality ..... 3.9-1
Table 3.10-1 CEQA Checklist for Land Use and Planning ..... 3.10-1
Table 3.11-1 CEQA Checklist for Mineral Resources ..... 3.11-1
Table 3.12-1 CEQA Checklist for Noise ..... 3.12-1
Table 3.12-2 Typical Sound Levels Measured in the Environment and Industry ..... 3.12-2
Table 3.12-3 Yuba County Noise Level Standards ..... 3.12-5

Table 3.12-4 Typical Construction Equipment Noise Levels ..... 3.12-11
Table 3.12-5 Construction Equipment Noise Levels at Various Distances ..... 3.12-12
Table 3.13-1 CEQA Checklist for Population and Housing ..... 3.13-1
Table 3.13-2 Forecasted Population Trends ..... 3.13-2
Table 3.13-3 Forecasted Housing Unit Trends ..... 3.13-2
Table 3.14-1 CEQA Checklist for Public Services ..... 3.14-1
Table 3.15-1 CEQA Checklist for Recreation ..... 3.15-1
Table 3.15-2 Parks and Recreational Facilities within 0.5 Mile of the Project Area ..... 3.15-2
Table 3.16-1 CEQA Checklist for Transportation and Traffic ..... 3.16-1
Table 3.16-2 Existing Traffic Operations ..... 3.16-6
Table 3.16-3 Definitions of Study Area Roadway Characteristics ..... 3.16-6
Table 3.17-1 CEQA Checklist for Utilities and Service Systems ..... 3.17-1
Table 3.18-1 CEQA Checklist for Mandatory Findings of Significance ..... 3.18-2
Table 3.18-2 Cumulative Projects in the Project Vicinity ..... 3.18-6

## List of Appendices

Appendix A: Affected Properties Within 300 Feet

Appendix B: EMF Discussion

Appendix C: Native American Heritage Commission Correspondence

Appendix D: Nesting Bird Buffers

Appendix E: List of Preparers

# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition |
|---|---|
| °F | degrees Fahrenheit |
| µg/m$^3$ | micrograms per cubic meter |
| 2012 Plan | Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan |
| AA | all aluminum |
| AAC | all aluminum conductor |
| AB | Assembly Bill |
| AC | alternating current |
| ACSR | aluminum conductor steel-reinforced |
| ACSS | aluminum conductor steel supported |
| AE | Exclusive Agriculture |
| AEG | Applied Engineering and Geology, Inc. |
| AG | Agriculture |
| AI | Agricultural Industrial |
| AIA | Airport Influence Area |
| ALUC | Sutter County Airport Land Use Commission |
| ALUCP | Airport Land Use Compatibility Plan |
| amps | amperes |
| amsl | above mean sea level |
| APE | area of potential effects |
| APMs | Applicant Proposed Measures |
| AR | Agricultural/Rural Residential |
| ASTM | American Society for Testing of Materials |
| B.P. | before present |
| BCAG | Butte County Association of Governments |
| BCAQMD | Butte County Air Quality Management District |
| BCDWR | Butte County Department of Water and Resources |
| BCFD | Butte County Fire Department |
| BCSD | Butte County Sheriff's Department |

| Acronym/Abbreviation | Definition |
|---|---|
| BGEPA | Bald and Golden Eagle Protection Act |
| BLM | Bureau of Land Management |
| BMPs | Best Management Practices |
| BO | biological opinion |
| CAAQS | California Ambient Air Quality Standards |
| CAISO | California Independent System Operator |
| Cal Water | California Water Services Company |
| Cal/EPA | California Environmental Protection Agency |
| Cal/OSHA | California Division of Occupational Safety and Health |
| CalEEMod | California Emissions Estimator Model |
| CalFire | California Department of Forestry and Fire Protection |
| Caltrans | California Department of Transportation |
| CAP | Climate Action Plan |
| CAPCO | California Air Pollution Control Officers Association |
| CAPCOA | California Air Pollution Control Officers Association |
| CARB | California Air Resources Board |
| CBC | State of California Building Standards Commission |
| CCR | California Code of Regulations |
| CDE | California Department of Education |
| CDFW | California Department of Fish and Wildlife |
| CDL | Clandestine Drug Labs |
| CDMG | California Division of Mines and Geology |
| CEC | California Energy Commission |
| Central Valley RWQCB | Central Valley Regional Water Quality Control Board |
| CEQA | California Environmental Quality Act |
| CEQA Air Quality Handbook | CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERCLIS | Comprehensive Environmental Response, Compensation and Liability Information System |

| Acronym/Abbreviation | Definition |
|---|---|
| CESA | California Endangered Species Act |
| CFR | Code of Federal Regulations |
| CGS | California Geological Survey |
| $CH_4$ | methane |
| CHP | California Highway Patrol |
| CHRIS | California Historical Resources Information System |
| CIWMB | California Integrated Waste Management Bureau |
| CNDDB | California Natural Diversity Database |
| CNEL | community noise equivalent level |
| CNPS | California Native Plant Society |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | $CO_2$ equivalents |
| CORRACTS | Corrective Action Report |
| Cortese List | list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 |
| CPUC | California Public Utilities Commission |
| CRHR | California Register of Historical Resources |
| CRLF | California red-legged frog |
| CRPR | California Rare Plant Rank |
| CRSB | Coast Range-Sierran Block Boundary Zone |
| CSAs | County Service Areas |
| CUPA | Certified Unified Program Agency |
| CWSC-MD | California Water Service Company – Marysville District |
| CY | cubic yards |
| dB | decibels |
| dBA | A-weighted decibels |
| DC | direct current |
| Delta | Sacramento–San Joaquin River Delta |
| DNL | day-night sound level |
| DOC | California Department of Conservation |

| Acronym/Abbreviation | Definition |
|---|---|
| DOGGR | California Department of Conservation, Division of Oil, Gas, and Geothermal Resources |
| DOT | U.S. Department of Transportation |
| DPS | distinct population segment |
| DTSC | Department of Toxic Substances Control |
| DWR | California Department of Water Resources |
| E2C | Environmental Engineering, Consulting & Remediation, Inc. |
| EDR | Environmental Data Resources Inc. |
| EGS | Environmental and Geological Solutions |
| ERNS | Emergency Response Notification System |
| ESA | Endangered Species Act |
| ESU | evolutionarily significant unit |
| FAA | Federal Aviation Administration |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FIRMs | Flood Insurance Rate Maps |
| FMMP | Farmland Mapping and Monitoring Program |
| FOCA | Federal Office of Civil Aviation |
| FRAQMD | Feather River Air Quality Management District |
| GGS | giant garter snake |
| GHG | greenhouse gas |
| GHG Rx | Greenhouse Gas Reduction Exchange |
| GO 131-D | General Order No. 131-D Section III.B |
| GPS | global positioning system |
| Great Western | Great Western Power Company |
| $H_2S$ | hydrogen sulfide |
| HCP | Habitat Conservation Plan |
| HSAA | Hazardous Substance Account Act |
| HSC | California Health and Safety Code |
| HWCL | Hazardous Waste Control Law |
| IPaC | Information for Planning and Conservation |

| Acronym/Abbreviation | Definition |
|---|---|
| IPCC | Intergovernmental Panel on Climate Change |
| JJ&A | Jacobson James & Associates |
| JPL | Jet Propulsion Laboratory |
| KOP | Key Observation Point |
| kV | kilovolt |
| kW | kilowatt |
| LCWD | Linda County Water District |
| $L_{dn}$ | day-night sound level |
| $L_{eq}$ | equivalent sound pressure level |
| LFD | Linda Fire Department |
| LFPZ | Levee Flood Protection Zone |
| LOAPUD | Lake Oroville Area Public Utility District |
| LOS | level of service |
| LSPs | lattice steel poles |
| LUST | leaking underground storage tanks |
| LZs | landing zones |
| MBTA | Migratory Bird Treaty Act |
| MBUAPCD | Monterey Bay Unified Air Pollution Control District |
| Meditation Park | Feather River Nature Center and Native Plant Park |
| MFD | Marysville Fire Department |
| MGD | million-gallon-per-day |
| MPD | Marysville Police Department |
| mph | miles per hour |
| MRZ | mineral resource zones |
| MW | Megawatts |
| $N_2O$ | nitrous oxide |
| NAAQS | National Ambient Air Quality Standards |
| NAHC | Native American Heritage Commission |
| NCCP | Natural Communities Conservation Plan |
| NCIC | North Central Information Center |

| Acronym/Abbreviation | Definition |
|---|---|
| NCP | National Contingency Plan |
| NEIC | Northeast Information Center |
| NERC | North American Electric Reliability Council |
| NFIP | National Flood Insurance Program |
| $NO_2$ | nitrogen dioxide |
| NOA | naturally occurring asbestos |
| NOAA Fisheries | National Oceanic and Atmospheric Administration's National Marine Fisheries Service |
| $NO_X$ | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priority List |
| NPPA | Native Plant Protection Act |
| NRCS | Natural Resources Conservation Service Soils |
| NRHP | National Register of Historic Places |
| NSVPA | Northern Sacramento Valley Planning Area |
| O&M | operation and maintenance |
| $O_3$ | ozone |
| OEHHA | California Office of Environmental Health Hazard Assessment |
| OFD | City of Oroville Fire Department |
| OPD | Oroville Police Department |
| OPUD | Olivehurst Public Utilities District |
| OTFS | Oswald – Tudor Fire Station |
| Pb | lead |
| PCBs | polychlorinated biphenyls |
| PEA | Proponent's Environmental Assessment |
| PFYC | Potential Fossil Yield Classification |
| PG&E | Pacific Gas and Electric Company |
| PM | particulate matter |
| ppm | parts per million |
| PRC | Public Resources Code |
| project | South of Palermo 115 kV Power Line Reinforcement Project |

| Acronym/Abbreviation | Definition |
|---|---|
| PRP | Potentially Responsible Parties |
| PTC | Permit to Construct |
| RCRA | Resource Conservation and Recovery Act of 1976 |
| RD 784 | Reclamation District 784 |
| RGA | Recovered Government Archive |
| ROD | Records of Decision |
| ROG | reactive organic gases |
| ROW | right-of-way |
| RWQCB | Regional Water Quality Control Boards |
| SACOG | Sacramento Area Council of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SCFS | Sutter County Fire Services |
| SCOR | Sewerage Commission – Oroville Region |
| SCS | Soil Conservation Service |
| $SF_6$ | sulfur hexafluoride |
| SHMA | Seismic Hazards Mapping Act |
| SHPO | State Historic Preservation Officer |
| SIP | state implementation plan |
| SLIC | Spills, Leaks, Investigations and Cleanup |
| SMARA | California Surface Mining and Reclamation Act |
| SMGB | State Mining and Geology Board |
| SMMs | standard construction mitigation measures |
| $SO_2$ | sulfur dioxide |
| SOIs | spheres of influence |
| SR | State Route |
| SRAs | State Responsibility Areas |
| SSC | Species of Special Concern |
| SSUGRO | SCS Soil Survey Geographic Database |
| SSWD | South Sutter Water District |
| STATSGO | State Soil Geographic Database |

| Acronym/Abbreviation | Definition |
|---|---|
| Stratus | Stratus Environmental, Inc. |
| SVAB | Sacramento Valley Air Basin |
| SWPPP | Storm Water Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TCR | Tribal Cultural Resources |
| TRLIA | Three Rivers Levee Improvement Authority |
| TSPs | tubular steel poles |
| UC | University of California |
| UC Davis | University of California – Davis, Division of Agriculture and Natural Resources |
| UCMP | University of California Museum of Paleontology |
| Unified Program | Unified Hazardous Waste and Hazardous Materials Management Regulatory Program |
| US ENG CONTROLS | Engineering Controls Sites List |
| US EPA | U.S. Environmental Protection Agency |
| US INST CONTROL | Institutional Controls |
| USA | Underground Service Alert |
| USACE | U.S. Army Corps of Engineers |
| USC | United States Code |
| USDOT | U.S. Department of Transportation |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| UST | Underground Storage Tank |
| VCP | Voluntary Cleanup Program Properties |
| VELB | Valley Elderberry Longhorn Beetle |
| VELB BO | USFWS Biological Opinion (File 1-1-01-F-0114) |
| WEAP-HSE | Worker Environmental Awareness Program for Health, Safety and Environment |
| WEG | wind erodibility group |
| WEI | Wind Erodibility Index |

| Acronym/Abbreviation | Definition |
|---|---|
| WMUDS/SWAT | Waste Management Unit Database |
| WPIC | Western Pacific Interceptor Canal |
| WRCC | Western Regional Climate Center |
| WUS | waters of the United States (wetlands and other waters) |
| YCEHD | Yuba County Environmental Health Department |
| YCFD | Yuba City Fire Department |
| YCPD | Yuba City Police Department |
| YCWA | Yuba County Water Agency |
| YSDI | Yuba-Sutter Disposal, Inc. |
| YSRWMA | Yuba-Sutter Regional Waste Management Authority |
| Yuba LAFCo | Yuba Local Agency Formation Commission |

# Index to CPUC PEA Requirements

| CPUC Requirement | Section Number |
|---|---|
| **Cover Sheet** | |
| **Chapter 1: PEA Summary** | |
| 1. The major conclusions of the PEA | 1.0 |
| 2. Any areas of controversy | None Known, 1.0 |
| 3. Any major issues that must be resolved including the choice among reasonably feasible alternatives and mitigation measures, if any; | None Known, 1.0 |
| 4. Description of inter-agency coordination, if any; and | Permit to Construct (PTC) Application, Section IV |
| 5. Description of public outreach efforts, if any. | Only local agency outreach has been completed at this point |
| **Chapter 2: Project Purpose and Need and Objectives**<br>(Note: This information is included in the Project Description) | |
| **2.1 Overview**<br>Explanation of the objective(s) and/or Purpose and Need for implementing the Proposed Project. | 2.2, PTC Application |
| **2.2 Project Objectives**<br>Analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of project objectives which will aid any appropriate CEQA alternatives screening process. | 2.2, PTC Application |
| **Chapter 3: Project Description** | 2.0 |
| **3.1 Project Location** | |
| 1. Geographical Location: County, City (provide project location map(s)). | 2.3, Figure 2.3-1 |
| 2. General Description of Land Uses within the project site (e.g., residential, commercial, agricultural, recreation, traverses vineyards, farms, open space, number of stream crossings, etc.). | 2.3, 3.10, Figure 3.9-1, Figure 3.10-1 through 3.10-3 |
| 3. Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights of way (ROW) or requires new ROW. Give the approximate area of the property or the length of the project that is in an existing ROW or which requires new ROWs. | 2.7 |

| CPUC Requirement | Section Number |
|---|---|
| **3.2 Existing System** | |
| 1. Describe the local system to which the Proposed Project relates; include all relevant information about substations, transmission lines and distribution circuits. ***Note: regional system maps would remain confidential for security reasons.*** | 2.3 - 2.4; Figure 2.3-3 |
| 2. Provide a schematic diagram and map of the existing system. | Figure 2.3-2, Figure 2.3-3 |
| 3. Provide a schematic diagram that illustrates the system as it would be configured with implementation of the Proposed Project. | Figure 2.3-2, Figure 2.3-3 |
| **3.3 Project Objectives** (Can refer to Chapter 2, Project Purpose and Need, if already described there.) | 2.2 |
| **3.4 Proposed Project** | |
| 1. Describe whole of the Proposed Project. Is it an upgrade, a new line, new substations, etc.? | 2.5, 2.6, 2.8 |
| 2. Describe how the Proposed Project fits into the Regional system. Does it create a loop for reliability, etc.? | 2.2 through 2.5 |
| 3. Describe all reasonably foreseeable future phases, or other reasonably foreseeable consequences of the Proposed Project. | Not applicable (N/A) |
| 4. Provide capacity increase in MW. If the project does not increase capacity, state it. | 2.2 |
| 5. Provide GIS (or equivalent) data layers for the Proposed Project preliminary engineering including estimated locations of all physical components of the Proposed Project as well as those related to construction. For physical components, this could include but is not limited to the existing components (e.g., ROW, substation locations, poles, etc.) as well as the proposed pole locations, transmission lines, substations, etc. For elements related to construction include: proposed or likely lay-down areas, work areas at the pole sites, pull and tension sites, access roads (e.g., temporary, permanent, existing, etc.), areas where special construction methods may need to be employed, areas where vegetation removal may occur, areas to be heavily graded, etc. More details about this type of information are provided below. | For security reasons, GIS data layers will be submitted confidentially under California Public Utilities Code (PUC) Section 583 |
| **3.5 Project Components** | |
| **3.5.1 Transmission Line** | |
| 1. What type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV). | 2.1, 2.3, 2.4, 2.5, PTC Application |
| 2. Identify the length of the upgraded alignment, the new alignment, etc. | 2.1, 2.3, 2.5 |
| 3. Would construction require one-for-one pole replacement, new poles, steel poles, etc.? | 2.5, 2.6 |

| CPUC Requirement | Section Number |
|---|---|
| 4. Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.). | 2.4 |
| **3.5.2 Poles/Towers:**<br>Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed: | |
| 1. Unique ID number to match GIS database information. | Unique ID numbers have not been assigned; Available GIS data layers will be submitted confidentially under PUC Section 583 |
| 2. Structure diagram and, if available, photos of existing structure. Preliminary diagram or "typical" drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., Tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements. | 2.6, Figure 2.6-1 through Figure 2.6-4; Appendix D and APM Bio 1 |
| 3. Type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice). | 2.5, 2.6 |
| 4. For poles, provide "typical" drawings with approximate diameter at the base and the tip; for towers, estimate the width at base and top. | Figure 2.6-1 through Figure 2.6-4, Table 2.8-1 |
| 5. Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area. | 2.6.2, Table 2.8-1 |
| 6. Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys); make sure to note if any guying would likely be required across a road. | No specialty poles or towers are anticipated; guying is not anticipated across any road; We will be using TSPs as angle structures; 2.8 |
| 7. If the project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment. | 2.5 |
| 8. Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features. | 2.5, 2.6 |
| **3.5.3 Conductor Cable** | |
| ***3.5.3.1 Above-Ground Installation*** | |
| 1. Describe the type of line to be installed on the poles/tower (e.g., single circuit with distribution, double circuit, etc.). | 2.5, 2.6.1 |

| CPUC Requirement | Section Number |
|---|---|
| 2. Describe the number of conductors required to be installed on the poles or tower and how many on each side including applicable engineering design standards. | 2.5, 2.6 |
| 3. Provide the size and type of conductor (e.g., ACSR, non-specular, etc.) and insulator configuration. | 2.6.1 |
| 4. Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically) Provide specific information at highways, rivers, or special crossings. | 2.5, 2.6.1 |
| 5. Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant. | 2.6.1 |
| 6. Describe if other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc.); if so, provide conduit diameter of other infrastructure. | N/A |
| ***3.5.3.2 Below-Ground Installation*** | |
| 1. Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables). | N/A |
| 2. Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing. | N/A |
| 3. Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.). | N/A |
| **3.5.4 Substations** | |
| 1. Provide "typical" Plan and Profile views of the proposed substation and the existing substation if applicable. | All substation modifications are minor and will be completed within existing substation fence lines, and no substation expansions are proposed; See Section 2.5.6 for information regarding substations |
| 2. Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to: mobile substations, transformers, capacitors, and new lighting. | 2.5.6 |
| 3. Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply. | 2.5.6 |

| CPUC Requirement | Section Number |
|---|---|
| 4. Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded? | 2.5.6; All substation modifications are minor and will be completed within existing substation fence lines; no substation expansions are proposed |
| 5. Describe the electrical need area served by the distribution substation. | 2.2, 2.4 |
| **3.6 Right-of-Way Requirements** | |
| 1. Describe the ROW location, ownership, and width. Would existing ROW be used or would new ROW be required? | 2.7 |
| 2. If new ROW is required, describe how it would be acquired and approximately how much would be required (length and width). | N/A |
| 3. List properties likely to require acquisition. | N/A |
| **3.7 Construction** | |
| **3.7.1 For All Projects** | |
| ***3.7.1.1 Staging Areas*** | |
| 1. Where would the main staging area(s) likely be located? | 2.8.3, 2.8.4 |
| 2. Approximately how large would the main staging area(s) be? | 2.8.3, 2.8.4 |
| 3. Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.). | 2.8.3, 2.8.4, 2.8.5, 2.8.6, 2.8.7 |
| 4. Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.). | 2.8.2, 2.8.3, 2.8.4, 2.8.5 |
| 5. Describe how the staging area would be secured, would a fence be installed? If so, describe the type and extent of the fencing. | 2.8.4, 2.8.5 |
| 6. Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.). | 2.8.2 |
| 7. Describe any grading activities and/or slope stabilization issues. | 2.8.3, 2.8.4, 2.8.5, 2.8.6, 2.8.7 |
| ***3.7.1.2 Work Areas*** | |
| 1. Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.). | 2.8.3 |
| 2. For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed. | 2.8.3 |

| CPUC Requirement | Section Number |
|---|---|
| 3. Identify the approximate location of known work areas in the GIS database. | Available GIS data layers will be submitted confidentially under PUC Section 583 |
| 4. How would the work areas likely be accessed (e.g., construction vehicles, walk in, helicopter, etc.)? | 2.8.3, 2.8.4, 2.8.5, 2.8.6 |
| 5. If any site preparation is likely required, generally describe what and how it would be accomplished. | 2.8.3, 2.8.4, 2.8.5 |
| 6. Describe any grading activities and/or slope stabilization issues. | 2.8.3, 2.8.4, 2.8.5, 2.8.6, 2.8.7 |
| 7. Based on the information provided, describe how the site would be restored. | 2.8.9 |
| ***3.7.1.3 Access Roads and/or Spur Roads*** | |
| 1. Describe the types of roads that would be used and or would need to be created to implement the Proposed Project. See table below as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access. | 2.8.6 |
| 2. For road types that require preparation, describe the methods and equipment that would be used. | 2.8.6, Table 2.8-2, Table 2.8-4 |
| 3. Identify approximate location of all access roads (by type) in the GIS database. | Available GIS data layers will be submitted confidentially under PUC Section 583 |
| 4. Describe any grading activities and/or slope stabilization issues. See table in PEA Checklist as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access | 2.8.6, Table 2.8-4 |
| ***3.7.1.4 Helicopter Access*** | |
| 1. Identify which proposed poles/towers would be removed and/or installed using a helicopter. | 2.8.1.1, 2.8.1.2, 2.8.1.3, 2.8.1.4 |
| 2. If different types of helicopters are to be used, describe each type (e.g., light, heavy or sky crane) and what activities they will be used for. | Table 2.8-3; Details regarding helicopter operation will be provided separately to CPUC staff in a Helicopter Use Plan |

| CPUC Requirement | Section Number |
|---|---|
| 3. Provide information as to where the helicopters would be staged, where they would refuel, where they would land within the Project site. | 2.8.5; Details regarding helicopter operation will be provided separately to CPUC staff in a Helicopter Use Plan |
| 4. Describe any BMPs that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations. | 2.8.8, Table 2.11-1 |
| 5. Describe flight paths, payloads, hours of operations for known locations and work types. | 2.8.5, 2.8.10; Details regarding helicopter operation will be provided separately to CPUC staff in a Helicopter Use Plan |
| ***3.7.1.5 Vegetation Clearance*** | |
| 1. Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.). | 2.8.3, 2.8.4, 2.8.5, 2.8.6 |
| 2. Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal. | Available GIS data layers will be submitted confidentially under PUC Section 583; vegetation removal will be limited |
| 3. Describe how each type of vegetation removal would be accomplished. | 2.8.3, 2.8.4, 2.8.5, 2.8.6 |
| 4. For removal of trees, distinguish between tree trimming as required under GO-95D and tree removal. | With the exception of a few crop trees, no protected tree removal is anticipated. Section 3.2.4 |
| 5. Describe the types and approximate number and size of trees that may need to be removed. | Section 3.2.4 |
| 6. Describe the type of equipment typically used. | Table 2.8-3 |
| ***3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction*** | |
| 1. Describe the areas of soil disturbance including estimated total areas, and associated terrain type and slope. List all known permits required. For project sites of less than one acre, outline the best management practices (BMPs) that would be implemented to manage surface runoff. Things to consider include, but are not limited to, the following:<br>· Erosion and Sedimentation BMP's;<br>· Vegetation Removal and Restoration; and/or,<br>· Hazardous Waste and Spill Prevention Plans. | 2.8.3, 2.8.4, 2.8.5, 2.8.7, 2.8.8, 2.8.9, Table 2.10-1, 3.4.4.2, 3.8.4.2, 3.9.4.2 |

| CPUC Requirement | Section Number |
|---|---|
| 2. Describe any grading activities and/or slope stabilization issues. | 2.8.7 |
| 3. Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed. | 2.8.1.3, 2.8.7, 2.8.9 |
| ***3.7.1.7 Cleanup and Post-Construction Restoration*** | |
| 1. Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider include, but are not limited to, restoration of the following: Natural drainage patterns; wetlands; vegetation, and other disturbed areas (i.e., staging areas, access roads, etc.). | 2.8.9, 3.4.4.2, 3.9.4.3 |
| **3.7.2 Transmission Line Construction (Above Ground)** | |
| ***3.7.2.1 Pull and Tension Sites*** | |
| 1. Provide the general or average distance between pull and tension sites. | 2.8.4 |
| 2. Provide the area of pull and tension sites, include the estimated length and width. | 2.8.4 |
| 3. According to the preliminary plan, how may pull and tension sites would be required, and where would they be located? Please provide the location information in GIS. | 2.8.4, Figure 2.8-1; Available GIS data layers will be submitted confidentially under PUC Section 583 |
| 4. What type of equipment would be required at these sites? | Table 2.8-2, Table 2.8-3 |
| 5. If conductor is being replaced, how would it be removed from the site? | 2.8.1.5 |
| ***3.7.2.2 Pole Installation Removal*** | |
| 1. Describe how the construction crews and their equipment would be transported to and from the pole site location. Provide vehicle type, number of vehicles, and estimated number of trips and hours of operation. | 2.8.1.1, 2.8.1.2, 2.8.2, 2.8.10, 3.3.2.2 |
| *Pole and Foundation Removal* | |
| 1. Describe the process of how the poles and foundations would be removed. | 2.8, 2.8.1.1, 2.8.1.2, 2.8.1.3 |
| 2. Describe what happens to the hole that the pole was in (i.e., reused or backfilled)? | 2.8, 2.8.1.1, 2.8.1.2, 2.8.1.3 |
| 3. If the hole is to be filled, what type of fill would be used, where would it come from? | 2.8, 2.8.1.1, 2.8.1.2, 2.8.1.3 |
| 4. Describe any surface restoration that would occur at the pole site? | 2.8, 2.8.1.1, 2.8.1.2, 2.8.1.3 |
| 5. Describe how the poles would be removed from the site? | 2.8, 2.8.1.1, 2.8.1.2, 2.8.1.3 |
| *Top Removal* | |

| CPUC Requirement | Section Number |
|---|---|
| If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, please provide the following: | N/A |
| 1. Describe the methodology to access and remove the tops of these poles | N/A |
| 2. Describe any special methods that would be required to top poles that may be difficult to access, etc. | N/A |
| *Pole Tower Installation* | |
| 1. Describe the process of how the new poles/towers would be installed; specifically call out any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers. | 2.8.1 |
| 2. Describe the types of equipment and their use as related to pole/tower installation. | Table 2.8-2, Table 2.8-3 |
| 3. Describe actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.). | 2.8.1, 2.8.8, 3.8.4.2 |
| 4. Describe what would be done with soil removed from a hole/foundation site. | 2.8.1.2 |
| 5. For any foundations required, provide description of construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc. | 2.8.1, Table 2.8-1 |
| 6. Describe briefly how poles/towers and associated hardware are assembled. | 2.8.1.2 |
| 7. Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off-site and brought in or assembled on site? | 2.8.1.2 |
| 8. Provide a table of pole/tower installation metrics and associated disturbance area estimates as in PEA Checklist 3.7.2.2 | Table 2.8-1 |
| ***3.7.2.3 Conductor/Cable Installation*** | |
| 1. Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable. Note, graphical representation of the general sequencing is helpful for the reader here. | 2.8.1.5 |
| 2. Generally describe the conductor/cable splicing process. | 2.8.1.5 |
| 3. If vaults are required, provide their dimensions and approximate location/spacing along the alignment. | N/A |
| 4. Describe in what areas conductor/cable stringing/installation activities would occur. | 2.5 |
| 5. Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing). | 2.6.3.1 |

| CPUC Requirement | Section Number |
|---|---|
| **3.7.3 Transmission Line Construction (Below Ground)** | |
| ***3.7.3.1 Trenching*** | |
| 1. Describe the approximate dimensions of the trench (e.g., depth, width). | N/A |
| 2. Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, back hoe to remove, etc.). | N/A |
| 3. Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site. | N/A |
| 4. Provide off-site disposal location, if known, or describe possible option(s). | N/A |
| 5. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill). | N/A |
| 6. Describe if dewatering would be anticipated, if so, how the trench would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed. | N/A |
| 7. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations. | N/A |
| 8. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal. | N/A |
| 9. Describe any standard BMPs that would be implemented. | N/A |
| ***3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling*** | |
| 1. Provide the approximate location of the sending and receiving pits. | N/A |
| 2. Provide the length, width and depth of the sending and receiving pits. | N/A |
| 3. Describe the methodology of excavating and shoring the pits. | N/A |
| 4. Describe the methodology of the trenchless technique. | N/A |
| 5. Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site. | N/A |
| 6. Describe process for safe handling of drilling mud and bore lubricants. | N/A |
| 7. Describe process for detecting and avoiding “fracturing-out” during HDD operations. | N/A |
| 8. Describe process for avoiding contact between drilling mud/lubricants and stream beds. | N/A |

| CPUC Requirement | Section Number |
|---|---|
| 9. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill). | N/A |
| 10. Describe if dewatering would be anticipated, if so, how the pit would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed. | N/A |
| 11. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants. | N/A |
| 12. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal. | N/A |
| 13. Describe any grading activities and/or slope stabilization issues. | N/A |
| 14. Describe any standard BMPs that would be implemented. | N/A |
| **3.7.4 Substation Construction** | |
| 1. Describe any earth moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site For both site grading and foundation excavation. | N/A |
| 2. Provide a conceptual landscape plan in consultation with the municipality in which the substation is located. | N/A |
| 3. Describe any grading activities and/or slope stabilization issues. | N/A |
| 4. Describe possible relocation of commercial or residential property, if any. | N/A |
| **3.7.5 Construction Workforce and Equipment** | |
| 1. Provide the estimated number of construction crew members. | 2.8.2 |
| 2. Describe the crew deployment, would crews work concurrently (i.e., multiple crews at different sites); would they be phased, etc. | 2.8.2 |
| 3. Describe the different types of activities to be undertaken during construction; the number of crew members for each activity i.e., trenching, grading, etc.; and number and types of equipment expected to be used for said activity. Include a written description of the activity. See example in PEA Checklist 3.7.5. | Table 2.8-2 |
| 4. Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment. See example in PEA Checklist 3.7.5. | Table 2.8-3 |
| **3.7.6 Construction Schedule** | |
| 1. Provide a Preliminary Project Construction Schedule; include contingencies for weather, wildlife closure periods, etc. Include Month Year, or Month Year to Month Year for each. See example in PEA Checklist 3.7.6. | 2.8.10, PTC Application |

| CPUC Requirement | Section Number |
|---|---|
| **3.8 Operation and Maintenance** | |
| 1. Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.). | N/A |
| 2. Describe the general maintenance program of the Proposed Project, include items such as: | N/A |
| · Timing of the inspections (i.e., monthly, every July, as needed); | |
| · Type of inspection (i.e., aerial inspection, ground inspection); and | |
| · Description of how the inspection would be implemented. Things to consider, who/how many crew members; how would they access the site (walk to site, vehicle, ATV); would new access be required; would restoration be required, etc. | |
| 3. If additional full time staff would be required for operation and/or maintenance, provide the number and for what purpose. | N/A |
| **3.9 Applicant Proposed Measures** | |
| 1. If there are measures that the Applicant would propose to be part of the Proposed Project, please include those measures and reference plans or implementation descriptions. | 2.11, Table 2.11-1 |
| **Chapter 4: Environmental Setting** | |
| Note: PG&E has elected to combine Environmental Setting with the impact assessment. Detailed descriptions should be limited to those resource areas which may be subject to a potentially significant impact. | |
| **4.1 Aesthetics** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.1.3, 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.1.3 |
| · Regional environment | 3.1.3 |
| 2. A description of the regulatory environment/context | 3.1.2.1 |
| · Federal | 3.1.2.1 |
| · State | 3.1.2.1 |
| · Local | 3.1.2.1 |
| **4.2 Agriculture Resources** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.2.3, 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.2.3 |

| CPUC Requirement | Section Number |
|---|---|
| · Regional environment | 3.2.3 |
| 2. A description of the regulatory environment/context | 3.2.2.1 |
| · Federal | 3.2.2.1 |
| · State | 3.2.2.1 |
| · Local | 3.2.2.1 |
| **4.3 Air Quality** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.3.3, 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.3.3 |
| · Regional environment | 3.3.3 |
| 2. A description of the regulatory environment/context | 3.3.2.1 |
| · Federal | 3.3.2.1 |
| · State | 3.3.2.1 |
| · Local | 3.3.2.1 |
| **4.4 Biological Resources** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.4.3 |
| · Regional environment | 3.4.3 |
| 2. A description of the regulatory environment/context | 3.4.2.1 |
| · Federal | 3.4.2.1 |
| · State | 3.4.2.1 |
| · Local | 3.4.2.1 |
| **4.5 Cultural Resources** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.5.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.5.3 |
| · Regional environment | 3.5.3 |
| 2. A description of the regulatory environment/context | 3.5.2.1 |
| · Federal | 3.5.2.1 |
| · State | 3.5.2.1 |
| · Local | 3.5.2.1 |

| CPUC Requirement | Section Number |
|---|---|
| **4.6 Geology, Soils and Seismic Potential** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.6.3 |
| · Regional environment | 3.6.3 |
| 2. A description of the regulatory environment/context | 3. 6.2.1 |
| · Federal | 3. 6.2.1 |
| · State | 3. 6.2.1 |
| · Local | 3. 6.2.1 |
| **4.7 Hazards and Hazardous Materials** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.10.3 |
| · Local environment (site-specific) | 3.8.3 |
| · Regional environment | 3.8.3 |
| 2. A description of the regulatory environment/context | 3.8.2.1 |
| · Federal | 3.8.2.1 |
| · State | 3.8.2.1 |
| · Local | 3.8.2.1 |
| **4.8 Hydrology and Water Quality** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3 |
| · Local environment (site-specific) | 3.9.3 |
| · Regional environment | 3.9.3.1 |
| 2. A description of the regulatory environment/context | 3.9.2.1 |
| · Federal | 3.9.2.1 |
| · State | 3.9.2.1 |
| · Local | 3.9.2.1 |
| **4.9 Land Use and Planning** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3 |
| · Local environment (site-specific) | 3.10.3.2 |
| · Regional environment | 3.10.3.1 |

| CPUC Requirement | Section Number |
|---|---|
| 2. A description of the regulatory environment/context | |
| · Federal | 3.10.2.1 |
| · State | 3.10.2.1 |
| · Local | 3.10.2.1 |
| **4.10 Mineral Resources** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3, 3.11.3 |
| · Local environment (site-specific) | 3.11.3 |
| · Regional environment | 3.11.3 |
| 2. A description of the regulatory environment/context | 3.11.2.1 |
| · Federal | 3.11.2.1 |
| · State | 3.11.2.1 |
| · Local | 3.11.2.1 |
| **4.11 Noise** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3, 3.12.4 |
| · Local environment (site-specific) | 3.12.4 |
| · Regional environment | 3.12.4 |
| 2. A description of the regulatory environment/context | 3.12.2.1 |
| · Federal | 3.12.2.1 |
| · State | 3.12.2.1 |
| · Local | 3.12.2.1 |
| **4.12 Population and Housing** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3, 3.13.3 |
| · Local environment (site-specific) | 3.13,3 |
| · Regional environment | 3.13.3 |
| 2. A description of the regulatory environment/context | 3.13.2.1 |
| · Federal | 3.13.2.1 |
| · State | 3.13.2.1 |
| · Local | 3.13.2.1 |

| CPUC Requirement | Section Number |
|---|---|
| **4.13 Public Services** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3 |
| · Local environment (site-specific) | 3.14.3 |
| · Regional environment | 3.14.3 |
| 2. A description of the regulatory environment/context | 3.14.2.1 |
| · Federal | 3.14.2.1 |
| · State | 3.14.2.1 |
| · Local | 3.14.2.1 |
| **4.14 Recreation** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.9.3, 3.10.3, 3.15.3 |
| · Local environment (site-specific) | 3.15.3.2 |
| · Regional environment | 3.15.3.1 |
| 2. A description of the regulatory environment/context | 3.15.2.1 |
| · Federal | 3.15.2.1 |
| · State | 3.15.2.1 |
| · Local | 3.15.2.1 |
| **4.15 Transportation and Traffic** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.10.3, 3.16.3 |
| · Local environment (site-specific) | 3.16.3 |
| · Regional environment | 3.16.3 |
| 2. A description of the regulatory environment/context | 3.16.2.1 |
| · Federal | 3.16.2.1 |
| · State | 3.16.2.1 |
| · Local | 3.16.2.1 |
| **4.16 Utilities and Public Services** | |
| 1. A description of the physical environment in the vicinity of the project (e.g., topography, land use patterns, biological environment, etc.) | 3.4.3, 3.6.3, 3.8.3, 3.10.3, 3.17.3 |
| · Local environment (site-specific) | 3.17.3 |
| · Regional environment | 3.17.3 |

| CPUC Requirement | Section Number |
|---|---|
| 2. A description of the regulatory environment/context | 3.17.2 |
| · Federal | 3.17.2.1 |
| · State | 3.17.2.1 |
| · Local | 3.17.2.1 |
| **Chapter 5: Environmental Impact Assessment Summary** | |
| **5.1 Aesthetics**<br>Provide visual simulations of prominent public view locations, including scenic highways to demonstrate the before and after project implementation. Additional simulations of affected private view locations are highly recommended. | Figure 3.1-5A through Figure 3.1-8B |
| **5.2 Agriculture Resources**<br>Identify the types of agricultural resources affected. | 3.2.4.3 |
| **5.3 Air Quality** | |
| 1. Provide supporting calculations / spreadsheets / technical reports that support emission estimates in the PEA. | Detailed calculations and assumptions will be provided to the CPUC under separate cover |
| 2. Provide documentation of the location and types of sensitive receptors that could be impacted by the project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors is dependant on type of construction activity. | 3.3.3 |
| 3. Identify Project Green House Gas (GHG) emissions as follows: | |
| · Quality GHG emissions from a business as usual snapshot. That is, what the GHG emissions will be from the proposed project if no mitigations were used | 3.4.7.3, Table 3.7-2 |
| · Quantify GHG emission reductions from every Applicant Proposed Measure that is implemented. Itemize quantifications and place in a table format. | 3.4.7.3, Table 3.7-2 |
| · Identify the net emissions of a project after mitigations have been applied. | 3.4.7.3, Table 3.7-2 |
| · Calculate and quantify GHG emissions ($CO_2$ equivalent) for the project including construction & operation. | 3.7.4.3, Table 3.7-2 |
| · Calculate and quantify the GHG reduction based on reduction measures proposed for the project. | 3.4.7.3, Table 3.7-2 |
| · Propose Applicant Proposed Measures (APM) to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures. | 3.7.4.2, 3.3.4.2 |

| CPUC Requirement | Section Number |
|---|---|
| · Discuss programs already in place to reduce GHG emissions on a system wide level. This includes Applicant's voluntary compliance with USEPA SF6 reduction program, reductions from energy efficiency, demand response, LTPP, et al. | 3.7.2.2, 3.7.4.2 |
| **5.4 Biological Resources** - In addition to an impacts analysis: | |
| 1. Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well. | This information will be submitted confidentially under PUC Section 583 |
| 2. Provide a copy of special status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided. | This information will be submitted confidentially under PUC Section 583 |
| **5.5 Cultural Resources** - In addition to an Impacts Analysis: | |
| 1. Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation. | This information will be submitted confidentially under PUC Section 583 |
| 2. Provide a copy of the records found in the literature search. | This information will be submitted confidentially under PUC Section 583 |
| 3. Provide a copy of all letters and documentation of Native American consultation. | Appendix C of the PEA |
| **5.6 Geology, Soils and Seismic Potential** - In addition to an impacts analysis: | |
| 1. Provide a copy of geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc. | PG&E used the geotechnical investigation for the Palermo East Nicolaus Reinforcement Project, which will be provided to separately to CPUC staff |
| **5.7 Hazards and Hazardous Materials** - In addition to an impacts analysis: | |
| 1. Environmental Data Resources report. | To be provided separately to CPUC staff |
| 2. Hazardous Substance Control and Emergency Response Plan. | Equivalent to be provided separately to CPUC staff |
| 3. Health and Safety Plan. | 3.8.4.2; Equivalent to be provided separately to CPUC staff |

| CPUC Requirement | Section Number |
|---|---|
| 4. Worker Environmental Awareness Program (WEAP). | 3.8.4.2; WEAP to be provided separately to the CPUC staff |
| 5. Describe what chemicals would be used during construction and operation of the Proposed Project. For example: fuels, etc. for construction, naphthalene to treat wood poles before installation. | 3.8.4.3 |
| **5.8 Hydrology and Water Quality** – In addition to an impacts analysis: | |
| 1. Describe impacts to groundwater quality including increased run-off due to construction of impermeable surfaces, etc. | 3.9.4.3 |
| 2. Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality. | 3.9.4.3 |
| **5.9 Land Use and Planning** - In addition to an impacts analysis: | |
| 1. Provide GIS data of all parcels within 300' of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address. | Appendix A of PEA contains this information in list form; GIS data is not available |
| **5.10 Mineral Resources** - Data needs already specified under Chapter 3 would generally meet the data needs for this resource area. | 3.11 |
| **5.11 Noise** | |
| 1. Provide long term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, etc.). | There will be no change from existing conditions; 3.12.1.1, 3.12.5.3 |
| **5.12 Population and Housing**<br>Data needs already specified under Chapter 3 would generally meet the data needs for this resource area. | 3.13 |
| **5.13 Public Services**<br>Data needs already specified under Chapter 3 would generally meet the data needs for this resource area. | 3.14 |
| **5.14 Recreation**<br>Data needs already specified under Chapter 3 would generally meet the data needs for this resource area | 3.15 |
| **5.14 Transportation and Traffic**<br>Describe the likely probable routes that are the subject of the traffic analysis. | 3.16.3 |
| 1. Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations. | 3.16.4.3 |

| CPUC Requirement | Section Number |
|---|---|
| 2. Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project. | 3.16.4.2 |
| **5.16 Utilities and Services Systems** | |
| 1. Describe how treated wood poles would be disposed of after removal, if applicable. | 3.17.4.3, 2.8.7 |
| **5.17 Cumulative Analysis** | |
| 1. Provide a list of projects (i.e., past, present and reasonably foreseeable future projects) within the Project Area that the applicant is involved in. | 3.18.4, Table 3.18-2 |
| 2. Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project. Agencies to be contacted include but are not limited to: the local planning agency, Caltrans, etc. | 3.18.4, Table 3.18-2 |
| **5.18 Growth-Inducing Impacts, If Significant** | |
| 1. Provide information on the Proposed Project's growth inducing impacts, if any. The information should include, but is not necessarily limited, to the following: | |
| · Any economic or population growth, in the surrounding environment that will directly or indirectly, result from the Proposed Project | Any growth-inducing impacts would not be significant; see Checklist item 6.3 below |
| · Any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project | N/A |
| · Any obstacles to population growth that the Proposed Project would remove | N/A |
| · Any other activities, directly or indirectly encouraged or facilitated by the Proposed Project that would cause population growth that could significantly affect the environment, either individually or cumulatively | N/A |
| **Chapter 6: Detailed Discussion of Significant Impacts**<br>Note: With implementation of PG&E's APMs, all impacts will be less than significant. Therefore this chapter is not required. | |
| **6.2 Description of Project Alternatives and Impact Analysis** | |
| 1. Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project. | N/A |

| CPUC Requirement | Section Number |
|---|---|
| 2. Alternatives considered and described by the Applicant should include, as appropriate: | N/A |
| a. System or facility alternatives | N/A |
| b. Route alternatives | N/A |
| c. Route variations | N/A |
| d. Alternative locations. | N/A |
| 3. A description of a "No Project Alternative" should be included. | N/A |
| 4. If significant environment effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the project objectives, and are more costly. | N/A |
| **6.3 Growth-Inducing Impacts**<br>Note: Growth-inducing impacts are addressed in the Impact Assessment | |
| Information required to analyze the Proposed Project's effects on growth would vary depending on the type of project proposed. Generally, for transmission line projects the discussion would be fairly succinct and focus on the following: | |
| 1. Would the Proposed Project foster economic or population growth, either directly or indirectly, in the surrounding environment? | 3.13.4.3 |
| 2. Would the Proposed Project cause an increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)? | 3.14.4.3 |
| 3. Would the Proposed Project remove obstacles to population growth? | 3.13.4.3 |
| 4. Would the Proposed Project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively? | 3.13.4.3 |
| **6.4 Applicant Proposed Measures to address GHG Emissions**<br>Note: GHG Emissions and PG&E's associated APM's are discussed in the Air Quality chapter | |
| See the menu of suggested APM's in PEA Checklist Section 6.4 that applicants can consider. Applicants can and are encouraged to propose other GHG reducing mitigations. Priority is given to on-site and/or near by mitigation measures. Off-site mitigation measures within California will be considered. | 3.3.4.2, 3.7.4.2 |
| **Chapter 7: Other Process-Related Data Needs** | |
| 1. Excel spreadsheet that includes all parcels within 300 feet of any project component with the following data: APN number, owner mailing address, and parcels physical address. | Appendix A |

# 1.0 PEA SUMMARY

## 1.1 INTRODUCTION

Pacific Gas and Electric Company (PG&E) proposes to reinforce the electric power line system in Butte, Yuba, and Sutter Counties by replacing existing conductor with new aluminum cable (a process referred to as reconductoring), modifying existing lattice steel towers, and replacing existing lattice steel towers and lattice steel poles along approximately 59.5 miles of PG&E's existing power lines within the Palermo-Rio Oso 115 kilovolt (kV) transmission system. PG&E's Palermo-Rio Oso 115 kV transmission system provides power to local communities, including Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus.

The project was planned and engineered to avoid or minimize environmental impacts, and Applicant-Proposed Measures (APMs) will be implemented to further avoid or minimize impacts on environmental resources. This Proponent's Environmental Assessment (PEA) describes the environmental setting, regulations, and APMs for minimizing potential effects, and evaluates potential environmental impacts that could result from construction and operation of the project. With implementation of the APMs, all potential project-related impacts will be less than significant.

There are no known areas of controversy, and no major issues that must be resolved related to the project.

## 1.2 ORGANIZATION OF THE PEA

As directed by the California Public Utilities Commission (CPUC) guidelines, this PEA utilizes Appendix G of the California Environmental Quality Act (CEQA) Guidelines (hereafter referred to as the "CEQA Checklist") for assessing potential impacts pursuant to CEQA. The CPUC will review this information and will be responsible for preparing and providing public review of the Initial Study.

This PEA is organized in the following manner:

- Chapter 1.0, PEA Summary
- Chapter 2.0, Project Description, provides a detailed project description, including purpose, and need. In addition, the end of this chapter provides a list of the APMs that will be implemented (APMs are described in detail in Table 2.11-1 of Chapter 2.0 and in Chapter 3.0, Impact Assessment Summary).
- Chapter 3.0, Environmental Assessment Summary, Sections 3.1 through 3.18, provide environmental setting information and analysis of all potential impacts on resources (described in the CEQA Checklist) that might result from implementing the project, and the Mandatory Findings of Significance and growth-inducing impacts of the project. Each section includes a description of the regulatory context, environmental setting,

resource-specific APMs, and analysis and assessment of potential impacts resulting from construction, operation, and maintenance of the project.

Appendices include the following:

- Appendix A: Affected Properties Within 300 Feet
- Appendix B: EMF Discussion
- Appendix C: Native American Heritage Commission Correspondence
- Appendix D: Nesting Bird Buffers
- Appendix E: List of Preparers

# 2.0 PROJECT DESCRIPTION

## 2.1 OVERVIEW

PG&E is proposing the South of Palermo 115 kV Power Line Reinforcement Project (project) to reinforce the electric power line system between Palermo, Pease, Bogue, and Rio Oso substations (a portion of the Palermo-Rio Oso transmission system) in Yuba, Sutter and Butte Counties (see Figure 2.3-1). PG&E's Palermo–Rio Oso 115 kV transmission system provides power to local communities, including Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus, in addition to providing a path for hydroelectric generation. In 2010 and again in 2015, the California Independent System Operator (CAISO) identified the need to improve and upgrade this system to address thermal overloads and potential power outages affecting customers in Butte, Yuba, and Sutter Counties. The project will replace existing conductor with new aluminum cable (a process referred to as reconductoring), modify existing lattice steel towers, and replace existing lattice steel towers and lattice steel poles along approximately 59.5 miles of PG&E's existing power lines within the Palermo-Rio Oso 115 kV transmission system. The project will include reconductoring portions of the following alignments within the Palermo-Rio Oso 115 kV transmission system as shown on Figure 2.3-2:

- Caribou–Palermo 115 kV line
- Palermo–Pease 115 kV line
- Pease–Rio Oso 115 kV line
- Palermo–Bogue 115 kV line
- Bogue–Rio Oso 115 kV line
- East Nicolaus–Rio Oso 115 kV line
- Rio Oso–West Sacramento 115 kV line

To simplify the description of the project, the portions of the power lines to be reconductored have been categorized below into segments based on their respective location (see Figure 2.3-1 and Figure 2.3-2):

- **South of Palermo Line** (approximately 38.7 miles)—includes portions of the Palermo–Pease and Pease–Rio Oso 115 kV lines.

- **Palermo Sub Line Segment** (approximately 1.6 miles)—includes portions of the Caribou–Palermo and Palermo–Pease 115 kV lines.

- **Pease Sub Line Segment** (approximately 5.2 miles)—includes portions of the Palermo–Pease and Pease–Rio Oso 115 kV lines.

- **Bogue Sub Line Segment** (approximately 6.4 miles)—includes portions of the Palermo–Bogue and Bogue–Rio Oso 115 kV lines.

- **Rio Oso Sub Line Segment Loop** (approximately 7.6 miles) –includes portions of the Bogue–Rio Oso, East Nicolaus–Rio Oso, Pease-Rio Oso, and Rio Oso–West Sacramento 115 kV lines.

To support the new conductor, the South of Palermo Line and Bogue Sub Line Segment will require new support structures. Existing lattice steel towers within these segments will be replaced with tubular steel poles (TSPs), hybrid poles, or lattice steel poles (LSPs). The Palermo, Pease, and Rio Oso Sub Line segments will primarily require only tower modifications to support the new conductor.

The proposed project consists of modifications to existing facilities within an existing utility corridor. The project team will utilize existing access roads, whenever possible, to construct and maintain the power line system.

This chapter has been prepared in accordance with the California Public Utilities Commission (CPUC) Proponent's Environmental Assessment Checklist (dated November 24, 2008) and describes the project's objective, location, purpose and need, and construction methods. This chapter also provides a detailed description of the project components that will be constructed or modified as part of the project.

## 2.2 PROJECT OBJECTIVE, PURPOSE, AND NEED

The Palermo–Rio Oso 115 kV transmission system is composed of several 115 kV lines located in Butte, Yuba, and Sutter Counties that connect PG&E's Palermo, Pease, Bogue, and Rio Oso substations. CAISO has identified the need to improve and upgrade this system to address overloads and potential power outages affecting customers in the service area. The 2010–2011 CAISO transmission plan indicated that the Pease–Rio Oso 115 kV power line would exceed CAISO's normal rating with all lines in-service, and that the Bogue–Rio Oso 115 kV, Palermo–Bogue 115 kV, Palermo–Pease 115 kV, and Rio Oso-Nicolaus power lines would exceed their emergency rating for certain contingencies beginning variously in 2014, 2015 and 2020. In 2015, CAISO conducted a review of projects that had previously been approved, including the South of Palermo 115 kV Power Line Reinforcement Project. As explained in the 2015-2016 CAISO transmission plan, the CAISO study confirmed the need to implement this project to address the thermal overloads identified previously. The South of Palermo project will address the identified reliability issues, increasing system capacity by approximately 120 Megawatts (MW).

In addition, PG&E's Palermo–Rio Oso transmission system contains components built in the early 1900s. Conductors and some support structures along these lines are aging and need to be replaced.

Thus, the objectives of the South of Palermo 115 kV Power Line Reinforcement Project are:

- **Maintain transmission system reliability.** The main project objective is to ensure that the Palermo–Rio Oso 115 kV transmission system will continue to meet planning standards and criteria established by the CAISO and North American Electric Reliability Council (NERC).

- **Replace aging facilities.** The second objective is to replace aging electrical transmission conductors and support structures in a cost-effective and environmentally sensitive manner to maintain a safe transmission system.

## 2.3 PROJECT LOCATION

The project is located between the communities of Oroville to the north and East Nicolaus to the south, spanning portions of Butte, Sutter, and Yuba counties. Modifications will be made to power lines in the cities of Yuba City, Marysville and Oroville and near the communities of Palermo, Honcut, Tierra Buena, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus. Prominent geographic features that intersect the project alignment include the Feather River, Yuba River, and numerous highways including State Route (SR) 99, SR 70, SR 65, and SR 20. Agriculture, primarily orchards and rice fields, is the predominant land use throughout much of the project alignment. In the portions of the project near developed communities, the land use is primarily residential, interspersed with industrial development.

Detailed location information is provided below by project segment and is shown in Figure 2.3-1: Project Overview Map.

### 2.3.1 SOUTH OF PALERMO LINE

The alignment of the South of Palermo Line is approximately 38.7 miles long and runs in a generally north–south direction from Palermo Junction, which is near the intersection of Ophir Road and Lincoln Boulevard near the communities of Oroville and Palermo, to Rio Oso Junction, which is near the intersection of Watts Avenue and Pacific Avenue in the community of East Nicolaus. The alignment crosses portions of Butte, Yuba, and Sutter Counties, a small portion of Marysville and Oroville, and includes portions of the Pease–Rio Oso and Palermo–Pease 115 kV power lines.

### 2.3.2 PALERMO SUB LINE SEGMENT

The Palermo Sub Line Segment is located at the northern end of the project in southern Butte County. It extends eastward approximately 1.6 miles from Palermo Junction to Palermo Substation, which is near the intersection of Stageline Road and Drescher Tract Road northeast of the community of Palermo. It includes portions of the Palermo–Pease and Caribou–Palermo power lines.

### 2.3.3 PEASE SUB LINE SEGMENT

The Pease Sub Line Segment is located in Yuba and Sutter Counties and extends approximately 5.2 miles west from the South of Palermo Line, crossing over the Feather River, SR 70, SR 99, and a small portion of Yuba City. It connects to the South of Palermo Line at Pease Junction northeast of Marysville, near the intersection of Jack Slough Road and Kimball Lane, and terminates at Pease Substation at the intersection of Pease Road and Tierra Buena Road near the community of Tierra Buena. It includes portions of the Palermo–Pease and Pease–Rio Oso power lines.

### 2.3.4 BOGUE SUB LINE SEGMENT

The Bogue Sub Line Segment is in western Yuba and eastern Sutter Counties. It extends approximately 6.4 miles west from the South of Palermo Line and crosses over the Feather River. It connects to the South of Palermo Line at Bogue Junction, near George Avenue in the unincorporated town of Olivehurst. The line terminates at Bogue Substation near the intersection of Bogue Road and Railroad Avenue. It includes portions of the Palermo–Bogue and Bogue–Rio-Oso power lines.

### 2.3.5 RIO OSO SUB LINE SEGMENT LOOP

The Rio Oso Sub Line Segment Loop is at the southern end of the project in eastern Sutter County. It extends northeast from the South of Palermo Line at Rio Oso Junction to Rio Oso Substation on Hicks Road, and then loops back to Rio Oso Junction along an alignment to the south, for a total of approximately 7.6 miles. It includes portions of the Bogue–Rio Oso, East Nicolaus–Rio Oso, Pease–Rio Oso, and Rio Oso–West Sacramento power lines.

## 2.4 EXISTING SYSTEM

PG&E's Palermo–Rio Oso transmission system in Butte, Yuba, and Sutter Counties is composed of 230 kV, 115 kV, and 60 kV lines and substation facilities and serves more than 100,000 customers from Palermo, Honcut, Pease, Marysville, Olivehurst, Bogue, East Nicolaus, and Rio Oso substations.

Portions of the 115 kV power lines in the Palermo–Rio Oso system are constructed on towers built in the early 1900s. The South of Palermo Line is a single-circuit line on transmission towers from Palermo Junction to Rio Oso Junction. The other line segments that are part of this project and described above are double-circuit lines that carry two individual 115 kV lines on one set of transmission towers (Figure 2.3-2). None of the power lines included in this project has distribution under build or extensive collocated communications facilities.

In addition to providing 115 kV transmission power to local area electric customers, the lines in the Palermo–Rio Oso transmission system also serve as a transmission path for a significant amount of hydro generation energy to flow into PG&E's local area network. The hydro plants in the area include facilities along the Feather River between Lake Almanor and Lake Oroville and are connected to Table Mountain, Palermo, and Rio Oso substations. A portion of the output from these power plants flows through the Table Mountain substation to load centers in the Sacramento area through the 115 kV lines. These facilities, along with the Table Mountain–Vaca Dixon 500 kV line and the Table Mountain–Tesla 500 kV line, constitute a major transmission path for electric generation from hydroelectric plant facilities in the Pacific Northwest and local hydroelectric plants in the Sierra Nevada to load centers in the San Francisco Bay Area and southern California.

## 2.5 PROPOSED PROJECT

The project consists of reconductoring approximately 59.5 miles of 115 kV power line, replacing existing lattice steel towers and lattice steel poles along the alignment with TSPs, hybrid poles, LSPs or towers, and modifying towers along the alignment to support the new conductor. The

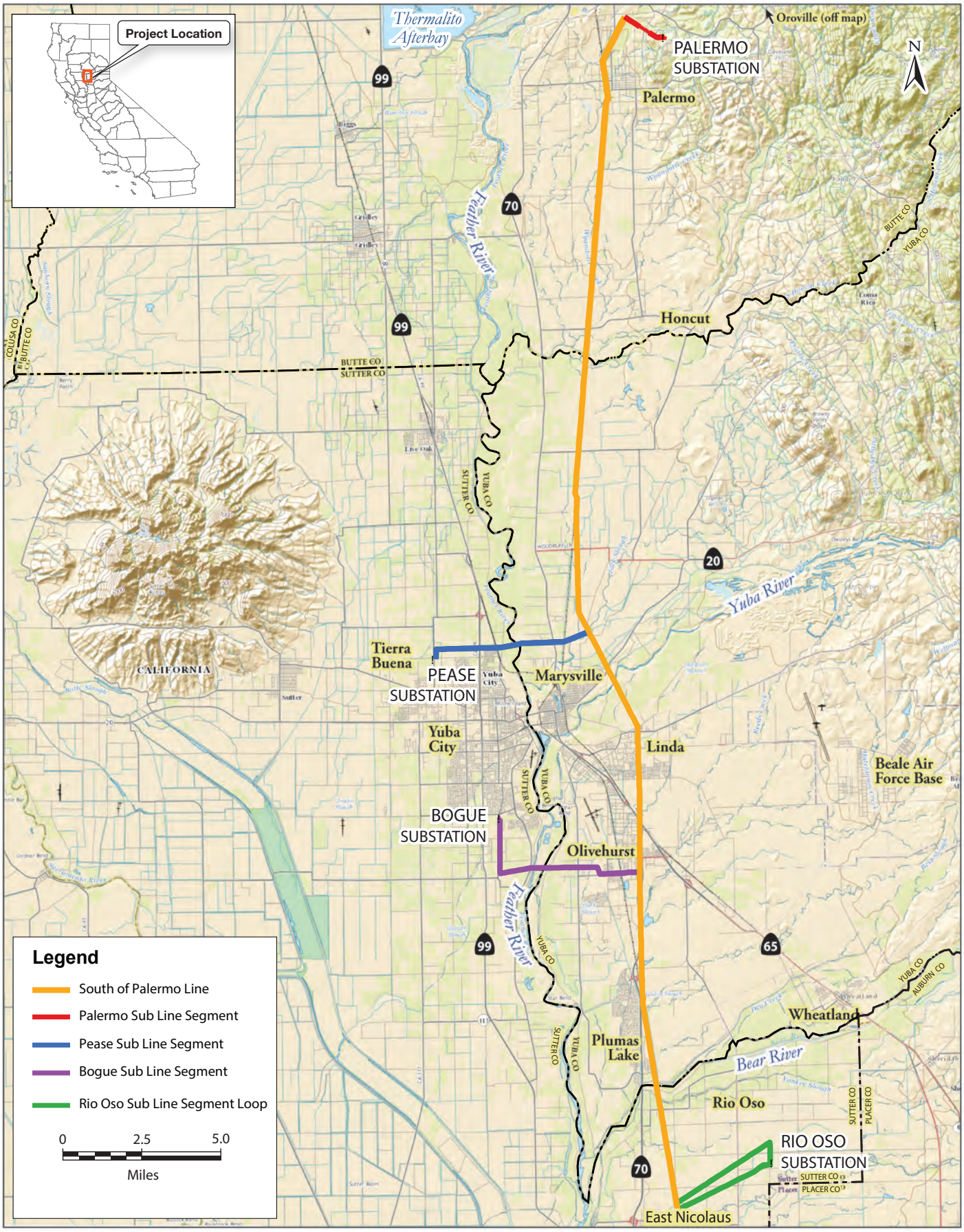
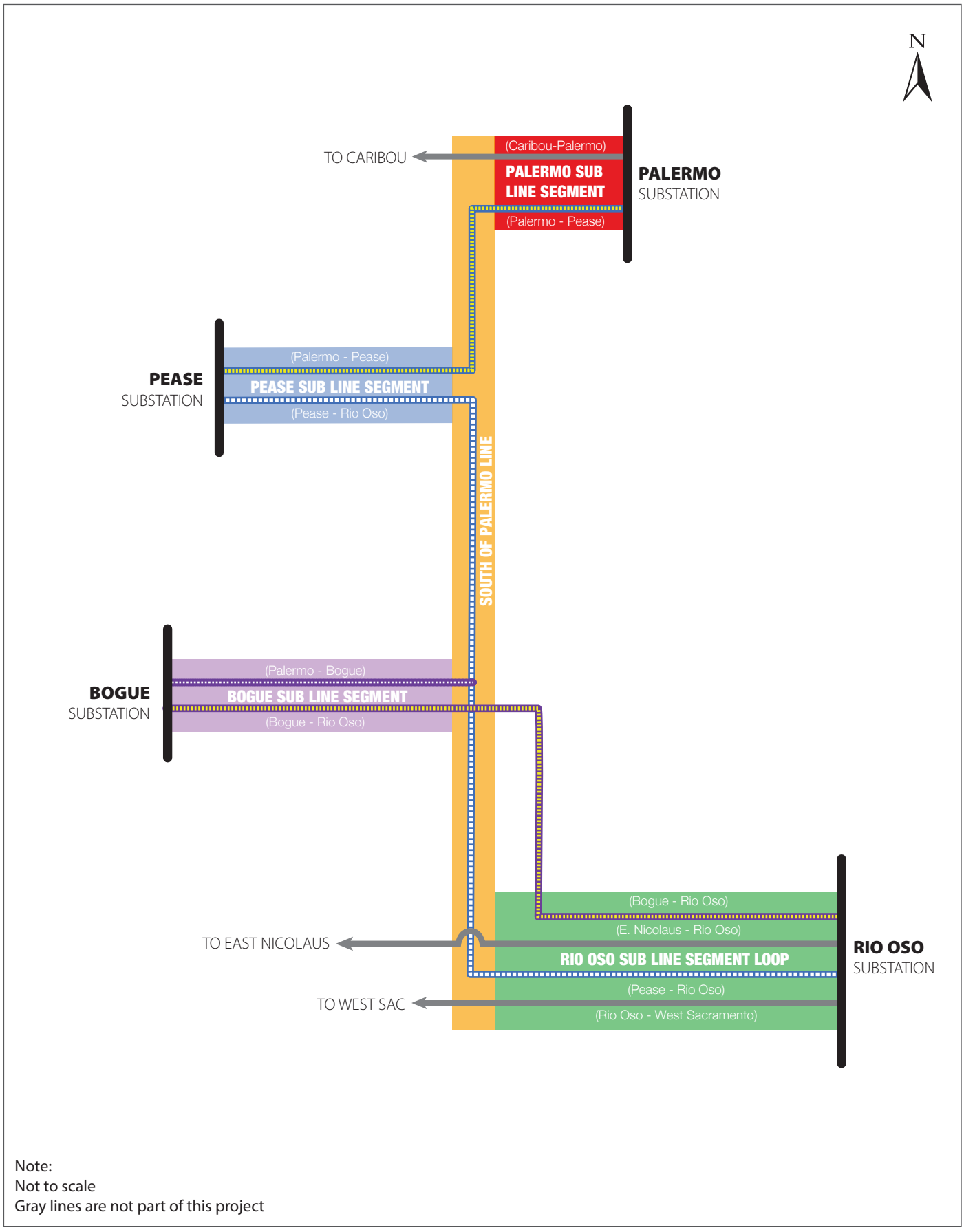


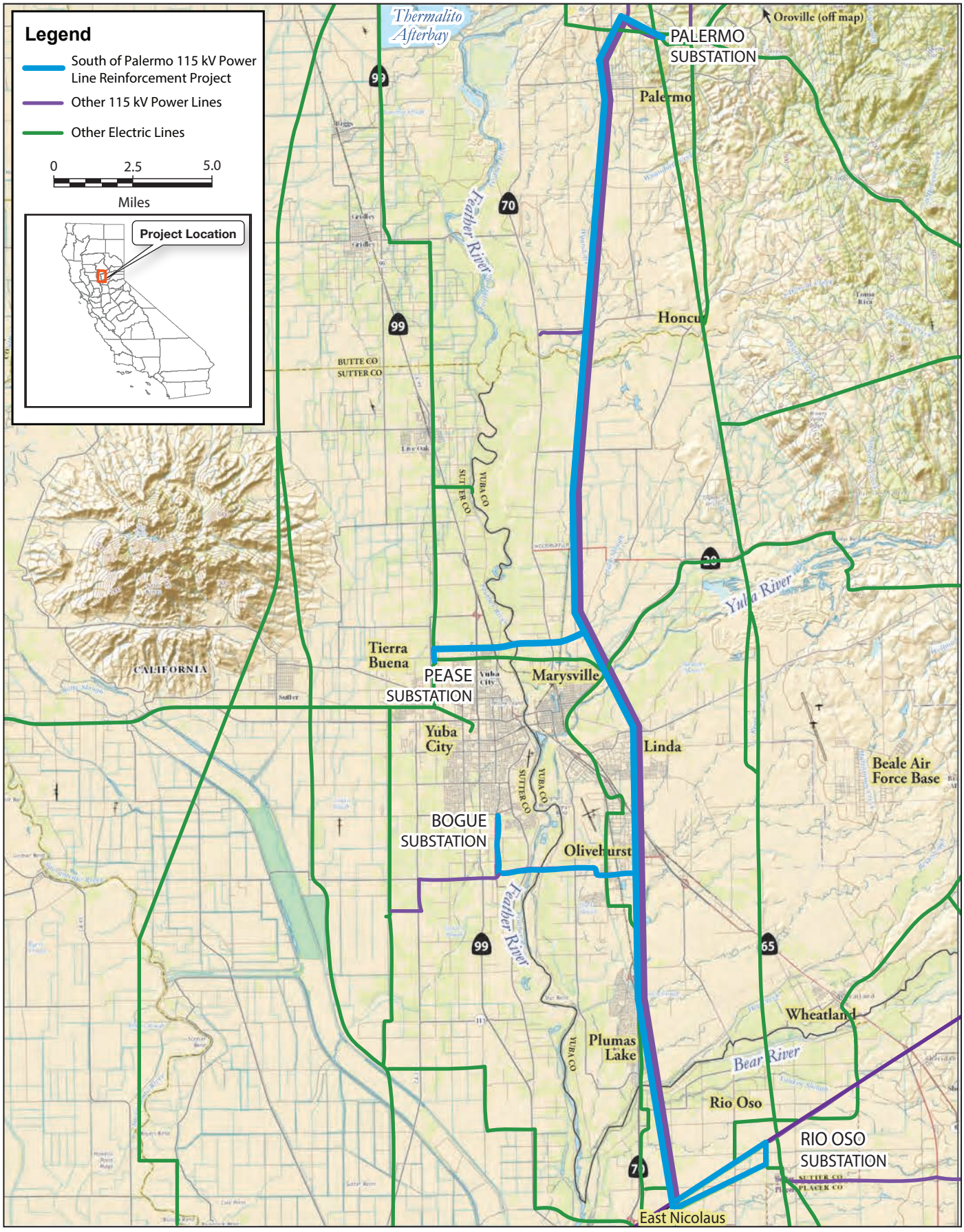

**Figure 2.3-1**
**Project Overview Map**
South of Palermo 115 kV Power Line Reinforcement Project




Note:
Not to scale
Gray lines are not part of this project

00441115 Palermo_South (08-2015) SS

**Figure 2.3-2**
**Circuit Design**
South of Palermo 115 kV Power Line Reinforcement Project




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**Figure 2.3-3**
Existing Transmisson Facilities
South of Palermo 115 kV Power Line Reinforcement Project

largest component of the project is the reconductoring and structure replacements along the South of Palermo Line (approximately 38.7 miles). As noted above, the project also includes reconductoring, structure replacements, and other modifications on four shorter double-circuit segments. Details of each segment are provided below.

### 2.5.1 SOUTH OF PALERMO LINE

This portion of the project includes reinforcing and reconductoring approximately 38.7 miles of 115 kV single-circuit power line between Palermo Junction and Rio Oso Junction. The northern portion of the alignment, approximately 19.9 miles, connects Palermo Substation to Pease Substation. The southern portion, approximately 18.8 miles, connects Pease Substation to Rio Oso Substation. The existing conductor is currently supported by approximately 305 lattice steel towers. Existing equipment will be upgraded or replaced to ensure it is sized and configured adequately to accommodate the new conductor. Most of the existing towers will be replaced as described below. The following construction activities are anticipated:

- Establish temporary overland access routes and maintenance/minor improvements to existing access routes.
- Establish work areas at towers/poles, pull sites, staging areas, and helicopter landing zones.
- Stage material and equipment at lay down areas.
- Install approximately 278 new poles in line within approximately 20 feet of existing structures.
- Minor modifications to some existing structures.
- Demolish and remove old lattice steel towers.
- Install temporary guard structures and snub poles.
- Install approximately 5 new switches.
- Install new conductor.

### 2.5.2 PALERMO SUB LINE SEGMENT

The Palermo Sub Line Segment (approximately 1.6 miles long) is supported by approximately 10 lattice steel towers that may be subject to minor modification. The segment runs north-northwest from Palermo and is located within unincorporated areas of Butte County, south of Oroville. The following construction activities are anticipated.

- Establish temporary overland access routes and maintenance/minor improvements to existing access roads.
- Establish work areas at towers and pull sites.
- Stage material and equipment at lay down areas.
- Install temporary guard structures and snub poles.
- Install new conductor.

### 2.5.3 PEASE SUB LINE SEGMENT

The Pease Sub Line Segment (approximately 5.2 miles long) is supported by approximately 25 towers. It generally runs east–west and is located within unincorporated areas of Yuba and Sutter Counties, north of Marysville. The following construction activities are anticipated:

- Establish temporary overland access routes and maintenance/ minor improvements to existing access roads.
- Establish work areas at towers and pull sites.
- Stage material and equipment at lay down areas.
- Replace approximately one tower in line within approximately 20 feet of existing structure.
- Install top cage extensions on approximately five towers.
- Install temporary guard structures and snub poles.
- Install new conductor.

### 2.5.4 BOGUE SUB LINE SEGMENT

The Bogue Sub Line Segment (approximately 6.4 miles long) is supported by approximately 56 lattice steel towers, all or most of which will be replaced as part of the project. This line segment generally runs east–west and is located within Yuba and Sutter counties south of Marysville. The following construction activities are anticipated.

- Prepare temporary overland access routes and maintenance/ minor improvements to existing access roads.
- Establish work areas at towers and pull sites.
- Stage material and equipment at lay down areas.
- Replace approximately one tower in line within approximately 20 feet of existing structures
- Install temporary wood poles (shoofly).
- Install approximately 55 poles in line within approximately 20 feet of existing structures.
- Minor modifications to some existing structures.
- Demolish and remove old lattice steel poles and towers.
- Install temporary guard structures and snub poles.
- Install new conductor.

### 2.5.5 RIO OSO SUB LINE SEGMENT LOOP

The Rio Oso Sub Line Segment Loop, consisting of two double-circuit lines that form a loop approximately 7.6 miles long, is supported by approximately 45 lattice steel towers, some of which will be modified. The line generally runs northeast–southwest and is located within an unincorporated area of Sutter County. The following construction activities are anticipated.

- Establish temporary overland access roads and improvements to existing access roads.
- Establish work areas at towers and pull sites.
- Stage material and equipment at lay down areas.
- Replace approximately one tower in line within approximately 20 feet of existing structure.
- Install cage top extension on approximately 15 towers.
- Install temporary guard structures and snub poles.
- Install new conductor.

### 2.5.6 SUBSTATIONS

Minor modifications will be made to substation equipment and facilities at Palermo, Pease, Bogue, and Rio Oso substations to tie the new conductor into the substations. Substation work consists of connecting the new conductor to the existing substation configuration, which may

include the installation or replacement of switches, breakers, and other existing equipment. All work will be completed within existing substation fence lines. No substation expansions are proposed.

## 2.6 PROJECT COMPONENTS

### 2.6.1 RECONDUCTORING

#### 2.6.1.1 South of Palermo Line

The existing 115 kV conductor on the single-circuit South of Palermo Line is type 336-30/7 aluminum conductor steel-reinforced (ACSR), capable of carrying 449 amperes (amps) under summer normal conditions and 512 amps under summer emergency conditions. To maintain reliability, the project will replace the existing conductors with 1.092-inch-diameter, non-specular (dulled finish) type 1113 all aluminum conductor (AAC), which is rated to handle 975 amps under summer emergency conditions. Insulators will be replaced along the entire single-circuit line. The span distances between structures vary from approximately 351 feet to 1,372 feet. Minimum ground clearance will be 28 feet.

#### 2.6.1.2 Palermo Sub Line Segment

The existing 115 kV conductor on the Palermo Sub Line Segment is 715 all aluminum (AA), capable of carrying up to 742 amps under summer emergency conditions. The line will be reconductored with new 477 aluminum conductor steel supported (ACSS) rated to handle a maximum of 1,126 amps under summer emergency conditions. The span distances between structures vary from approximately 235 feet to 1,082 feet. To optimize operations and maintenance activities, insulators along the entire double-circuit line will be replaced. Minimum ground clearance will be 28 feet.

#### 2.6.1.3 Pease Sub Line Segment

The existing 115 kV conductor on the Pease Sub Line Segment is 397 AA, capable of carrying up to 514 amps under summer emergency conditions. The line will be reconductored with new 477 ACSS rated to handle a maximum of 1,126 amps under summer emergency conditions. The span distances between structures vary from approximately 380 to 1,170 feet. To optimize operations and maintenance activities, insulators along the entire double-circuit will be replaced. Minimum ground clearance will be 28 feet.

#### 2.6.1.4 Bogue Sub Line Segment

The existing 115 kV conductor on the Bogue Sub Line Segment is 397 AA, capable of carrying up to 514 amps under summer emergency conditions. To maintain reliability, the line will be reconductored with new 1,113 AAC rated to handle a maximum of 975 amps under summer emergency conditions. The span distances between structures vary from approximately 380 feet to 1,231 feet. To optimize operations and maintenance activities, insulators along the entire double-circuit line will be replaced. Minimum ground clearance will be 28 feet.

#### 2.6.1.5 Rio Oso Sub Line Segment Loop

The existing 115 kV conductor on the Rio Oso Sub Line Segment Loop is 397-19 AAC-26/7, capable of carrying up to 514 amps, and 397-26/7 ACSR, capable of carrying 563 under summer emergency conditions. To maintain reliability, the line will be reconductored with new 477-24/7 ACSS rated to handle a maximum of 1,126 under summer emergency. The span distances between structures vary from approximately 155 feet to 1,419 feet. To optimize operations and maintenance activities, insulators along the entire double-circuit line will be replaced. Minimum ground clearance will be 28 feet.

### 2.6.2 NEW AND MODIFIED STRUCTURES

The project will include a combination of new pole installation and modification of existing towers as described below. Alternative pole designs and framing may be used depending on site conditions and design requirements.

Tower modifications will consist of installing top cage extensions that will increase the tower height to provide adequate ground clearance for the new conductor.

#### 2.6.2.1 South of Palermo Line

Work on the single-circuit South of Palermo Line will include the replacement of approximately 278 existing lattice steel towers with a combination of TSPs, hybrid poles, and LSPs. Figures 2.6-1 through 2.6-3 identify typical designs for these structures. Existing towers range from approximately 75 feet to 95 feet tall.

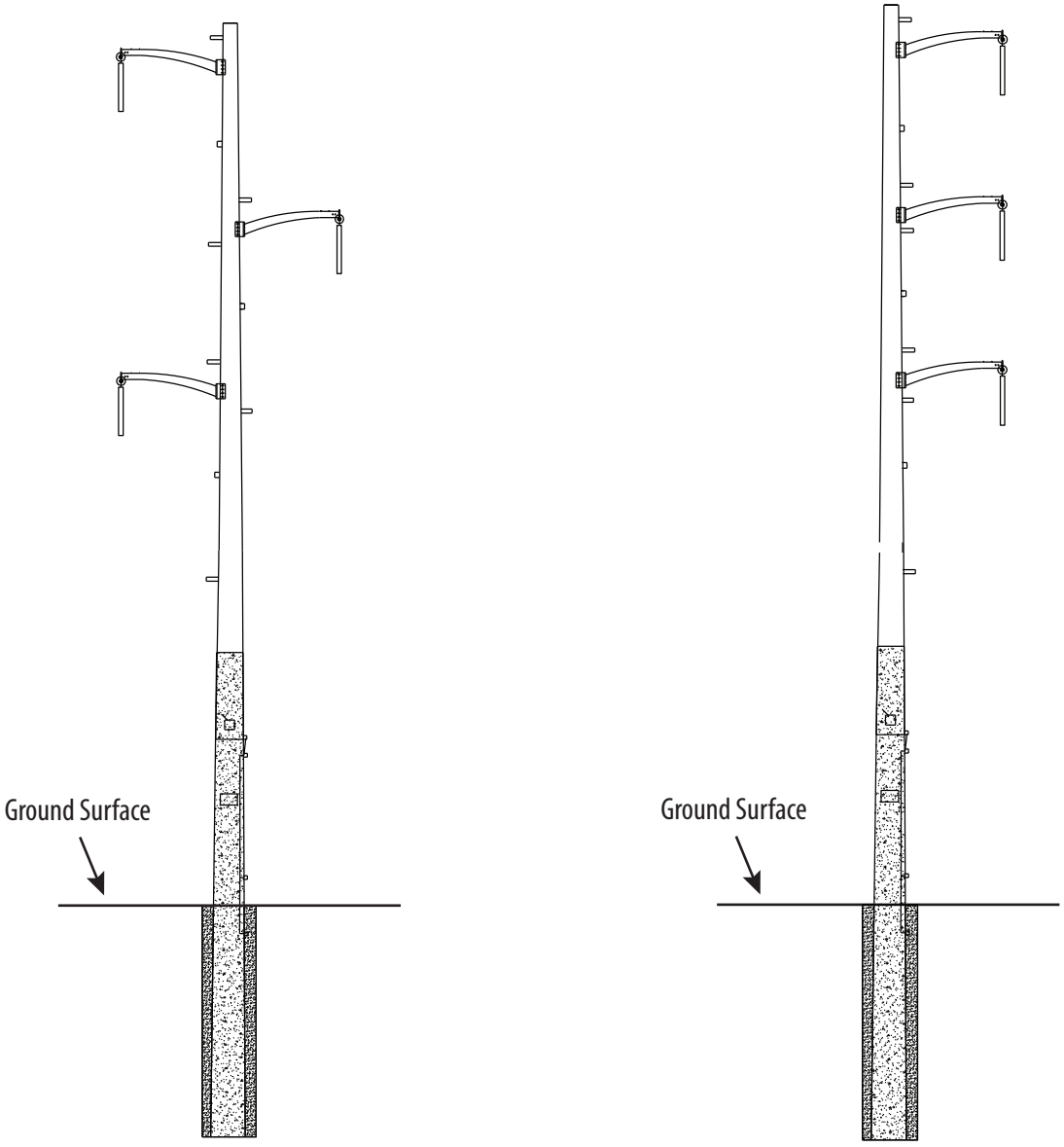
Some of the span lengths will be altered slightly from the existing spans, as new pole placement has been designed to avoid sensitive resources.

A hybrid pole combines conventional tubular steel and spun concrete to form a sectional composite pole design (Figure 2.6-1). The pole is direct buried approximately 14-35 feet in the ground and does not require a poured concrete foundation. The upper pole will be galvanized and dull gray in color. The hybrid poles will be approximately 75 to 100 feet tall.

TSPs will be used at angle, dead-end, conductor transposition, and equipment (switch) poles where a stronger structure is needed. This structure consists of a prefabricated steel top that is bolted to a poured-in-place concrete foundation extending approximately 16-24 feet into the ground (Figure 2.6-2). The pole will be galvanized and dull gray in color. The height of these poles will be approximately 90–140 feet.

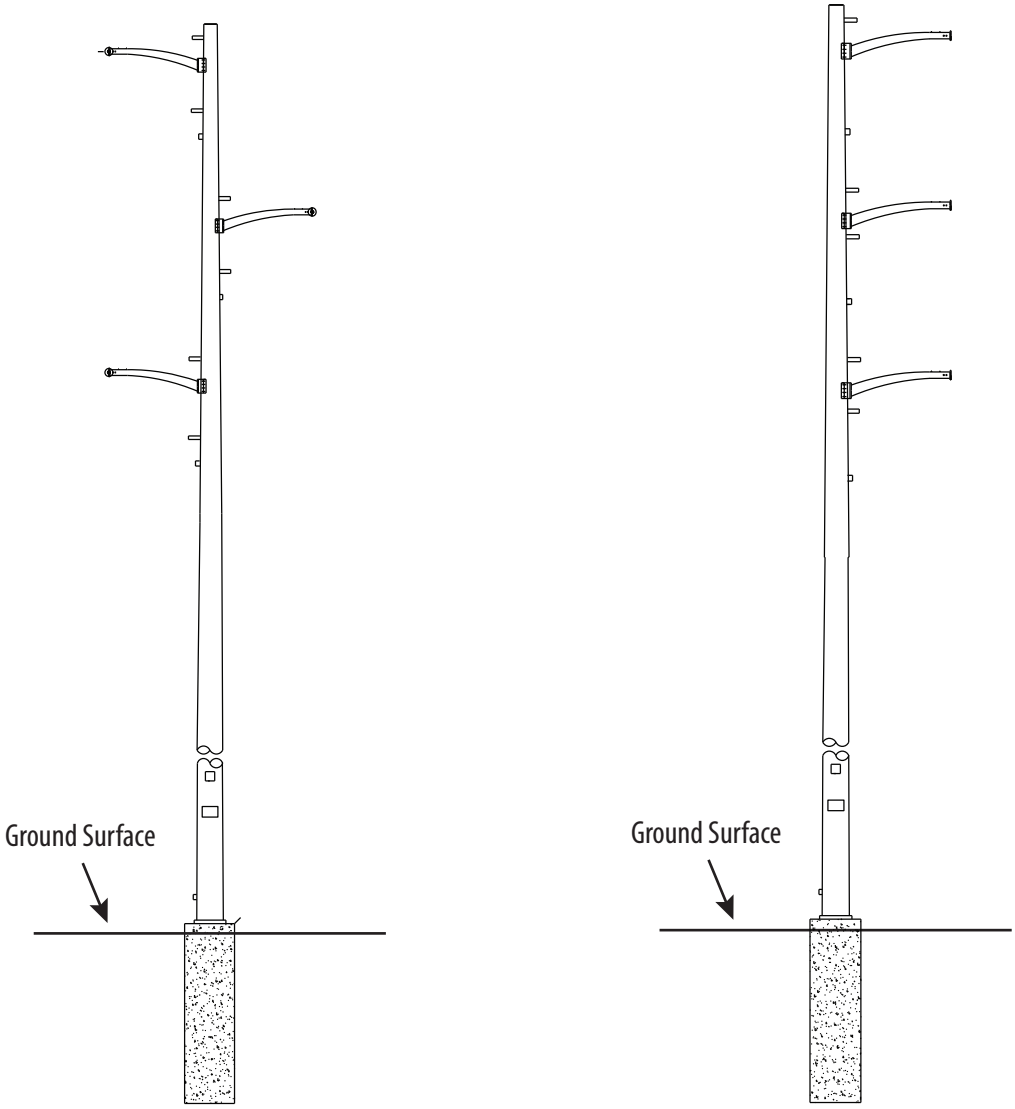
LSPs will be installed in locations where there is not sufficient room to install TSPs or hybrid poles (Figure 2.6-3). The pole will be galvanized and dull gray in color. Like TSPs, the LSPs will be installed onto a poured-in-place foundation. The height of these structures will be approximately 85 feet.

No guys are planned for these structures.



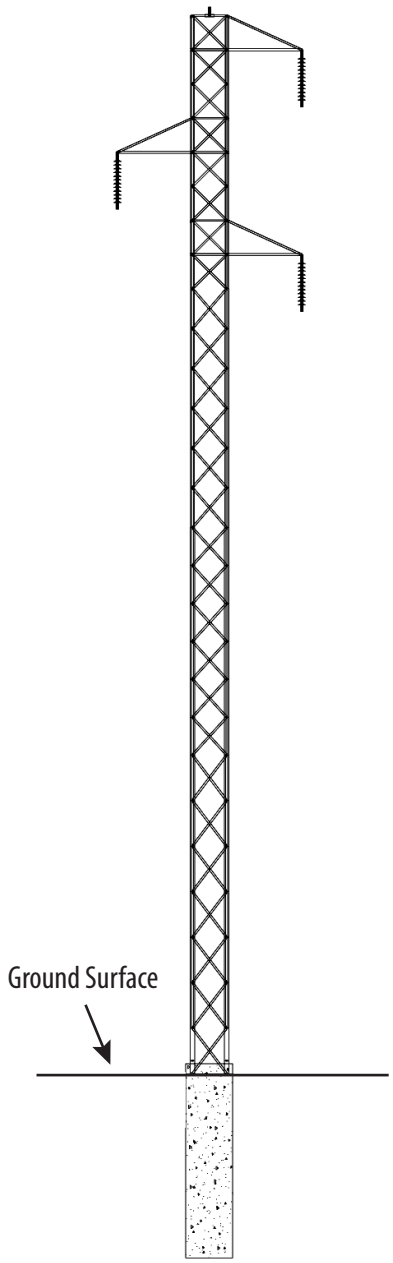

00441.15 Palermo_South 1-PEA figures (04-01-2016) TAG

**Figure 2.6-1**
**Typical Single-Circuit Hybrid Pole Designs**
South of Palermo 115 kV Power Line Reinforcement Project




00441.15 Palermo_South 1 -PEA figures (04-01-2016) TAG

**Figure 2.6-2**
**Typical Single-Circuit Tubular Steel Pole Design**
South of Palermo 115 kV Power Line Reinforcement Project




00441.15 Palermo_South 1-PEA figures (04-01-2016) TAG

**Figure 2.6-3**
**Typical Single-Circuit Lattice Steel Pole Design**
South of Palermo 115 kV Power Line Reinforcement Project

#### 2.6.2.2 Palermo Sub Line Segment

No structures will be replaced, and only minor modifications may be made to structures on the Palermo Sub Line Segment.

#### 2.6.2.3 Pease Sub Line Segment

Top cage extensions will be installed on approximately 5 of the approximately 25 lattice steel towers on the Pease Sub Line Segment to raise the height of the towers by approximately 10 to 20 feet. Approximately one lattice steel tower will be replaced with a new lattice steel tower.

#### 2.6.2.4 Bogue Sub Line Segment

Existing lattice steel towers and LSPs on the Bogue Sub Line Segment will be replaced with a combination of hybrid poles and TSPs at approximately 55 locations (Figure 2.6-4).

#### 2.6.2.5 Rio Oso Sub Line Segment Loop

Top cage extensions will be installed on approximately 15 of the approximately 45 towers on the Rio Oso Sub Line Segment loop. Approximately one lattice steel tower will be replaced in its current location with a new lattice steel tower (Figure 2.6-4).

### 2.6.3 TEMPORARY STRUCTURES

#### 2.6.3.1 Guard Structures

Temporary guard structures will be installed at certain road, rail, and aboveground utility crossings. Guard structures are installed as a safety precaution to prevent conductor from falling to the ground should it be dropped or sag excessively during reconductoring. These structures will be temporary direct-bury wood poles that typically extend approximately 50 feet aboveground and approximately 7 feet belowground.

In lieu of installing temporary wood poles as guard structures, bucket or line trucks may be staged at crossings to minimize ground disturbance or to accommodate other construction-related needs.

Some guard structures will include netting that will be installed at highway and railroad crossings to provide additional protection against falling or sagging conductor. The netting will be attached to guard structures placed on both sides of protected routes or lines. It is anticipated that a combination of temporary lane closures and rolling road blocks will be required to install the nets.

#### 2.6.3.2 Snub Poles

Snub poles are temporary wood poles used to facilitate pulling operations. Approximately four temporary snub poles may be required at each pull site where the conductor cannot be attached directly to the structure because of structure design. Snub poles typically extend approximately 70 feet aboveground and approximately 10 feet belowground. Snub poles will be removed upon completion of each wire pull.

#### 2.6.3.3 Shoofly

A shoofly is a temporary offset line that is installed when the line being worked on must remain energized during construction. A shoofly will be required during construction of the Bogue Sub Line Segment and will consist of wood poles installed immediately adjacent to the line to temporarily support the conductor. See Section 2.8, Construction, for a more detailed discussion.

## 2.7 RIGHT-OF-WAY REQUIREMENTS

PG&E believes that is has adequate existing rights to construct the project along the existing alignment. PG&E may choose to perfect, modify, clarify, or upgrade its existing easements to bring them into conformance with current practices, to discourage encroachments, or for other reasons. Temporary construction easements may be obtained to accommodate pull sites, staging areas, and landing zones located outside of easements.

Land entitlement issues are not part of this regulatory proceeding, in which the CPUC is considering whether to grant or deny PG&E's application for a permit to construct new electrical facilities. Any land rights issues will be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the Commission on PG&E's application (see, for example, Jefferson-Martin 230 kV Transmission Project, A.02-04-043, D.04-08-046, p. 85).

## 2.8 CONSTRUCTION

The following discussion is preliminary and based on typical construction practices and anticipated construction needs. Final design may require modifications to the expected work areas, structure framing, or construction practices described herein; however, any proposed modifications would fall within the areas analyzed in this PEA. Accordingly, impacts associated with potential refinements are not anticipated to increase in any way from those analyzed in this PEA.

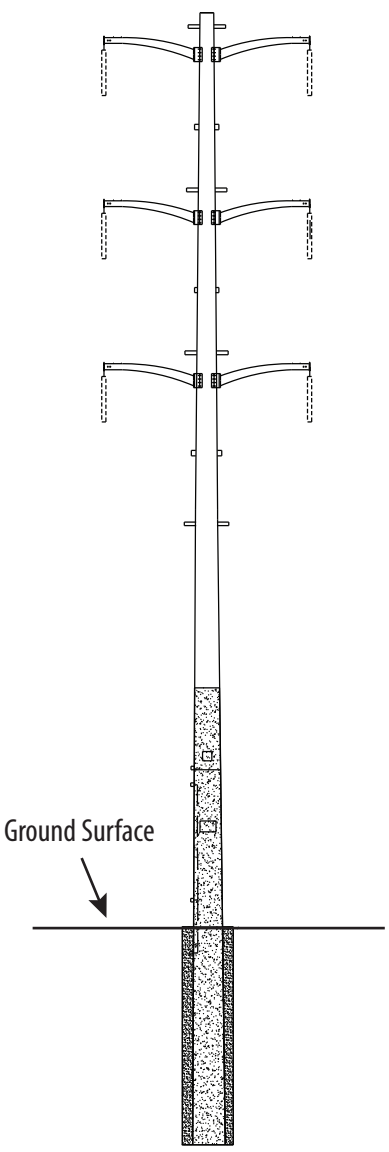
### 2.8.1 POWER LINE CONSTRUCTION

#### 2.8.1.1 Pole and Tower Installation

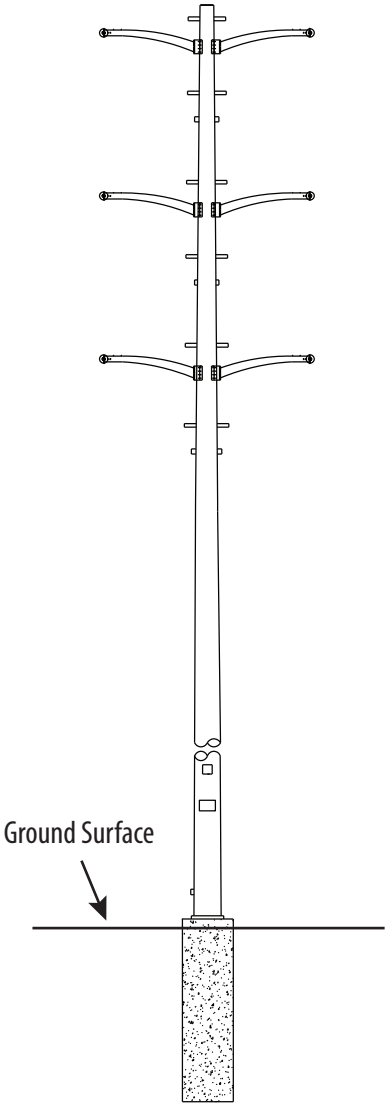
Approximate dimensions for hybrid poles, TSPs, LSPs, lattice steel towers and temporary wood poles are provided in Table 2.8-1. Most structure installation and removal is expected to be accomplished using a helicopter to minimize ground disturbance. Where use of a helicopter is infeasible, it is anticipated that approximately four to five truck trips to each structure location will be required to install new structures and remove existing structures.

#### 2.8.1.2 Hybrid Poles, Tubular Steel Poles, and Lattice Steel Poles

Each new TSP, hybrid pole, and LSP will be delivered on a flatbed truck and staged at a laydown yard in the vicinity of the tower to be replaced. The poles will then be picked up, delivered, and installed in most cases by using a helicopter to minimize ground disturbance. Where helicopter is not feasible, the new pole will be delivered and staged directly within the work area of the tower that it will be replacing, and a crane will be used to assemble and install each pole.




**HYBRID POLE**




**TUBULAR STEEL POLE**

00441.15 Palermo_South 1 -PEA figures (04-01-2016) TAG

**Figure 2.6-4**
**Typical Double-Circuit Pole Designs**
South of Palermo 115 kV Power Line Reinforcement Project

Installing TSPs and LSPs typically will include the activities described below to prepare the site, install the foundation, and install the pole.

**Table 2.8-1: Summary of Typical Structure Dimensions**

| Structure Feature | Structure Type | Approximate Metrics |
|---|---|---|
| Approximate Pole Diameter | Tubular Steel Pole | 30–50 inches (tip to base) |
| | Hybrid Pole | 35-60 inches (tip to base) |
| | Temporary Wood Pole | 16–24 inches (tip to base) |
| | Lattice Steel Pole | 24-48 inches (tip to base) |
| Approximate Auger Hole and Foundation or Pole Depth (below ground) | Tubular Steel Pole | 16–24 feet |
| | Hybrid Pole | 14-35 feet |
| | Temporary Wood Pole | 10 –13 feet |
| | Lattice Steel Pole | 16-24 feet |
| Maximum Excavation | Tubular Steel Pole | 192 cubic feet |
| | Hybrid Pole | 105 cubic feet |
| | Temporary Wood Pole | 39 cubic feet |
| | Lattice Steel Pole | 192 cubic feet |
| Approximate Footprint (Permanent and Temporary) | Tubular Steel Pole | 5–8 square feet (permanent) |
| | Hybrid Pole | 1–3 square feet (permanent) |
| | Temporary Wood Pole | 1–3 square feet (temporary) |
| | Lattice Steel Tower | 5–8 square feet (permanent) |
| Approximate Pole/Tower Work Area | Tubular Steel Pole | 0.3 acre |
| | Hybrid Pole | 0.05 acre |
| | Temporary Wood Pole | 0.06 acre |
| | Lattice Steel Pole | 0.3 acre |

After implementing required best management practice (BMP) measures, a work area will be established by mowing and, if required, surface blading or minor grading to create a level surface. Once work areas are established, a helicopter, line truck, or boom truck with a small crane mounted on a flatbed will be used to haul foundation forms, anchor bolts, rebar, and pole structures to the locations. The truck also will be used to place foundation forms, anchor bolts, and rebar prior to pouring the concrete for the foundations. A concrete truck (typically a four-wheel-drive mixer capable of delivering 10 yards of concrete) then will be used to deliver and pour concrete for TSP foundations.

After installing concrete foundations, a line or boom truck will be used to remove the form. The new pole then will be installed using a helicopter or crane to place the TSP on the foundation. Existing conductor then will be transferred to the new TSP using a helicopter or line truck, and the old tower, including foundations, will be removed. Once the old tower has been removed, remaining voids will be backfilled using soil excavated for the new pole. Excess soil on the site will be feathered around the work area or placed in a way consistent with applicable requirements and in consultation with the landowner.

After concrete delivery it will be necessary to clean the chutes and hoppers of concrete trucks of any remaining residue before it hardens. It is anticipated that self-washing concrete trucks with mobile containment will be used to deliver concrete to the work sites. Alternatively, portable washing stations may be established at various locations throughout the project alignment to minimize time between the concrete pour and truck clean out. These stations will include dike walls and tarping, allowing wash water to be contained and disposed of properly. Excess construction materials will be transported to an area service center or other appropriate facility for disposal in accordance with applicable laws.

Hybrid poles are direct buried into an augured hole. The prefabricated concrete base is set in the hole with a heavy crane and the hole is then backfilled and compacted. A helicopter or crane is used to fit the tubular steel upper portions of the structure to the concrete base.

Work methods on the Bogue Sub Line Segment will differ slightly because the line cannot be taken out of service when pole installation is scheduled to occur. Because the line must remain energized during pole installation, it would not be possible to maintain safe working distances during construction. For this reason, the line will be removed from the existing towers and transferred to temporary poles (also called a shoofly), allowing it to remain in service during construction. The shoofly will consist of one temporary wood pole, approximately 90 feet tall, installed near the perimeter of the work area at each pole replacement location. Additional shoofly poles may also be installed mid-span between the poles that will be replaced. This is needed because the shoofly poles may be shorter than the existing poles and, if installed one for one, might not provide adequate clearance between the conductor and the ground. After pole installation is complete, the conductor will be transferred to the new poles and the shoofly will be removed.

#### 2.8.1.3 Tower and Pole Removal

It is anticipated that a combination of cranes and helicopters will be used to remove existing towers and lattice steel poles. Some removal may require ground access; however, most structures will be removed using a helicopter. To remove the existing structures, a crane or helicopter will be rigged to the top of the structure tower and the legs will be cut off just above the foundations. The structure will be lowered to the ground where it will be either crushed onsite or transported to a staging area and crushed there. Crushed structures will be transported by truck to a recycling facility. Existing foundations will be removed entirely, including all concrete and steel, unless cutting them off below ground surface will reduce environmental impacts. The excavation will be filled in with the soils excavated from the new foundation sites.

#### 2.8.1.4 Tower Modifications

Installing cage top extensions may be accomplished using a helicopter, crew trucks, pickups, or boom trucks. Some towers may require ground access; however, it is anticipated that most tower modifications will be accomplished using a helicopter. The existing structures will be prepared for the insertion of the extension with the installation of any necessary braces or additional plates. The extensions are assembled at the nearest work area and then delivered to the structure to be modified.

#### 2.8.1.5 Reconductoring

During reconductoring activities, when existing conductor is replaced with new conductor, the existing power line and any distribution lines that cross will be taken out of service. (The only exception to this is the Bogue Sub Segment, which will be placed on temporary poles to remain in service. See Section 2.8.1.2.) To avoid potential safety concerns, a road closure or a rolling stop will be arranged before conductor installation begins at any locations where lines cross over roads. Any road closures that must occur on private and county roads typically will not exceed a few minutes in duration and will be coordinated with the County or landowner. Alternatively, guard structures may be installed at road crossings in lieu of road closures.

To replace a conductor with a new conductor, the existing conductor first will be detached from its support structure and temporarily lifted. Rollers then will be installed at the conductor's attachment point, and the conductor will be placed onto the rollers. The rollers will allow the conductor to be pulled through each structure until the conductor is ready to be pulled up to the final tension position. Installing rollers and detaching the existing conductor typically will be accomplished using a helicopter to transport workers and materials to each pole. Where helicopter access is not feasible, a bucket truck will be used. Crews will access each tower or pole work area by pick-up truck or bucket truck using identified existing access roads or temporary overland routes. Crews may also need to access mid-span locations to structurally reinforce splices (joints where conductor is connected) along the existing conductor to avoid conductor breakage during pulling operations. These locations may be accessed by truck, helicopter, or foot, depending on site conditions at the time of construction.

Once the rollers are in place for an entire section of conductor, the existing conductor will be pulled out of place. A cable will be attached between the old conductor and new conductor, which will be on a reel attached to a line truck at a pull site.

A line truck with a drum puller and empty conductor reel will pull the old conductor onto the reel, where it will be collected for salvage. Reel stands mounted on a line truck at the pull site will feed new conductor along the rollers that were previously installed at each structure, while also maintaining tension in the line so that it does not sag to the ground.

After the conductor is pulled into place, conductor sags will be adjusted to required tensions. The conductor will then be clamped to the end of each insulator as the rollers are removed. Vibration dampers and other accessories will be installed onto the conductor, and old conductor will be removed from sites on a line truck.

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

#### 2.8.1.6 Switching Operations

Reconductoring of the lines will require PG&E to temporarily take out of service specific sections of distribution and transmission lines that cross the power line or are co-located on the power line (also known as taking clearances). As part of ongoing operation and maintenance of the distribution system during project construction, PG&E's Distribution System Operations group will manage distribution clearances and balance the system by routing power to different lines. This normally involves turning existing distribution switches on and off and installing additional switches if needed.

Distribution switches may be located along the distribution lines that are being taken out of service or along other distribution lines that may be affected by taking a line out of service. Some switches are operated at a central location (such as a substation) or are controlled remotely. Other switches are operated manually in the field by operations personnel using a bucket truck or similar equipment. The location where switching activities will be required will depend on daily and seasonal power demand scenarios. PG&E crews will perform this work as needed to comply with safety procedures, to limit customer outages, and to manage the operational needs of the system. Turning a switch on or off generally takes only a few minutes and the crew returns to other work once the switching is completed. These distribution switching activities take place throughout PG&E's service territory and are an integral part of PG&E's ongoing operational activities.

### 2.8.2 CONSTRUCTION WORKFORCE AND EQUIPMENT

On a typical work day, approximately 15 to 20 construction workers will be at the project site; however, when work activities are conducted concurrently, approximately 45 workers may be at various locations onsite at any time. Workers may report to a field office in the vicinity of the project area or directly to the work location. Typical construction workers and types of equipment required for individual tasks are shown in Table 2.8-2, Typical Construction Workers and Equipment. During line work, crews typically will be working at adjacent poles. Table 2.8-3: Anticipated Construction Equipment, provides details on the types of equipment that are typically used for these activities. Not all equipment or workers may be used during all stages of the activity. This table represents a typical equipment list and may vary slightly when the project is implemented. Connection to existing distribution lines or generators is not anticipated as part of this project. All construction equipment will be self-powered.

**Table 2.8-2: Typical Construction Workers and Equipment**

| Activity | Number of Construction Workers | Equipment Quantity and Type |
|---|---|---|
| Site or access road improvements | 5 | 1 tractor with grader or mower<br>1 backhoe<br>1 small bulldozer<br>1 truck with trailer<br>1 water truck<br>1 light-duty pickup truck |
| Auger holes | 3 | 1 water truck<br>1 pickup truck<br>1 line truck with auger attachment |
| Haul material | 3 | 1 line truck with trailer<br>1 helicopter |
| Tubular steel pole installation | 6 per crew | 1 helicopter<br>1 line truck with boom and crane<br>2 crew-cab pickup trucks<br>1 light-duty pickup truck<br>1 hole digger<br>3 cement trucks<br>1 backhoe |
| Tubular steel pole delivery | 2 | 1 helicopter<br>1 pickup truck |
| Wood pole installation | 20 | 3 pickups<br>1 35-ton crane<br>3 line trucks<br>3 bucket trucks<br>3 light-duty pickup trucks<br>2 tractors<br>3 backhoes<br>8 small line/bucket trucks<br>1 dump truck<br>3 water trucks |
| Wood pole removal | 6 per crew | 2 crew-cab trucks<br>1 line truck with bucket and trailer |
| Tower modification | 6 | 1 helicopter<br>1 200-ton crane |
| Conductor installation | 6 per crew | 1 helicopter<br>1 line truck or semi-truck with conductor reel<br>2 pickup trucks<br>2 line trucks with bucket/crane<br>1 line truck with conductor puller<br>1 line truck with conductor tensioner |
| Substation modification | 5 | 1 pickup truck<br>1 line truck<br>1 bucket truck |

**Table 2.8-3: Anticipated Construction Equipment**

| Equipment | Use |
|---|---|
| Aerial lift | Lift crew members to make line connections |
| Auger | Drill holes for pole installation |
| Crane | Lift heavy equipment and materials |
| Crew-cab truck or pickup truck | Transport workers |
| Dump truck | Remove trash |
| Excavator | Install mats, trenching |
| Fork lifts | Install mats |
| Generator set | Generate power for operation of tools |
| Hand-digging equipment | Use for air or hydrologic-operated tooling |
| Helicopter (light and heavy duty) | Transport personnel workers, materials, and equipment. Install new poles and remove old towers |
| Line truck (with auger, puller, worker-lift bucket, and crane/boom) | Install and remove holes, poles, and conductor |
| Mechanics service trucks | Service and repair vehicles |
| Pickup truck (1 ton) | Transport equipment and materials |
| Plate compactor | Grade |
| Puller/Tensioner/Reel (line truck or trailer-mounted) | Install conductor |
| Pump | Dewater if groundwater is encountered; water for dirt suppression, if necessary |
| Reel trailers with reel stands (semi-trailer or truck-mounted type) | Haul conductor |
| Semi-truck (with trailer) | Haul motor grader, conductor reel, or tubular steel pole |
| Sweeper/scrubber | Clean roads, if necessary |
| Tensioner (line truck-mounted) | Install conductor |
| Tractor/loader/backhoe | Grade and remove foundation; backfill holes |
| Vacuum trailer | Clean up potential concrete washout during foundation installation |
| V-groove puller | Install conductor |
| Water truck | Suppress dust |
| Worker-lift (truck-mounted) | Lift workers to perform work on structures |

### 2.8.3 WORK AREAS

Removing existing towers and assembling and installing new poles will require an approximately 0.14-acre work area at each location. For tower modifications, smaller work areas of approximately 0.05 to 0.10 acre will be required. Mowing and vegetation removal is the only

site preparation expected to be necessary for the majority of the work areas; however, some limited leveling and filling may occur on an as-needed basis. Tree trimming and matting or plating of access routes may be required for vehicle access. In general, wet season worker access to structures will generally be from helicopter. Construction materials will be delivered using helicopters or line trucks and will be staged within work areas near existing structures. Restoration activities will be conducted in accordance with project APMs, project permits, and landowner preferences, as applicable.

Work areas located in flooded rice fields will be established by constructing berms that segregate the work areas and allow them to stay dry. Berm construction is typically conducted by the landowners. The timing and configuration of berm construction will coordinated with each landowner. Exclusion fencing may be required as a resource protection measure.

### 2.8.4 PULL SITES

Pull sites will be established at multiple locations throughout the project to facilitate reconductoring, and will be selected to avoid or minimize impacts on sensitive resources. The sites will be used for reconductoring activities and as staging areas for equipment and materials during pole construction and tower modification. Approximately 24 pull sites will be required, and they will be located generally in line with the conductor roughly 2 – 4 miles apart (Figure 2.8-1). The exact distances will vary depending on the layout of the existing line and planning constraints. Each site will have a footprint of approximately 1 acre and also be used as staging areas for equipment and material storage.

The locations and footprints of the sites will depend on conditions on the ground and will not be determined until just prior to construction. Site preparation is not expected to be necessary for most of the pull sites; however, some limited surface blading, grading, and filling may occur on an as-needed basis to create a stable and level work area. Vegetation removal, crop and orchard tree removal, tree trimming, matting or plating of drainage crossings, and placement of gravel may be required to establish safe and functional pull sites. Exclusion fencing may be required as a resource protection measure.

Access routes to proposed temporary staging areas are generally well established, and improvements to these routes are expected to be minimal.

### 2.8.5 HELICOPTER LANDING ZONES

Project construction will utilize helicopters in most locations. Using helicopters will minimize the amount of ground disturbance required to complete the project. The helicopter flight path will generally follow the existing alignment and avoid areas above residences. A Helicopter Use Plan will be developed prior to the start of construction and submitted separately to the CPUC staff.

Helicopter landing zones (LZs) will have a temporary footprint of up to approximately 1 acre and also be used as staging areas for equipment and materials storage. Exclusion fencing may be required as a resource protection measure. Approximately 27 LZs throughout the project area will be used for the project (Figure 2.8-1). Landing zones will be used to support helicopter operations including transporting personnel and materials to and from work areas, installing

poles, and removing towers. Ground access to landing zones will be by existing roads or temporary overland access routes. Site preparation is not expected to be necessary for the majority of the landing zones; however, some limited surface blading, grading, and filling to create a stable and level area may occur on an as-needed basis. Although the LZs will be located primarily in open areas , some vegetation removal, tree trimming, and matting or plating may be required for vehicle access to landing zones.

### 2.8.6 ACCESS ROUTES

Construction vehicles are anticipated to access work areas and pull sites primarily by using existing access routes that are used for existing operations and maintenance. In some cases, additional temporary overland routes may be required.

An overview of the types of preliminary access routes identified for use is provided in Table 2.8-4: Access Summary Table; however, planned access routes may change depending on construction needs and site conditions at the time of construction.

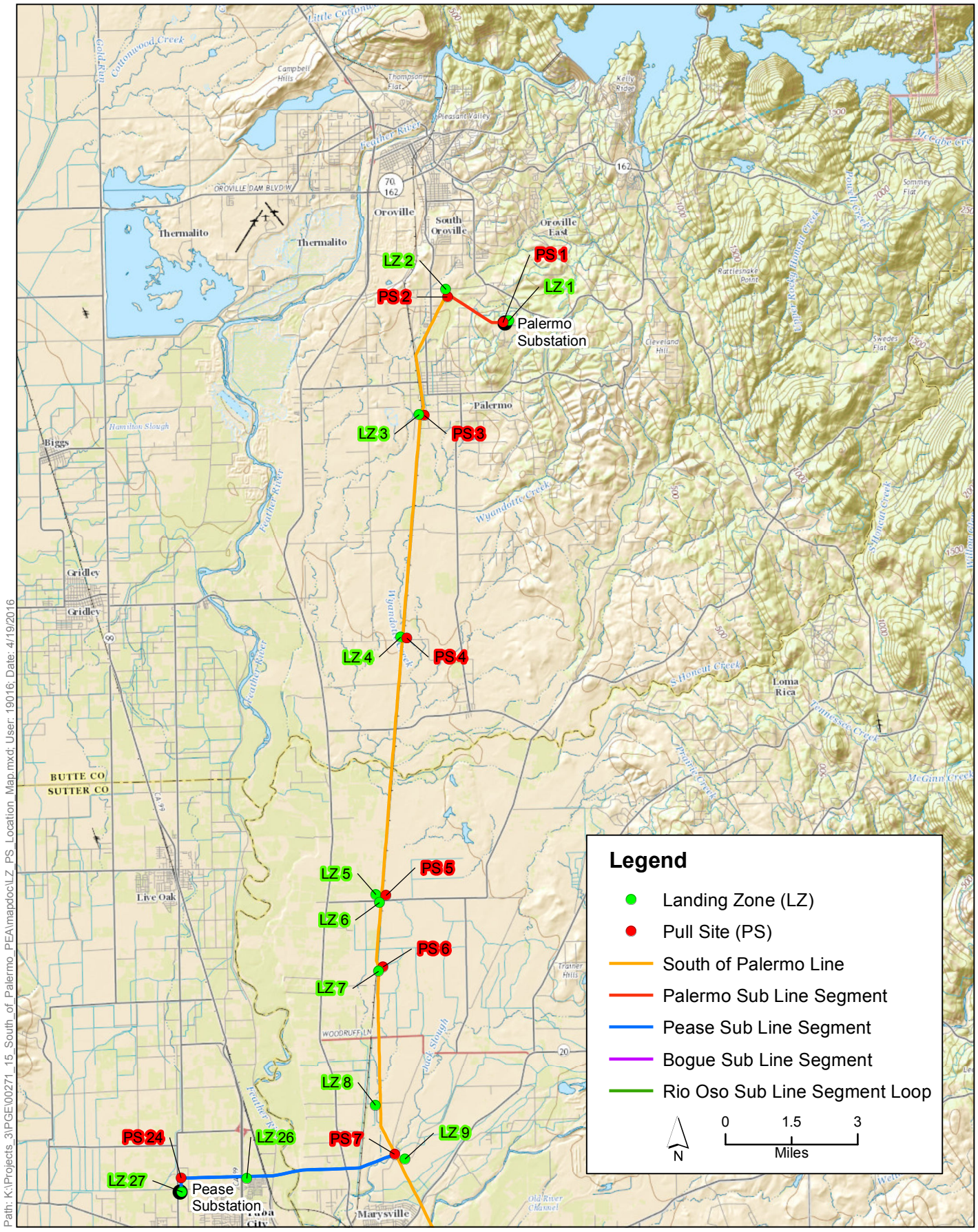
**Table 2.8-4: Access Summary Table**

| Road Type | Description | Potential Improvements Required |
|---|---|---|
| Existing Paved Road | Typically a highway or two-lane county road | None |
| Existing Dirt/Gravel Road | Typically a previously graded road with a dirt or gravel base | Minor road repair and maintenance, as needed |
| Existing Unpaved Road Requiring Improvement[a] | Typically an unmaintained previously graded road with a dirt or gravel base | Vegetation removal, grading, filling, or other repair and maintenance, as needed |
| Overland Route [a] | Typically relatively flat grassy areas | Mowing as needed |
| [a] Unpaved access roads and overland routes are expected to have a width of approximately 16 feet. | | |

### 2.8.7 EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION DURING CONSTRUCTION

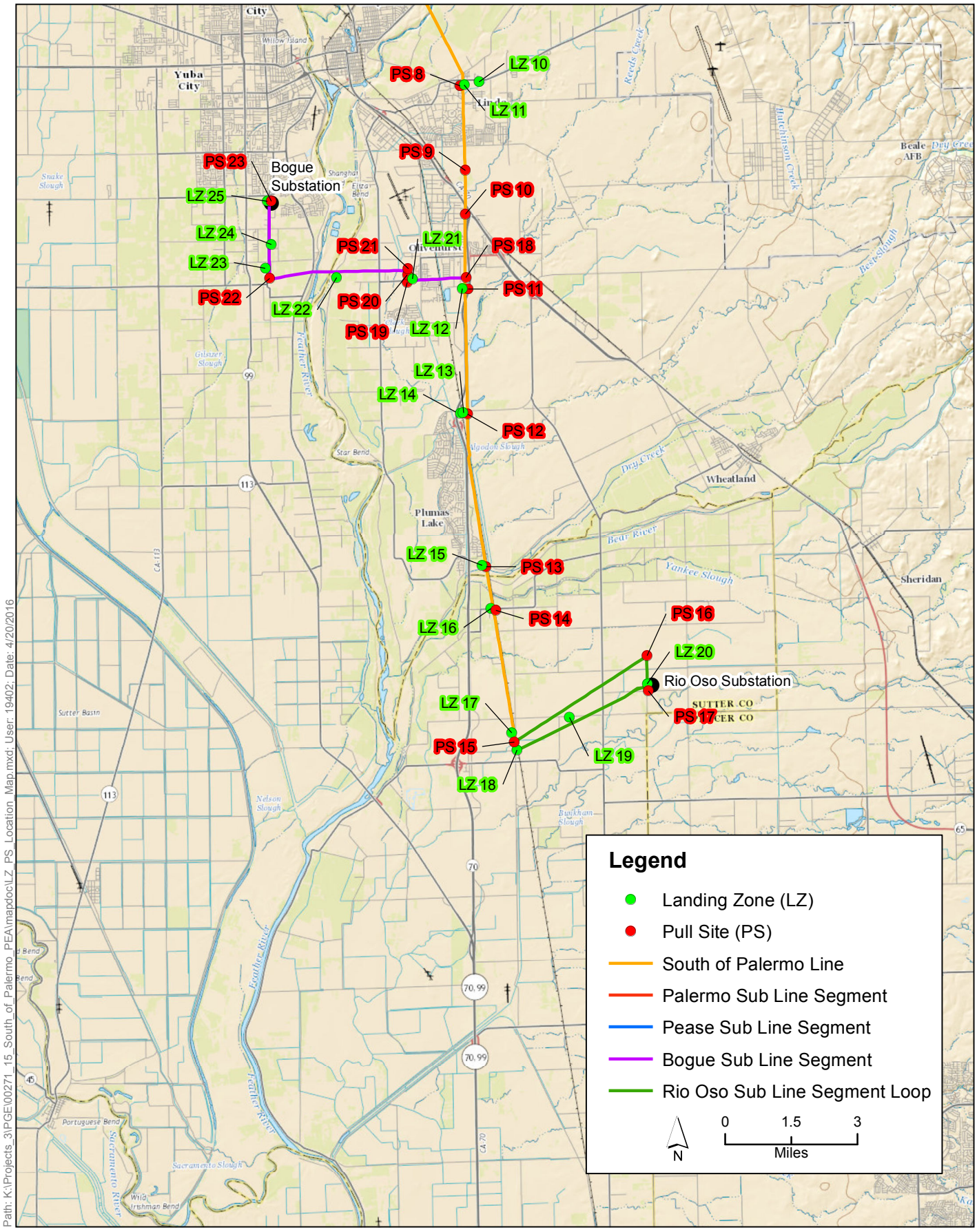
Construction will require ground-disturbing activities, including grading and vegetation clearing, in conjunction with the construction of necessary work areas, pole foundation and wood pole installation, and access road creation and improvement. Small, temporary stockpiles of excavated dirt may be located near the excavations for the temporary wood poles. These materials will be used to backfill the holes left by removing the existing structures. Stockpiles will be located away from waterways to the extent feasible, and other sediment control BMPs will be implemented to manage temporary stockpiles. Construction debris, including removed support structures and wood poles, will be taken to an area service center for recycling or disposal.

Because these activities will result in more than 1 acre of disturbance, PG&E will obtain coverage under the California State Water Resources Control Board (SWRCB) General Permit for Storm Water Discharges Associated with Construction Activity Order




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**Figure 2.8-1**
**Preliminary Landing Zones and Pull Sites**
South of Palermo 115 kV Power Line Reinforcement Project




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**Figure 2.8-1**
**Preliminary Landing Zones and Pull Sites**
South of Palermo 115 kV Power Line Reinforcement Project

Number 2009-0009-DWQ (General Permit). To obtain coverage under the General Permit, PG&E will develop and submit, as necessary, Permit Registration Documents—including a Notice of Intent, a stormwater pollution prevention plan (SWPPP), a risk assessment, a site map, certification, and an annual fee—to the SWRCB prior to initiating construction activities.

In conjunction with the SWPPP, appropriate BMPs (in addition to those listed below) will be developed for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, and other pollutants. These BMPs then will be implemented and monitored throughout construction by a qualified SWPPP practitioner.

Applicant-proposed measures (APMs) to reduce and avoid erosion and control sediment and pollution during construction are provided in Section 2.11, Applicant-Proposed Measures, and are discussed further in Section 3.8, Hazards and Hazardous Materials and Section 3.9, Hydrology and Water Quality.

### 2.8.8 BEST MANAGEMENT PRACTICES

Construction crews working on PG&E projects routinely use relevant BMPs to ensure crew and public safety and to avoid and minimize impacts on resources. At a minimum, the following BMPs will be implemented during project construction.

- Litter and Trash Management—All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers.

- Parking Requirements—Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas, as identified in this document. Off-road parking will only be permitted in previously identified and designated work areas.

- Route and Speed Limitations—Vehicles will be confined to established roadways and pre-approved access roads, overland routes, and access areas. Access routes and temporary work areas will be limited to the minimum necessary to achieve the project goals. Preliminary routes and boundaries of work areas, including access roads, will be mapped prior to initiating project construction. Vehicular speeds will be kept to 15 miles per hour (mph) on unpaved roads with no posted speed limit.

- Maintenance and Refueling Requirements—All equipment will be properly maintained for the duration of construction. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated work areas and, where feasible, located at least 100 feet from any aquatic habitat. Proper spill prevention and cleanup equipment will be maintained in all refueling areas.

- Prohibited Activities—Trash dumping, firearms, open fires (such as barbecues), hunting, and pets will be prohibited at work sites.

- Erosion Control Materials—Only tightly woven netting or similar material will be used for erosion control materials, such as coir rolls and geo-textiles, within or adjacent to suitable habitat for sensitive species. No plastic monofilament matting will be used.

### 2.8.9 CLEANUP AND POSTCONSTRUCTION RESTORATION

During construction, construction debris will be picked up from work areas and stored in approved containers onsite, and will be hauled away for recycling or disposal periodically during construction. Postconstruction, PG&E will conduct a final inspection to ensure that cleanup activities have been successfully completed as required. Restoration activities will be conducted as needed, in coordination with landowners and in compliance with the applicable APMs identified below (APM AG-1, APM BIO-5, APM BIO-14, APM HYDRO-1).

### 2.8.10 CONSTRUCTION SCHEDULE

Construction is scheduled to begin in the Fall of 2018 and is estimated to be completed in approximately 36 months. All work is anticipated to be during daylight hours on a schedule to be determined prior to construction, unless nighttime work is required in certain sections for safety or other reasons. The schedule is preliminary and subject to change. In general, ground-disturbing activities (i.e., installation of hybrid pole butts, pouring TSP foundations, and removing old foundations) will occur in the spring and summer months, and structure replacement and reconductoring will occur in fall and winter.

## 2.9 OPERATION AND MAINTENANCE

No changes to existing operation and maintenance activities are anticipated with project implementation. Project completion will result in fewer breaks in the conductor from corrosion and brittleness, thereby improving reliability. Less breakage should result in fewer events or incidents that require emergency responses and inspections.

The existing power lines are inspected yearly, or as needed when driven by an event or incident, such as an emergency. A detailed ground or aerial inspection is required every year, alternating years. Project implementation will not change the routine annual inspection practices. As maintenance needs arise, repairs and preventive maintenance will continue to be fulfilled by the PG&E transmission line crew.

## 2.10 ANTICIPATED PERMITS AND APPROVALS

The CPUC is the lead state agency for the project under the California Environmental Quality Act (CEQA) because a Permit to Construct (PTC) is required in accordance with the CPUC's General Order No. 131-D Section III.B (GO 131-D). GO-131-D contains the permitting requirements for the construction of transmission and power line facilities. In addition to the PTC, PG&E will obtain all applicable permits for the project from federal, state, and local agencies. Table 2.10-1, Permits and Approvals that May be Required, provides the potential permits and approvals that may be required for project construction.

**Table 2.10-1: Permits and Approvals that May be Required**

| Permit/Authorization | Agency | Purpose |
|---|---|---|
| **Federal** | | |
| Section 7 Consultation (Biological Opinion) | U.S. Fish and Wildlife Service (consulting through the U.S. Army Corps of Engineers) | Potential impacts on federally listed species |
| Section 106 Consultation (National Historic Preservation Act) | State Historic Preservation Officer (consulting through the U.S. Army Corps of Engineers) | Consultation regarding impacts to cultural resources |
| Notification of Proposed Construction or Alteration | Federal Aviation Administration | Height increase of power line structures |
| Section 404 Permit (Clean Water Act) | U.S. Army Corp of Engineers | Potential impacts on wetlands |
| **State** | | |
| Permit to Construct | California Public Utilities Commission | Overall project approval, CEQA review, and issuance of a Permit to Construct |
| Section 2081 Incidental Take Permit or Consistency Determination 2080.1 | California Department of Fish and Wildlife | Coverage for potential take of state-listed species |
| Section 1602 Streambed Alteration Agreement | | Coverage for modification of a stream bed or bank |
| Encroachment Permits | California Department of Transportation | Activities related to the placement of encroachments within, under, or over state highway rights-of-way |
| National Pollutant Discharge Elimination System – General Construction Storm Water Permit (ministerial) | Central Valley Regional Water Quality Control Board | Stormwater discharges associated with construction activities disturbing more than one acre of land |
| Section 401 Water Quality Certification (Clean Water Act) | | Potential discharge into water body |
| Encroachment Permits | Central Valley Flood Protection Board | Activities related to the placement of encroachments near levees or designated waters |
| **Local** | | |
| Encroachment Permit (ministerial) | Butte, Sutter, and Yuba Counties | Work within county roads/road right-of-way or property, and railroads |

## 2.11 APPLICANT-PROPOSED MEASURES

PG&E proposes to implement the APMs listed in Table 2.11-1, Applicant-Proposed Measures, to avoid impacts, further reduce less-than-significant impacts, and minimize impacts to a less-than-significant level. The APMs are discussed in context with the environmental resources presented

in their respective resource category subsections of Chapter 3.0, Environmental Setting and Impact Assessment Summary.

**Table 2.11-1: Applicant-Proposed Measures**

| APM Number | Description |
|---|---|
| ***Agricultural and Forest Resources*** | |
| APM AG-1 | **Coordinate With Landowners Prior to Construction and During Restoration Efforts**<br>PG&E will coordinate with landowners prior to construction and during restoration efforts. Measures to be implemented may include, but are not limited to, the following:<br>· Provide written notice to landowners outlining construction activities and restoration efforts.<br>· In areas containing permanent crops (i.e., grape vines, orchard crops, etc.) that must be removed to gain access to pole sites for construction purposes, PG&E may provide compensation to the farmer and/or landowner in coordination with the landowner.<br>· Complete pre-project, post-project, and post-restoration site visit with landowners.<br>· Take photos of pre-project, post-project, and post-restoration conditions in the affected areas. |
| ***Air Quality*** | |
| APM AQ-1 | **Implement FRAQMD Standard Construction Mitigation Measures**<br>The project applicant shall implement the following standard construction mitigation measures (SMMs) required by the FRAQMD to help reduce construction-related emissions. Note that some FRAQMD SMMs are not listed below, as they are included in the APM identified below in Section 3.7, Greenhouse Gas Emissions.<br>(1) Implement the Fugitive Dust Control Plan. PG&E shall prepare and submit a Fugitive Dust Control Plan to the FRAQMD to help reduce construction-related fugitive dust emissions. The Fugitive Dust Control Plan must be submitted by PG&E to the FRAQMD prior to the commencement of construction activities.<br>(2) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, as practical.<br>(3) Implement a traffic plan to minimize traffic flow interference from construction activities.<br>The above measures will be applied across the entire project area. |
| APM AQ-2 | **Implement BCAQMD Construction Best Practices**<br>PG&E shall implement the following standard construction best practices recommended by the BCAQMD to help reduce construction-related emissions. Note that some BCAQMD construction best practices are not listed below, as they are identified in the APM GHG-1 described below in Section 3.7, Greenhouse Gas Emissions. |

| APM Number | Description |
|---|---|
| | (1) Diesel PM Exhaust from Construction Equipment<br>a. Avoid idling, staging, and queuing of diesel equipment within 1,000 feet of sensitive receptors.<br>b. Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.<br>c. To the extent feasible, construction truck trips shall be scheduled during non-peak hours to reduce peak hour emissions.<br>(2) Fugitive Dust: The following is a list of measures that may be required throughout the duration of the construction activities:<br>a. Reduce the amount of the disturbed area where possible.<br>b. Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site.<br>c. All dirt stockpile areas should be sprayed daily as needed, and covered.<br>d. Exposed ground areas that will be reworked at dates more than 1 month after initial grading should be sown with a fast-germinating noninvasive grass seed and watered until vegetation is established.<br>e. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders or jute netting.<br>f. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.<br>g. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.<br>h. Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and Air District for any questions or concerns about dust from the project.<br>The above measures will be applied across the entire project area. |
| APM AQ-3 | **Off-Site Mitigation Measures in FRAQMD**<br>PG&E shall enter into an off-site mitigation agreement with the FRAQMD to offset construction emissions in excess of 4.5 tons per year of $NO_X$ to levels below the FRAQMD's 4.5 tons per year significance threshold. The off-site mitigation rate shall be based on the current project cost effectiveness factor from the Carl Moyer Memorial Air Quality Standards Attainment Program. The current off-site mitigation rate is $18,030 per ton of $O_3$ precursor emissions ($NO_X$ or ROG) over the District threshold calculated over the length of the expected exceedance. |
| ***Biological Resources*** | |
| APM BIO-1 | **Conduct Worker Environmental Awareness Training Program**<br>A qualified biologist will develop an environmental awareness training program that is specific to the project. All on-site construction personnel will attend the training before they begin work on the project. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of project permits. Training will include information about the federal Endangered Species Act and the California Endangered Species Act, special-status species as defined in this chapter, and the consequences of noncompliance with these acts. |

| APM Number | Description |
|---|---|
| | Under this program, workers will be informed about the presence, life history, and habitat requirements of all special-status species that may be affected in the project area. Training also will include information on state and federal laws protecting nesting birds, wetlands, and other water resources.<br>An educational brochure will be produced for construction crews working on the project. The brochure will include color photos of sensitive species as well as a discussion of relevant APMs. In particular, construction personnel will be directed to stop work and contact the biological monitor if special-status species are observed. |
| APM BIO-2 | **Conduct Preconstruction Survey(s) For Special-Status Species and Sensitive Resource Areas**<br>A qualified biologist will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species. If a special-status species is encountered during the pre-construction survey(s), PG&E will be contacted immediately to determine the appropriate course of action. For state- or federally listed species, PG&E will contact the appropriate resource agency (CDFW and/or USFWS), as required. |
| APM BIO-3 | **Identification and Marking of Sensitive Resources**<br>Sensitive biological resource areas identified during pre-construction surveys in the project area will be clearly marked in the field or on project maps. Sensitive resource areas will include active bird nests within specified buffer zones (see APM BIO-11), special-status plants, special-status vegetation types, vernal pools and wetland boundaries in/or adjacent to work sites. Such areas will be avoided during construction to the extent practicable. |
| APM BIO-4 | **Biological Monitoring**<br>A qualified biologist will monitor ground-disturbing activities in and adjacent to areas identified in APM BIO-3 to ensure compliance with BMPs and APMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the qualified biologist. The monitor will have authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.<br>If a listed wildlife species is encountered during construction, project activities will cease in the area where the animal is found until the qualified biologist determines that the animal has moved out of harm's way, or with prior authorization from the USFWS and/or CDFW (if required), relocates the animal out of harm's way, and/or takes other appropriate steps to protect the animal. Work may resume once the qualified biologist has determined that construction activities will not harm any listed wildlife species. The PG&E biologist will be responsible for any necessary reporting to USFWS and/or CDFW. |
| APM BIO-5 | **Restore Habitat for Special-Status Plants Disturbed During Construction**<br>In the unlikely event special-status plant species cannot be avoided, PG&E will stockpile separately the upper 6 inches of topsoil during excavations of special-status plant species habitat. PG&E will use the stockpiled topsoil to restore the area after temporary construction has been completed. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. Restoration and reseeding methods using a California native seed mix will be used to restore the sites. |

| APM Number | Description |
|---|---|
| APM BIO-6 | **Avoid or Minimize Impacts on Habitat For Special-Status Vernal Pool Species**<br>PG&E will implement the following measures to reduce potential impacts on vernal pool species and habitat within the project area. These measures may be refined during the Section 7 consultation process conducted for the project with the USFWS.<br>· Where feasible, the project will avoid and minimize direct and indirect impacts on vernal pool species and their habitat.<br>· Where feasible, new structures will be located outside of suitable habitat features; and work areas and temporary overland access routes will avoid vernal pool habitats.<br>· Where feasible, ground-disturbing activities in and adjacent to vernal pools will be conducted during the dry season (generally May 1 to October 15).<br>· Any ground-disturbing activities taking place within 50 feet of suitable aquatic habitat for vernal pool species will be minimized by: limiting the duration of work, using rubber tire vehicles to reduce soil compaction, and restricting ground disturbance to well-defined, small work areas.<br>· If construction activities must occur on the ground during the wet season, PG&E will implement BMPs consistent with the Storm Water Pollution Prevention Plan (SWPPP) (see APM HYDRO-1), which may include silt fencing to minimize impacts on vernal pool habitat. |
| APM BIO-7 | **Compensate for Permanent Impacts on Habitat for Vernal Pool Species in Accordance with USFWS Biological Opinion (BO)**<br>As directed by the USFWS BO, PG&E will provide off-site compensation for permanent impacts on vernal pool species habitat at a minimum ratio of 1 acre preserved or created for each acre of direct impact by the project. PG&E will provide this compensatory amount of vernal pool habitat at an off-site location, which may include acquiring mitigation credits at a USFWS-approved conservation area that supports vernal pool fairy shrimp. This mitigation ratio may be refined during the Section 7 consultation process conducted for the project with the USFWS |
| APM BIO-8 | **Avoid, Minimize, or Compensate for Any Impacts on Valley Elderberry Longhorn Beetle (VELB)**<br>PG&E's Valley Elderberry Longhorn Beetle (VELB) Conservation Program allows PG&E to perform routine operations and maintenance activities and new construction, subject to certain terms and conditions as specified in the USFWS Biological Opinion (File 1-1-01-F-0114) (VELB BO). The VELB BO provides for 30 years of incidental take coverage and was issued on June 27, 2003. It defines reasonable and prudent measures required to avoid and minimize impacts on habitat for the federally listed VELB. PG&E will implement the surveying, avoidance, and any necessary compensation measures required by the VELB BO as authorized by USFWS. These measures may include: (1) surveying for and flagging all elderberry plants with one or more stems measuring 1 inch or more in diameter at ground level that are within 20 feet of work sites; (2) avoiding all such elderberry plants to the extent feasible; and (3) reporting unavoidable impacts on elderberry shrubs to USFWS for coverage under the Conservation Program's funding of VELB habitat acquisition, development, and protection. |
| APM BIO-9 | **Avoid and Minimize Impacts on Giant Garter Snake** (GGS)<br>PG&E will implement the following avoidance and minimization measures as may be refined during the permitting processes with USFWS and CDFW for the project. |

| APM Number | Description |
|---|---|
| | · To the fullest extent possible, PG&E will avoid construction activities within 200 feet of the banks of GGS aquatic habitat. Habitat disturbance areas and vegetation clearance will be confined to the minimal area necessary to facilitate construction activities.<br>· As feasible, construction activity within GGS aquatic and upland habitat in and around agricultural ditches, irrigation and drainage canals, rice fields, and marshes and sloughs, will be conducted within the active period for GGS (i.e., between May 1 and October 1). Depending on weather conditions and consultation with USFWS and CDFW, it may be possible to extend the construction period into mid- or late October.<br>· When construction work must occur during the GGS dormant period (between October 2 and April 30), additional protective measures will be implemented, which may include: having a biological monitor in sensitive habitat areas or installation of exclusion fencing to prevent giant garter snakes from establishing hibernacula in work areas.<br>· Prior to any construction within suitable GGS aquatic habitat, the habitat will be dewatered and must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling dewatered habitat.<br>· Pre-construction surveys in suitable GGS habitat will be conducted in accordance with APM BIO-2. The construction area will be resurveyed whenever there is a lapse in construction activity of two weeks or more.<br>· If a GGS is encountered within the construction work area, construction activities will be suspended in accordance with APM BIO-4. Based on the results of preconstruction surveys conducted under BIO APM-2, the qualified biologist will coordinate with the PG&E biologist to determine whether to install exclusion fencing to keep GGS out of the construction area.<br>· In accordance with BIO-12, conduct service and refueling procedures will be conducted in uplands at least 100 feet away from wetlands or waterways to minimize potential harm to aquatic species from water quality degradation. |
| APM BIO-10 | **Compensate for Loss of Giant Garter Snake Aquatic and Upland Habitat in Accordance with USFWS Biological Opinion**<br>For any GGS aquatic and upland habitat that cannot be avoided, PG&E will preserve a compensatory amount of GGS habitat, including acquiring mitigation credits at a USFWS-approved conservation area that supports GGS. PG&E will provide off-site compensation for permanent impacts on GGS habitat at a minimum ratio of 1 acre preserved for each acre of impacts, or as otherwise required by the USFWS and the CDFW during the permitting processes for the project. |
| APM BIO-11 | **Avoidance and Minimization of Impacts on Nesting Birds**<br>If work is scheduled during the nesting season (February 15 through August 31), nest detection surveys will be conducted within a standard buffer for individual species in accordance with the species-specific buffers set forth in Appendix D of the PEA and will occur within 15 days prior to the start of work activities at designated construction areas, staging areas, and landing zones to determine nesting status by a qualified wildlife biologist. Nest surveys will be accomplished by ground surveys and/or by helicopter and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 15 days between March and July. Access for ground surveys will be subject to property access permission. Helicopter flight restrictions for nest detection surveys may be in effect for densely populated residential areas, and will include observance of appropriate established buffers and |

| APM Number | Description |
|---|---|
| | avoidance of hovering in the vicinity of active nest sites.<br>If active nests containing eggs or young are found, the biologist will establish a species-specific nest buffer, as defined in Appendix D of the PEA. Where feasible, standard buffers will apply, although the biologist may increase or decrease the standard buffers in accordance with the factors set forth in Appendix D. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing nest buffers. The established buffers will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist. Active nests will be periodically monitored until the biologist has determined that the young have fledged or all construction is finished. Per the discretion of the biologist, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. Inactive nests may be removed in accordance with PG&E's approved avian permits. The biologist will have authority to order the cessation of nearby project activities if nesting pairs exhibit signs of disturbance. |
| APM BIO-12 | **Implement General Protection Measures for Wetlands and Other Waters**<br>PG&E will implement the following general measures, in addition to those outlined in Section 2.8.8, Best Management Practices, to minimize or avoid impacts on wetlands and other waters:<br>· Avoid wetlands and other waters as identified in BIO APM-3.<br>· Establish overland access routes to avoid wetlands and other waters to the extent feasible.<br>· Conduct all fueling of vehicles at least 100 feet from wetlands and other water bodies.<br>· Set staging areas back at least 50 feet from streams, creeks, or other water bodies. |
| APM BIO-13 | **Compensate for Permanent Impacts on Wetlands and Other Waters in Accordance with Project Permits**<br>PG&E will compensate for permanent impacts on wetlands with at least a 2:1 ratio of acre restored or created to acre filled. Final compensation ratios will be based on site-specific information and determined through coordination with the US Army Corps of Engineers and the Central Valley Regional Water Quality Control Board as part of the permitting processes for the project. |
| APM BIO-14 | **Restore Temporarily Impacted Wetlands and Other Waters**<br>All wetlands and other waters that are temporarily disturbed as a result of project activities will be restored upon completion of construction. |
| ***Cultural Resources*** | |
| APM-CR-1 | **Workers Environmental Awareness Training**<br>PG&E will provide environmental awareness training on archeological and paleontological resources protection. This training may be administered by the principal cultural resources specialist as a stand-alone training or included as part of the overall environmental awareness training as required by the project and will at minimum include: types of cultural resources or fossils that could occur at the project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource, human remain, or fossil discovery; and penalties for disturbing cultural or |

| APM Number | Description |
|---|---|
| | paleontological resources. |
| APM CR-2 | **Flag and Avoid Resources P-51-000150, P-58-001372, P-58001369, PL-Palermo-011H, Old Marysville Road**<br>A qualified archaeologist will flag sites P-51-000150, P-58-001372, PL-Palermo-011H, and the Old Marysville Road for avoidance. Sites will be marked with flagging tape, safety fencing, and/or sign designated it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment will not intrude on these sites during construction. For those sites that contain an existing access road within their site boundary or are an existing road (e.g., Old Marysville Road), the road will be used as-is (i.e., no grading, widening, or other substantial improvements), and signs or safety fencing will be established on either side of the road within the site's boundary to avoid impacts caused by construction vehicles.<br>If it is determined that the project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the NRHP/CRHR will be conducted. Should the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level will be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate in consultation with CPUC and interested parties. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures will be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate in consultation with the CPUC and interested parties. |
| APM CR-3 | **Manage Unanticipated Cultural Resources Discoveries Properly**<br>(a) *Buried Cultural Resources.*<br>If buried cultural resources are inadvertently discovered during site preparation or construction activities, work will stop in that area and within 100 feet of the find until a qualified cultural resources specialist/archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the cultural resources specialist/archaeologist's approval. PG&E will implement the cultural resources specialist/archaeologist's recommendations for treatment of discovered cultural resources.<br>(b) *Human Remains.*<br>In the unlikely event that human remains or suspected human remains are uncovered during pre-construction testing or during construction, all work within 100 feet of the discovery will be halted and redirected to another location. The find will be secured, and PG&E's cultural resources specialist or designated representative will be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the cultural resources specialist will determine whether the find is an archaeological deposit and whether paragraph (a) of this APM should apply. If the remains are human, the cultural resources specialist will immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the cultural resources |

| APM Number | Description |
|---|---|
| | specialist contact the NAHC within 24 hours. The NAHC, as required by PRC Section 5097.98, will determine and notify the Most Likely Descendant.<br>(c) *Paleontological Discoveries*.<br>If significant paleontological resources are discovered during construction activities, work will stop within 100 feet project cultural resource specialist will be contacted immediately. The project cultural resources specialist will work with the qualified paleontologist to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approval by the cultural resource specialist in coordination with the paleontologist.<br>In the event that significant paleontological resources are encountered during the project, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E, and CPUC. The paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency. |
| APM-CR-4 | **Paleo Monitoring**<br>Interval (spot check) monitoring for paleontological resources will be required for excavation activities larger than 3 feet in diameter and grading to depths greater than 2 feet that intersect undisturbed sediments in the Riverbank, Modesto, and Laguna formations. Monitoring is not required for shallow excavations into sediments previously disturbed by agricultural activities, development, or construction related to the existing Palermo–East Nicolaus 115 kV Transmission Line regardless of the mapped geologic unit sensitivity ranking because fossils found within such sediments would lack provenience data critical to scientific significance. In the unlikely event that a highly fossiliferous facies is encountered, monitoring will be conducted full time until excavations within that facies are complete. Conversely, monitoring may be reduced or suspended in the absence of encountering paleontologically sensitive sediments. Monitoring will be done by a qualified paleontological monitor. The paleontological monitor will document monitoring activities on monitoring logs. Monitoring logs and reports will include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or salvage fossils discovered. Photographs and other supplemental information will be included as necessary. |
| ***Geology and Soils*** | |
| APM GEO-1 | **Minimize Construction in Soft or Loose Soils**<br>Where soft or loose soils are encountered during project construction, several measures are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these measures may be implemented to eliminate impacts from soft or loose soils:<br>· Locating construction facilities and operations away from areas of soft and loose soil.<br>· Over-excavating soft or loose soils and replacing them with engineered backfill materials. |

| APM Number | Description |
|---|---|
| | • Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.<br>• Installing material, such as aggregate rock, steel plates, or timber mats, over access roads.<br>• Treating soft or loose soils in place with binding or cementing. |
| ***Greenhouse Gas Emissions*** | |
| APM GHG-1 | **Minimize Greenhouse Gas Emissions**<br>• Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.<br>• Minimize unnecessary construction vehicle idling time for on-road and off-road vehicles. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.<br>• Maintain construction equipment in proper working conditions in accordance with PG&E standards.<br>• Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program.<br>• Minimize welding and cutting by using compression of mechanical applications where practical and within standards.<br>• Encourage use of natural gas-powered vehicles for passenger cars and light-duty trucks where feasible and available.<br>• Encourage recycling construction waste where feasible. |
| ***Hazards and Hazardous Material*** | |
| APM HAZ-1 | **Hazardous-Substance Control and Emergency Response**<br>PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. |

| APM Number | Description |
|---|---|
| | If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on-site, as applicable.<br>Project construction will involve soil surface blading/leveling, excavation of up to several feet, and augering to a maximum depth of 35 feet in some areas. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.<br>All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:<br>· Proper disposal of potentially contaminated soils.<br>· Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.<br>· Emergency response and reporting procedures to address hazardous material spills.<br>· Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.<br>PG&E will complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information. |
| APM HAZ-2 | **Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE)**<br>The program will include the following components related to hazards and hazardous materials:<br>· PG&E Health, Safety, and Environmental expectations and management structure.<br>· Applicable regulations.<br>· Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.<br>· Summary of the primary workplace hazards to which workers may be exposed.<br>· Overview of the measures identified in APM HAZ-1.<br>· Overview of the controls identified in the Storm Water Pollution Prevention Plan (SWPPP under APM HYDRO-1. |
| APM HAZ-3 | **Fire Risk Management**<br>PG&E will follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Project personnel will be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads will have federally approved or State-approved spark arrestors. All off-road vehicles will be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens will be used when welding. In addition, during fire "red flag" conditions (as determined by CalFire), welding will |

| APM Number | Description |
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| | be curtailed. Every fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials will be removed from equipment parking and storage areas. |
| ***Hydrology and Water Quality*** | |
| APM HYDRO-1 | **Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP)**<br>PG&E will prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP will include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter counties. BMPs to be part of the project-specific SWPPP may include, but are not limited to, the following control measures.<br>· Implementing 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) to control erosion from disturbed areas.<br>· Protecting drainage facilities in downstream off-site areas from sediment using BMPs accepted to Butte, Sutter, and Yuba counties, and the Central Valley RWQCB.<br>· Protecting the quality of surface water from non-stormwater discharges such as equipment leaks, hazardous materials spills, and discharge of groundwater from dewatering operations.<br>· Restoring disturbed areas, after project construction is completed, unless otherwise requested by the landowner in agricultural land use areas.<br>Requirements of the SWPPP would be coordinated with the requirements of any Section 401 Water Quality Certification issued for the project under the Clean Water Act and/or Streambed Alteration Agreement issued under Fish and Game Code Section 1602, as applicable. |
| ***Noise*** | |
| APM NO-1 | **Employ Noise-Reducing Construction Practices during Temporary Construction Activities**<br>PG&E will employ standard noise-reducing construction practices such as the following:<br>· Ensure that all equipment is equipped with mufflers that meet or exceed factory new-equipment standards.<br>· Locate stationary equipment as far as practical from noise-sensitive receptors.<br>· Limit unnecessary engine idling.<br>· Limit all construction activity near sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime project construction be necessary because of planned clearance restrictions, affected residents will be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule. |

| APM Number | Description |
|---|---|
| ***Transportation*** | |
| APM TRA-1 | **Temporary Traffic Controls**<br>PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to state route crossings and the transport of oversized loads and certain materials, and will comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. PG&E will develop road and lane closure or width reduction or traffic diversion plans as required by the encroachment permits. Construction activities that are in or along or that cross local roadways will follow best management practices and local jurisdictional encroachment permit requirements—such as traffic controls in the form of signs, cones, and flaggers—to minimize impacts on traffic and transportation in the project area. |
| APM TRA-2 | **Air Transit Coordination**<br>PG&E will implement the following protocols related to helicopter use during construction and air traffic:<br>· PG&E will comply with all applicable Federal Aviation Administration (FAA) regulations regarding air traffic within 2 miles of the project alignment.<br>· PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction.<br>· Helicopter use and landing zones will be managed to minimize impacts on local residents. PG&E will submit to CPUC staff a Helicopter Use Plan, which will identify the anticipated landing zones, flight paths and general helicopter operation procedures. |
| APM TRA-3 | **Coordinate Road Closures with Emergency Service Providers**<br>At least 24 hours prior to implementing any road or lane closure, PG&E will coordinate with applicable emergency service providers in the project vicinity. PG&E will provide emergency service providers with information regarding the road or lanes to be closed; the anticipated date, time, and duration of closures; and a contact telephone number. |

# 3.0 ENVIRONMENTAL ASSESSMENT SUMMARY

## INTRODUCTION

The following sections (3.1 through 3.18) evaluate potential environmental impacts that may result from construction of PG&E's South of Palermo 115 kV Power Line Reinforcement Project (project). In accordance with the California Environmental Quality Act, the following resource areas were evaluated:

- 3.1 Aesthetics
- 3.2 Agricultural and Forest Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Geology and Soils
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Material
- 3.9 Hydrology and water Quality
- 3.10 Land Use and Planning
- 3.11 Mineral Resources
- 3.12 Noise
- 3.13 Population and Housing
- 3.14 Public Services
- 3.15 Recreation
- 3.16 Transportation and Traffic
- 3.17 Utilities

Sections 3.1 through 3.17 each include a description of the regulatory context, environmental setting, resource-specific Applicant-Proposed Measure(s) (APMs), and analysis and assessment of potential impacts that could result from implementing the project. There will be no material change from existing operation and maintenance activities as a result of the project, and the impact analysis is focused on construction activities that are required to reconductor approximately 59.5 miles of existing power lines within the Palermo-Rio Oso 115 kV transmission system, replace, remove, and modify existing structures as described in Chapter 2.0, Project Description.

Section 3.18, Mandatory Findings of Significance and Cumulative Impact Analysis, discuss mandatory findings of significance as well as potential cumulative impacts related to the project.

With incorporation of APMs, the project will result in less-than-significant impacts in all potential impact areas. APMs are discussed in their relevant sections and are summarized in Table 2.11-1: Applicant Proposed Measures in Chapter 2.0, Project Description.

# 3.1 AESTHETICS

## 3.1.1 INTRODUCTION

This section describes existing conditions and potential impacts on aesthetic resources as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts on aesthetic resources will be less than significant. No Applicant-Proposed Measure(s) (APMs) are proposed for the project. The project's potential effects on aesthetic resources were evaluated using the significance criteria set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The conclusions are summarized in Table 3.1-1 and discussed in more detail in Section 3.1.4.

**Table 3.1-1: CEQA Checklist for Aesthetics**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially degrade 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? | ☐ | ☐ | ☒ | ☐ |

## 3.1.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.1.2.1 Regulatory Background

#### *Federal*

No federal regulations related to aesthetic or visual resources are applicable to the project.

#### *State*

*California Scenic Highway Program*

California's Scenic Highway Program, a provision of the Streets and Highways Code, was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway Program includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives the designation from Caltrans (Caltrans 2009). A city or county may propose to add routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required for a highway to be officially designated.

There are no designated or eligible State Scenic Highways located within or near the project area.

### *California Department of Fish and Wildlife*

The project passes within 2 miles of the Feather River Wildlife Area managed by the California Department of Fish and Wildlife (CDFW). The CDFW's Strategic Plan (1995) outlines general goals to protect wildlife, including the maintenance and promotion of aesthetic value of wildlife areas. This plan does not list specific aesthetic policies that will affect or restrict the project.

## *Local*

Because the California Public Utilities Commission (CPUC) has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local standards or ordinances that describe the visual character of the project area for informational purposes and to assist with the CEQA review process. Six general plans and two specific plans in the project area identify scenic resources and contain goals and policies related to aesthetics.

### *Butte County*

#### *Butte County General Plan*

The Butte County General Plan identifies major land- and water-based features of local importance as visual resources to be protected, including Table Mountain, Sutter Buttes, the Sacramento River, and Lake Oroville. However, with the exception of the Sutter Buttes, none of these resources are located within viewing distance of the project. The plan also identifies County Scenic Highways and Scenic Highway Overlay Zones; however, none of the highways or zones are located near the project area, and the project will not be visible from these highways and zones.

**Conservation and Open Space Element**

The Conservation and Open Space Element includes the following goals and policies to protect visual quality in the county:

**Goal COS-17:** Maintain and enhance the quality of Butte County's scenic and visual resources.

**Policy COS-P17.1:** Views of Butte County's scenic resources, including water features, unique geologic features and wildlife habitat areas, shall be maintained.

**Goal COS-18:** Protect and enhance scenic areas adjacent to and visible from highways for enjoyment by residents and visitors.

**Policy COS-P18.3:** The County shall require utility companies to choose the least conspicuous locations for distribution lines, so as to avoid impacts to scenic corridors where there is reasonable choice.

## *Yuba County*

### *Yuba County General Plan*

The Yuba County General Plan identifies visual resources, including agricultural lands (particularly croplands), the Sutter Buttes, the Sierra Nevada foothills, rivers, and rice fields.

**Natural Resources Element**

The Natural Resources Element contains the following goal and policies related to protecting visual resources in Yuba County:

**Goal NR9:** Preservation of Yuba County's important visual resources.

**Policy NR9.2:** New plans and projects in western Yuba County should be designed to provide view corridors to the Sutter Buttes, where practical.

**Policy NR9.3:** Development in Rural Communities should be designed to preserve important scenic resources, landmarks, and icons that positively contribute to the rural character.

## *Sutter County*

### *Sutter County General Plan*

The Sutter County General Plan identifies visual resources, including agricultural lands (particularly croplands), the Sutter Buttes, the Sierra Nevada foothills, rivers, and rice fields.

**Land Use Element**

The Land Use Element contains the following policy related to protecting visual resources in Sutter County:

**Policy LU1.16: Views from Rural Roadways and Highways.** Prohibit new projects and activities that would obscure, detract from, or negatively impact the quality of views from the County's rural roadways and highways. Limit off-site advertising along County roadways and highways.

**Environmental Resources Element**

The Environmental Resources Element identifies natural open space areas as unique visual resources, including the Sutter Buttes; the Sutter Bypass; the Butte Sink; and the Sacramento, Feather, and Bear River corridors. This element includes the following goal and policy that relate to visual resources:

**Goal ER 7:** Preserve the visual and scenic resources that define Sutter County.

**Policy ER 7.1: Scenic Resources.** Protect views of Sutter County's unique scenic resources including the Sutter Buttes, wildlife and habitat areas, the Sacramento, Feather, and Bear Rivers, and other significant resources.

### *East Linda Specific Plan*

The project alignment crosses through the East Linda specific planning area. The East Linda Specific Plan does not contain goals and policies related to visual quality, but it recognizes open spaces, including power line easements (e.g., the project alignment), as visual amenities.

### *Plumas Lake Specific Plan*

The project alignment is located along the eastern boundary of the Plumas Lake specific planning area and is adjacent to designated open space, among other uses. The Plumas Lake Specific Plan acknowledges that open space is a visual amenity. The plan specifically addresses an existing PG&E substation and a transmission line to the north of the planning area. However, the Plumas Lake Specific Plan does not provide goals and policies related to the visual quality of the project.

### *City of Marysville*

#### *City of Marysville General Plan*

The City of Marysville General Plan contains provisions in its Circulation and Scenic Highways Element and in Section V, Implementation, regarding visual resources and the siting of utility lines. The only existing scenic route delineated by the City of Marysville General Plan is along State Route (SR) 70 where it crosses the Yuba River entering Marysville from the southeast. However, this crossing is approximately 2.4 miles from the project, and will not be visible at that distance. No specific policies guide development along this scenic route or make provisions for designating additional scenic highways.

### *City of Oroville*

#### *City of Oroville General Plan*

The City of Oroville General Plan identifies Table Mountain, the Sierra Nevada foothills, and preserves within the Feather River Nature Center and Native Plant Park (also known as "Meditation Park") as scenic resources.

> **Open Space, Natural Resources, and Conservation Element**
>
> The Open Space, Natural Resources, and Conservation Element addresses scenic resources within the city limits and contains the following goal and policies:
>
> **Goal OPS-5:** Maintain and enhance the quality of Oroville's scenic and visual resources.
>
> > **Policy P5.1:** Maintain the appearance of Oroville, as seen from the freeway, as a city to be visited, enjoyed and admired.
> >
> > **Policy P5.3:** Maintain the scenic view of the Feather River and Table Mountain.

**Public Facilities and Services Element**

The Public Facilities and Services Element addresses the provision of electrical services to the community and includes the following goal and policy:

**Goal PUB-10:** Provide telecommunications and energy utilities in ways that are safe, environmentally acceptable, and financially sound.

**Policy P10.1:** Ensure that utilities, including electricity, natural gas, telecommunications, and cable television, are available or can be provided to serve the projected population within the City in a manner which is fiscally and environmentally responsible, aesthetically acceptable, and safe.

*Yuba City*

*Yuba City General Plan*

The Yuba City General Plan recognizes the open spaces within and around Yuba City as providing scenic quality.

**Environmental Conservation Element**

The Environmental Conservation Element contains the following guiding policy:

**Policy 8.1-G-3:** Preserve and enhance the visual and scenic resources of the Planning Area.

### 3.1.2.2 Methodology

The visual analysis is based on review of technical data, including project maps and drawings provided by PG&E, aerial and ground-level photographs of the project area, local planning documents, and computer-generated visual simulations. Field observations were conducted in November 2015 to document existing visual conditions in the project area and to identify potentially affected sensitive viewing locations.

This visual study employs assessment methods based, in part, on the U.S. Department of Transportation, Federal Highway Administration's (FHWA's) guidance and other accepted visual analysis techniques as summarized by Smardon et al. This study also addresses the CEQA Guidelines for visual impact analysis. Included are systematic documentation of the visual setting and an evaluation of visual changes associated with the project. To convey a sense of existing visual conditions, a set of photographs are included that show representative public views of the project area.

Consistent with FHWA methods, this impact analysis describes change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of representative views from which the project will be visible to the public. To document the visual change that will occur, visual simulations, presented as before-and-after images, show the project from key representative public viewpoints. Section 3.1.4.2 contains a description of the technical methods employed to produce the Proponent's Environmental Assessment (PEA) visual simulations. The visual impact assessment is based on evaluation of the changes to the existing visual resources that will result from construction and operation of the

project. These changes were assessed, in part, by evaluating the after views provided by the computer-generated visual simulations and comparing them to the existing visual environment.

## 3.1.3 ENVIRONMENTAL SETTING

Figure 3.1-1 is a map that shows the project location within a regional and local landscape context. The project area is in Butte, Yuba, and Sutter Counties in the northern Sacramento Valley. The project, which includes reconductoring existing power lines and replacing or modifying existing structures, runs approximately 59.5 miles from Palermo Substation at the eastern edge of the unincorporated community of Palermo in southern Butte County, south to Rio Oso Substation in Sutter County. The project alignment comprises the South of Palermo Line and the following four sub line segments:

- Palermo Sub Line Segment, extending east to Palermo Substation
- Pease Sub Line Segment, extending west to Pease Substation north of Yuba City
- Bogue Sub Line Segment, extending west to Bogue Substation south of Yuba City
- Rio Oso Sub Line Segment Loop, extending east to Rio Oso Substation

The existing project alignment is within largely unincorporated rural and agricultural areas, and traverses several small communities, including Palermo, Honcut, Tierra Buena, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus and the cities of Oroville, Marysville, and Yuba City. Agricultural fields and the Feather, Yuba, and Bear River corridors provide open space.

### 3.1.3.1 Regional and Local Landscape Setting

Situated in the northern Sacramento Valley, the project route follows existing, parallel power lines on generally flat terrain associated with the alluvial fans of rivers draining from the Sierra Nevada range to the east. This visual setting is characterized primarily by grazing lands, agricultural fields, rice fields, and orchards. Elevations in the project area range from 30 to 400 feet above mean sea level (amsl), with elevations gradually dropping as the route moves south. The combination of relatively flat topography and agricultural fields contributes to an open landscape character. The foothills of the Sierra Nevada to the east and the Sutter Buttes to the west can be seen from many locations along the route. Vegetation along the route is defined by agricultural crops, orchards, grasslands, and riparian corridors.

The project's rural landscape setting is punctuated by urbanized areas, such as the cities of Marysville, Oroville, and Yuba City, and the unincorporated communities of Palermo, Linda, Olivehurst, and Plumas Lake. The project route also passes alongside the western edge of Yuba College. Scattered rural residences and associated farm buildings are also found along the route.

The route crosses several rivers and creeks, including the following:

- Wyandotte Creek in Butte County
- North and South Honcut Creeks on the border of Yuba and Butte Counties
- Jack Slough, the Yuba River, Dry Creek, and the Feather River (twice) in Yuba County
- Bear River in Sutter County

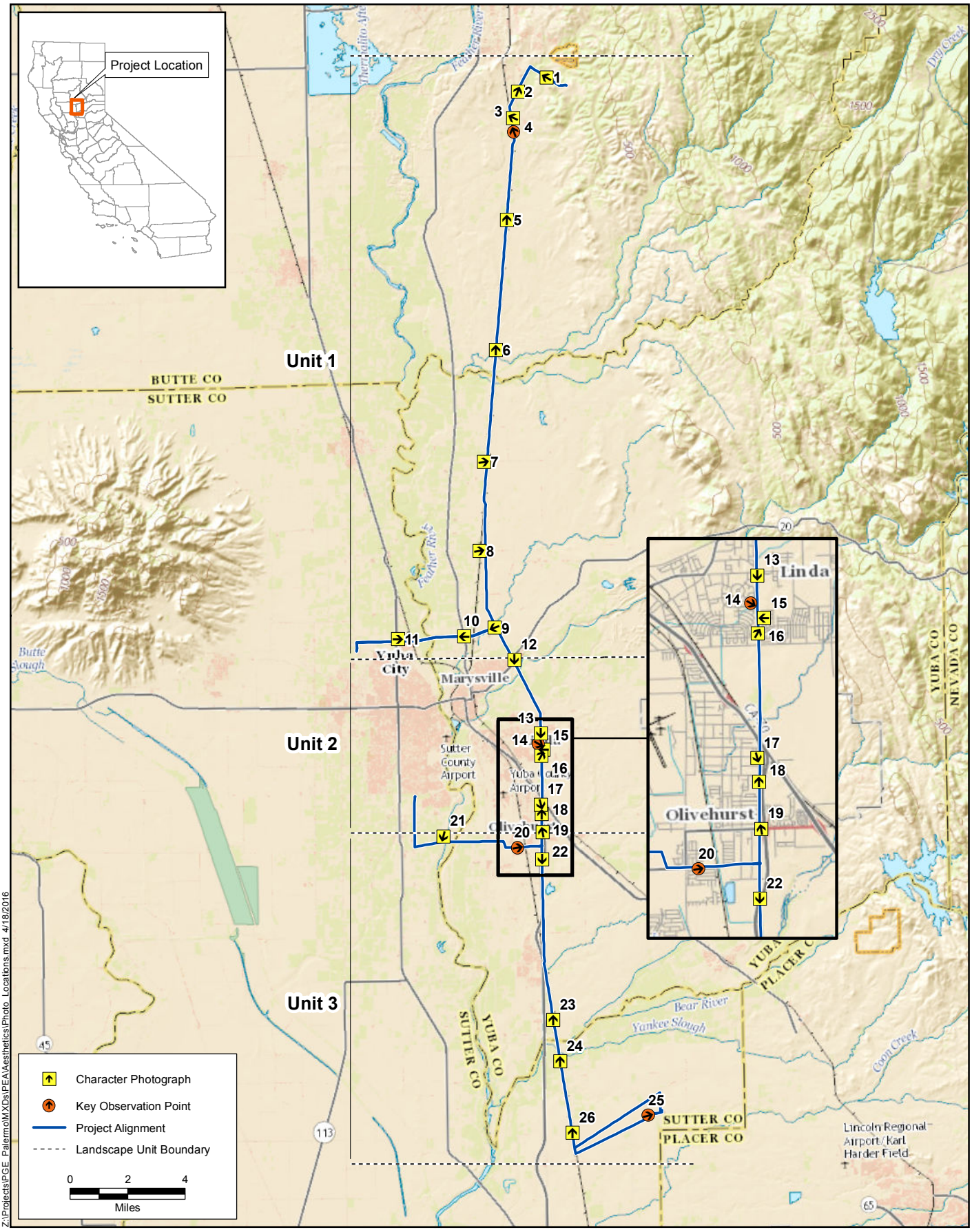



**Figure 3.1-1**
Landscape Units and Photograph Viewpoint Locations
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 1



Photograph 2

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photographs 1 and 2)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 3



Photograph 4

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photographs 3 and 4)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 5



Photograph 6

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photographs 5 and 6)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 7



Photograph 8

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photographs 7 and 8)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 9



Photograph 10

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photographs 9 and 10)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 11

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-2**
**Landscape Unit 1 Photographs (Photograph 11)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 12



Photograph 13

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-3**
**Landscape Unit 2 Photographs (Photographs 12 and 13)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 14



Photograph 15

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-3**
**Landscape Unit 2 Photographs (Photographs 14 and 15)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 16



Photograph 17

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-3**
**Landscape Unit 2 Photographs (Photographs 16 and 17)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 18




Photograph 19

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-3**
**Landscape Unit 2 Photographs (Photographs 18 and 19)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 20



Photograph 21

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-4**
**Landscape Unit 3 Photographs (Photographs 20 and 21)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 22



Photograph 23

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-4**
**Landscape Unit 3 Photographs (Photographs 22 and 23)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 24



Photograph 25

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-4**
**Landscape Unit 3 Photographs (Photographs 24 and 25)**
South of Palermo 115 kV Power Line Reinforcement Project



Photograph 26

00441.15 Palermo South 1-PEA (04-01-2016) TAG

**Figure 3.1-4**
**Landscape Unit 3 Photographs (Photograph 26)**
South of Palermo 115 kV Power Line Reinforcement Project

The project also crosses numerous major roadways, including SR 20, 65, 70, and 99, as well as many smaller rural roads. The project is located about two miles from the Feather River Wildlife Area, an approximately 2,800-acre restricted area managed by the CDFW. The majority of the project alignment runs parallel to existing power lines, including the Palermo-East Nicolaus line running north to south.

#### 3.1.3.2 Project Viewshed and Representative Views

A project viewshed is defined as the general area from which a project is visible. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be broken down into foreground, middleground, and background zones. The foreground is defined as the zone within 0.25 to 0.5 mile of the viewer; the middleground is defined as the zone that extends from the foreground to a maximum of 3 to 5 miles from the viewer; and the background zone extends beyond the middleground (Smardon et al. 1986).

Viewing distance is a key factor that affects the potential degree of project visibility. Visual details generally become apparent to the viewer when they are observed in the foreground, at a distance of 0.25 to 0.5 mile or less. The primary focus of the visual analysis in this PEA is the foreground viewshed zone (i.e., where visual details are most apparent) and up to 1 mile from the project area; beyond this, changes will be less noticeable or not noticeable at all.

#### 3.1.3.3 Landscape Units and Representative Views

A set of three distinct sub-areas or landscape units has been identified for purposes of documenting and describing the project's foreground viewshed. Each identified landscape unit is distinguished by topographic, vegetation, and/or development patterns. Figure 3.1-1 delineates the project route, the geographic locations of the three landscape units, the Key Observation Points (KOPs) where representative photographs have been taken, and those locations for which visual simulations were also produced.

Landscape Unit 1 encompasses Palermo Substation (the route's northern terminus) and the route south to the northern boundary of the city of Marysville in Yuba County. Landscape Unit 2 covers the route as it passes through Marysville and the unincorporated communities of Linda and Olivehurst until it reaches McGowan Parkway near SR 70 in Olivehurst. Landscape Unit 3 runs from McGowan Parkway to the route's southern terminus at the eastern end of the Rio Oso Sub Line Segment Loop in Sutter County. These landscape units are discussed further in the following subsections. Visual character photographs from representative views in each landscape unit are provided in Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4.

##### *Landscape Unit 1: Palermo Substation to SR 20 (Photographs 1 through 11, Figure 3.1-2)*

Landscape Unit 1 runs approximately 33 miles from Palermo Substation to the northern boundary of Marysville at SR 20. This unit includes the Palermo Sub Line Segment, where the project is one of three existing, parallel, double-circuit power lines; and the Pease Sub Line Segment, where two lines run on a single set of towers. The northern portion of the main South of Palermo Line is also located in Landscape Unit 1 and runs parallel to an additional existing power line. Although the route crosses through the southern limits of the city of Oroville, the northern limits of Marysville, and a small portion of Yuba City, the focus of this landscape unit

is the unincorporated community of Palermo and the farmland of 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 Wyandotte and Honcut Creeks. Elevations along the northern portion of the route reach approximately 400 feet above mean sea level (amsl); the center of the unincorporated community of Palermo lies at approximately 160 feet amsl; and farmlands farther south vary between 60 and 150 feet amsl. Other than the unincorporated community of Palermo, the area is sparsely populated. Views of the existing power lines are available from a small number of residences and agricultural buildings.

In Landscape Unit 1, the existing power lines cross various local roads, including Upper Palermo Road, East Palermo Street, North and South Villa Avenues, Cox Lane, Central House Road, Middle and Lower Honcut Roads, Ramirez Road, and Woodruff Lane. These rural roads connect residents of the area to SR 70 and the unincorporated communities of Palermo, Honcut, Wyandotte, and Gridley. Views from rural residential properties and roadways are shown in Photographs 1 through 8 in Figure 3.1-2. The route also runs parallel to several roadways, including Lincoln Boulevard (shown in Photograph 2) and Railroad Avenue (shown in Photograph 3). Views from these roadways and from nearby residences are closer to the project.

Distant views of the existing, parallel power lines are also available from the Palermo-Honcut Highway and from SR 70. The Palermo-Honcut Highway runs parallel to the project route and approximately 0.9 mile to the east, and SR 70 runs parallel to the route between 1 and 3 miles to the west.

On the Pease Sub Line Segment (shown in Photographs 9 through 11), the existing, parallel power lines (located on a single set of towers) follow the existing power line alignment and cross SR 70, where the project extends to the west. Photograph 10 shows the project in the foreground in this area. The Sutter Buttes, approximately 4.2 miles to the west of Pease Substation, can be seen in the distance in Photograph 10, and they provide a distinctive landscape backdrop feature in western-facing views from some locations within this landscape unit. Yuba College's Sutter County Center is also within Landscape Unit 1 and on the Pease Sub Line Segment. Views of the existing power lines from this campus and the adjacent SR 99 are more distant, as shown in Photograph 11.

#### *Landscape Unit 2: SR 20 to McGowan Parkway (Photographs 12 through 19, Figure 3.1-3)*

Landscape Unit 2 runs approximately 7.7 miles from SR 20 to McGowan Parkway in the unincorporated community of Olivehurst. Landscape Unit 2 contains the existing power lines as part of the landscape and the areas with the most population in the project corridor, passing through the unincorporated communities of Linda and Olivehurst, as well as the city limits of Marysville, which is the Yuba County seat. This landscape unit also includes Yuba City. Elevations in this area are fairly constant, ranging from 55 to 75 feet above mean sea level. Viewers in this landscape unit include motorists, park users, residents in moderate- and lower-density residential developments, and school attendees and staff.

SR 20 runs east and west and connects smaller foothill communities with Marysville and Yuba City. The project route crosses SR 20 in the eastern portion of Marysville. Views from SR 20

(shown in Photograph 12) encompass low-lying farmlands and distant views of the Sierra Nevada foothills and the Sutter Buttes.

Where the existing power lines briefly cross through Marysville, views of the power lines are screened in most areas by a levee that separates the residential areas from farmland to the northeast. The route crosses the Yuba River and orchards before entering the unincorporated community of Linda, which is a suburb of Marysville. On the northern edge of Linda, the power lines pass through the Peach Tree Golf & Country Club. Near Linda, the route crosses a number of local and regional roadways, including Hammonton Smartville Road, North Beale Road (an entry road for Beale Air Force Base), and Erle Road. For more than 1.5 miles, the existing power lines traverse the unincorporated community of Linda and travel adjacent to Yuba College, a view from which is shown in Photograph 13. Photographs 14 through 16 show views from recently built residential developments in Linda.

SR 65 and 70 are major north-south routes that connect the cities of Roseville and Sacramento with Marysville and Yuba City. After the two existing power lines cross SR 65, they continue parallel to and within 0.25 mile of SR 70. The power lines then enter the unincorporated community of Olivehurst, where they travel parallel to Powerline Road. In this area, the project route is adjacent to the Olivehurst Community Park, which features ball fields, a pool, and other recreational facilities. A view of the existing, parallel power lines from the park is shown in Photograph 17. Photograph 18 shows a view from Yuba Gardens Intermediate School on Powerline Road near 11th Avenue. Not far to the south, the power lines also pass within 100 feet of residential areas along Powerline Road. Photograph 19 shows the view from McGowan Road, which spans two moderately dense single-family residential neighborhoods on either side of the existing power lines.

#### *Landscape Unit 3: McGowan Parkway to Rio Oso Substation (Photographs 20 through 26, Figure 3.1-4)*

Landscape Unit 3 contains approximately 24.3 miles of the project, from McGowan Parkway to Rio Oso Substation, and includes the majority of the existing Bogue Sub Line Segment, which extends west from the South of Palermo Line to an area just south of Yuba City. Along the South of Palermo Line and the Bogue Sub Line Segment, the route includes existing parallel power lines, which are part of the visual landscape. Although the existing parallel power lines pass through newer residential developments in the northern portion, this unit's landscape is generally characterized by sparsely populated agricultural areas (grasslands and rice fields). Railroad tracks, rural roads, and levees punctuate the landscape setting. The route crosses several waterways, including the Bear River at the border of Yuba and Sutter Counties, and Yankee Slough. Elevations in this relatively flat landscape range between 40 and 60 feet above mean sea level.

The northern part of Landscape Unit 3 contains the Bogue Sub Line Segment, which extends west from the South of Palermo Line. The area along the Bogue Sub Line Segment is characterized by large single-family residential subdivisions (shown in Photograph 20), interspersed with agricultural fields. Farther to the west, the area surrounding the existing power lines becomes predominantly agricultural, as shown in Photograph 21, which shows the view along Garden Highway.

For most of this unit, the existing power lines run parallel to and at some points adjacent to SR 70. Approximately 1 mile south of McGowan Parkway, the route crosses SR 70, as shown in Photograph 22. South of Plumas Arboga Road, the project route passes near several newer residential developments along SR 70 in the Plumas Lake area. Photograph 23 shows a typical view of the surrounding rural/agricultural area from one of these developments. In this area, the two existing power lines cross and then run parallel to the Western Pacific Railroad tracks. The parallel power lines then turn northeast just north of Nicolaus Avenue, where they loop into Rio Oso Substation and back to the South of Palermo Line (shown in Photographs 24 and 26). Rio Oso Substation on Hicks Road is the project's southern terminus and is situated in an area of farmland in unincorporated Sutter County. The substation is visible in the background of Photograph 25.

#### 3.1.3.4 Potentially Affected Viewers

Accepted visual assessment methods, including those adopted by the FHWA, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity—one of the criteria for evaluating visual impact significance—can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. According to the FHWA's *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015), research on the subject suggests that certain activities (e.g., outdoor recreational activities) tend to heighten viewer awareness of visual and scenic resources, while others (e.g., driving) tend to be distracting. The project viewshed includes several types of concerned viewer groups, including motorists, residents, schools, and occasional trail users.

Motorists, the largest viewer group, are people traveling on the highways and local roads throughout the project area. The project route parallels SR 70 for most of the alignment, and crosses SR 20, 65, 99, and 70. With posted speed limits of 65 miles per hour (mph), the view duration for motorists is estimated to be 10 minutes or less. Motorists on local roads will travel at lower speeds (e.g., 35 mph), and may experience slightly longer views. The viewer sensitivity of motorists is considered low to moderate.

The second viewer group consists of residents with views of the project. These are people living in the small cities and communities the project crosses, including Marysville, Oroville, and Yuba City, and the unincorporated communities of Palermo, Linda, Olivehurst, and Plumas Lake. Because of the numbers of viewers, the frequency of exposure, and the longer duration of views, the sensitivity of this viewer group is considered moderate to high.

In addition, park users, attendees and teachers at school facilities, and pedestrians and cyclists will have views of the project. The sensitivity of these viewer groups is considered moderate to high.

### 3.1.4 Applicant-Proposed Measures and Potential Impacts

The following sections describe significance criteria for aesthetic impacts derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts (if necessary), and assess potential project-related construction and operational aesthetic impacts.

#### 3.1.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on aesthetics was evaluated for each of the criteria listed in Table 3.1-1, as discussed in Section 3.1.4.3.

#### 3.1.4.2 Visual Simulation Methodology

The analysis of the potential aesthetic effects associated with the project is based on a review of the following:

- Technical data, including maps and drawings of the project
- Aerial and ground-level photographs of the project area
- Field reconnaissance
- Local planning documents
- Computer-generated visual simulations that show the anticipated final appearance of the project from selected viewpoints

The following analysis addresses the CEQA Guidelines for visual impact analysis. Central to this assessment is an evaluation of representative public views from which the project will be visible. Rendering techniques were used to produce four visual simulations from four KOPs depicting the project, which are shown on Figure 3.1-1. The simulations illustrate the location, scale, and appearance of the project, as seen from representative public viewpoints.

Photographs for the simulations were taken in November 2015 using a full-frame digital single-lens reflex camera. The simulation photographs were taken with a 50-millimeter lens, which represents a horizontal viewing angle of 40 degrees. For each simulation viewpoint, the viewer location was assumed at an eye level of 5 feet. The visual simulations were produced using digital versions of each site photograph, geographic information system tools, and photo-editing software to create a computer rendering. Each simulation was then compared to the field reconnaissance to estimate the degree of visual contrast the project will create from the viewpoint. The visual simulations are presented as a set of before-and-after images. The simulations portray the appearance of the project, and are included as Figure 3.1-5A through Figure 3.1-8B, with the "A" photographs showing existing conditions, and the "B" photographs providing the visual simulations.

#### 3.1.4.3 Applicant-Proposed Measures

No APMs are included because project construction, operation, and maintenance will have less-than-significant impacts on aesthetics resources.

#### 3.1.4.4 Potential Impacts

Project impacts related to aesthetics and visual resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system.. The operations and maintenance activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts on visual resources will occur due to operation of the project.

As described below, replacing lattice steel towers with tubular steel poles (TSPs), hybrid poles, or lattice steel poles (LSPs), which is the case in many parts of the project alignment, generally presents an improvement in the project viewshed. While the addition of top cage extensions may incrementally affect views from certain locations, most changes will not be readily noticeable and significant adverse impacts are not anticipated.

### *Landscape Unit 1: Palermo Substation to SR 20*

Visual change in the rural agricultural and residential areas of Landscape Unit 1 is represented in Figure 3.1-5B, which portrays the replacement of lattice steel towers with hybrid poles. When compared with the existing view in Figure 3.1-5A, the replacement poles are approximately 6 to 16 feet taller than the existing towers, and the solid steel presents stronger visual breaks in the viewshed than the lattice steel towers. However, the lattice steel tower in the foreground of the visual simulation is equipped with eight insulators that provide a strong visual contrast against the backdrop of the sky. These insulators, along with the increased width of the tower, present a greater impact than the hybrid pole in the simulation, which is equipped with only three insulators. The simulated hybrid poles are also similar to the poles used on the adjacent line (i.e., the Palermo–East Nicolaus 115 kV Transmission Line), which creates a more consistent visual pattern in the landscape and results in an incremental change.

### *Landscape Unit 2: SR 20 to McGowan Parkway*

Potential visual impacts in Landscape Unit 2 are presented in the visual simulation depicted in Figure 3.1-6B, which shows the project as viewed from a suburban residential development in the unincorporated community of Linda. Residents and visitors within this development will view the project in the distance beyond the houses that line the streets. In this simulation, the existing tower is replaced with a LSP. While the replacement structure is approximately 11 feet taller, the lower half of the structure is thinner and matches the structure on the adjacent power line. In addition, the three single insulators on the replacement structure present less contrast against the sky than the six insulators on the existing structure. The LSP is consistent with the existing structure on the adjacent power line, presenting a more consistent visual pattern as a result of the project.

### *Landscape Unit 3: McGowan Parkway to Rio Oso Substation*

Figure 3.1-7B also represents a residential view, with the project shown in the background of a newer residential development. In this case, three existing towers of the project are replaced with hybrid poles. The pole in the forefront is approximately 9 feet taller than the tower it replaces, and all of the poles are thinner than the existing towers. Because the structure itself is more streamlined than the tower it is replacing, the result is less visual contrast against the sky.



**Figure 3.1-5A: Key Observation Point #4**

Existing view looking north-northwest on South Villa Avenue

South of Palermo 115 kV Power Line Reinforcement Project

Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations



Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

**Figure 3.1-5B: Key Observation Point #4**

Visual Simulation of the Proposed Project

South of Palermo 115 kV Power Line Reinforcement Project




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INSIGNIA ENVIRONMENTAL

Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

**Figure 3.1-6A: Key Observation Point #14**

Existing view looking southeast on Wildwood Drive

South of Palermo 115 kV Power Line Reinforcement Project




ICF INTERNATIONAL

INSIGNIA ENVIRONMENTAL

Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

**Figure 3.1-6B: Key Observation Point #14**
Visual Simulation of the Proposed Project
South of Palermo 115 kV Power Line Reinforcement Project



**Figure 3.1-7A: Key Observation Point #20**
Existing view looking east on Chateau Drive
South of Palermo 115 kV Power Line Reinforcement Project

Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations



Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

**Figure 3.1-7B: Key Observation Point #20**
Visual Simulation of the Proposed Project
South of Palermo 115 kV Power Line Reinforcement Project




Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

**Figure 3.1-8A: Key Observation Point #25**

Existing view looking east-northeast on Chateau Drive

South of Palermo 115 kV Power Line Reinforcement Project




**Figure 3.1-8B: Key Observation Point #25**
Visual Simulation of the Proposed Project
South of Palermo 115 kV Power Line Reinforcement Project

Figure 3.1-1: Landscape Units and Photograph Viewpoint Locations depicts the viewpoint locations

For these reasons, the replacement poles shown in the simulation will have less of an impact on visual resources than do the existing structures.

Figure 3.1-8B shows the project along the Rio Oso Sub Line Segment Loop, looking toward Rio Oso Substation. The western tower in the foreground is modified to incorporate a top cage extension. Visual changes in this simulation virtually imperceptible due to the incremental change in tower height, the number of existing towers and lines in the background, and the presence of the existing substation.

**a) Would the project have a substantial adverse effect on a scenic vista? *Less than Significant***

CEQA requires the project be evaluated as to whether its implementation has a substantial, adverse effect on a scenic vista. For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. There are no recognized scenic vistas within the project viewshed; therefore, there will be no substantial adverse effect from the project on a scenic vista. Although several local jurisdictions have general plans identifying views toward the Sutter Buttes and the open space and agricultural areas that surround urbanized areas as scenic qualities to be preserved, there will be a less-than-significant impact on scenic views because the project is modifying existing power lines and the visual changes associated with the project result in improvements to the viewshed.

**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***

As documented in Section 3.1.2.1, Regulatory Background, there are no designated State Scenic Highways within the project viewshed; therefore, the project will not substantially damage scenic resources within a State Scenic Highway. In addition, the project will not affect views from any county or local scenic roadways. Therefore, there will be no impact.

**c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings? *Less than Significant***

The project will not substantially degrade the existing visual character or quality of the site and its surroundings. During construction, visual impacts will include the presence of workers, temporary structures, construction equipment, and vehicles associated with replacing or modifying the structures and reconductoring the power line. Although portions of the project are located adjacent to public roadways and residential developments, other portions of the project will not be particularly visible to the public. Construction is expected to take place over the course of approximately 36 months, but considerably less time will be required at any one location along the project route. Any visual impacts associated with construction activities will be temporary and of short duration.

The project includes replacing structures and modifying existing lattice steel structures and reconductoring along approximately 59.5 miles of existing power lines. The project will be visible from local roadways, state highways, public facilities, and residential neighborhoods. Visual changes associated with the project will be viewed for short durations by motorists in the area, for longer durations by those attending schools, parks, and other institutions in the area, and

for even longer durations by residents in the area. As shown in the visual simulations in Figure 3.1-5B through Figure 3.1-8B, existing lattice steel towers will be replaced with less intrusive TSPs, hybrid poles, or LSPs. The visual changes associated with the project are minor and result in an improved viewshed in most cases. As previously discussed and shown in Figure 3.1-8A, although most replacement structures will be taller than the existing structures, the TSPs and LSPs are thinner and provide better visual consistency with the structures on the existing adjacent line. Because this project modifies existing power lines, and because the visual changes are minor and generally improve the existing visual landscape, the project will not substantially degrade the existing visual character or quality of the landscape setting. Therefore, impacts will be less than significant.

**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***

***Glare***

Glare exists when a high degree of contrast between bright and dark areas in a viewshed make it difficult for the human eye to adjust to differences in brightness. At high levels, glare can make it difficult to see (e.g., when driving westward at sunset). As shown in Figure 3.1-5B and Figure 3.1-7B, the replacement of lattice steel towers with TSPs and/or hybrid poles can result in a negligible increase in glare associated with the solid steel of the hybrid poles. The glare is minor, and the steel will be galvanized to reduce glare and will dull further within a few years of installation. Therefore, the impact will be less than significant.

***Nighttime Lighting***

Although not anticipated, if construction work must be completed at night, portable temporary lighting will be used to illuminate the immediate work area and will be directed down and away from residences, motorists, and other sensitive viewers. Current project plans call for construction activities to take place during daylight hours and for nighttime construction activities to be avoided, if possible. As such, any nighttime construction would be very limited in duration. Once constructed, the project will not add any additional lighting. Therefore, any impacts will be less than significant.

## 3.1.5 REFERENCES

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# 3.2 AGRICULTURAL AND FOREST RESOURCES

## 3.2.1 INTRODUCTION

This section describes existing conditions and potential impacts on agricultural and forest resources as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts on agricultural resources will be less than significant, and these less-than-significant impacts would be further reduced with the incorporation an Applicant-Proposed Measure (APM). The project's potential effects on agricultural and forest resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.2-1 and discussed in more detail in Section 3.2.4.

**Table 3.2-1: CEQA Checklist for Agricultural and Forest Resources**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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 land? | ☐ | ☐ | ☒ | ☐ |
| 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 by 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 forest land or conversion of forest land to non-forest uses? | ☐ | ☐ | ☐ | ☒ |
| e) Involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

## 3.2.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.2.2.1 Regulatory Background

#### *Federal*

No federal regulations related to agricultural or forest resources are applicable to the project.

### State

#### Williamson Act

The California Land Conservation Act, better known as the Williamson Act (California Government Code Section 51200 et seq.), is designed to preserve agricultural and open-space land. It establishes a program of private landowner contracts that voluntarily restrict land to agricultural and open-space uses. In return, Williamson Act parcels receive a lower property tax rate consistent with their actual use instead of their market rate value. Lands under contract may also support uses that are "compatible with the agricultural, recreational, or open-space use of [the] land" subject to the contract (California Government Code Section 51201[e]). Under Government Code Section 51238, electric facilities are determined to be a compatible use.

#### Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC), under the Division of Land Resource Protection, has established the Farmland Mapping and Monitoring Program (FMMP) to monitor the conversion of the state's farmland to and from agricultural use. The FMMP maps agriculturally viable lands and designates specific categories, including Prime, Unique, or Farmland of Statewide Importance.

### Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local zoning in the project area for agricultural use or forest land, and is provided for informational purposes and to assist with the CEQA review process.

A majority of the lands within and adjacent to the project area are zoned for agriculture, with Agriculture or Exclusive Agriculture zoning the most prevalent categories. A few parcels in Yuba County are zoned Agricultural Industrial and Agricultural/Rural Residential. In the portions of the project area near developed communities, including Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus, land use is primarily residential development, interspersed with commercial and light industrial development. No lands in or near the project area are zoned for forest land. See Section 3.10, Land Use and Planning, and Section 3.2.3.2, Local, for additional information about the zoning in the project area.

## 3.2.2.2 Methodology

The following sources were consulted to complete the analysis for agricultural and forestry resources: the DOC FMMP data and maps; Williamson Act contract maps; aerial photographs; and county general plans, city general plans, zoning ordinances, and maps. The mapped agricultural and forestry designations and contracted lands within Butte, Yuba, and Sutter Counties were compared with the project area, in particular, to the areas where construction of new support structures and modifications to existing facilities, staging, and pull sites would take place. These areas represent the locations with the greatest potential for impacts on farmland and forestry lands. Land cover maps generated from site surveys for this project were used to estimate impacts on farmland.

## 3.2.3 ENVIRONMENTAL SETTING

### 3.2.3.1 Regional

The approximately 59.5-mile 115 kV power line route is located in a primarily agricultural area (see Figure 3.2-1, Agricultural Resources). Agriculture, primarily rice fields and orchards, is the predominant land use throughout much of the project area. Prominent geographic features that intersect the project area include the Feather River, Yuba River, and numerous highways including State Route (SR) 99, SR 70, SR 65, and SR 20.

According to DOC data, approximately 192,643 acres of Prime Farmland are located throughout Butte County, which accounts for approximately 17.9 percent of land within county boundaries. Approximately 39,947 acres of Prime Farmland are located throughout Yuba County, which accounts for approximately 9.7 percent of land within county boundaries. Approximately 161,503 acres of Prime Farmland are located throughout Sutter County, which accounts for approximately 41.5 percent of land within county boundaries.

### 3.2.3.2 Local

#### *Williamson Act and Important Farmland*

The project area crosses Williamson Act Prime and Non-Prime agricultural land in Butte County. As shown in Figure 3.2-1, Agricultural Resources, the FMMP has also mapped Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Grazing Land in the project area.

#### *Zoning Districts*

Butte County, Yuba County, and Sutter County agricultural zoning designations each allow for public utility facilities. The project area crosses or is immediately adjacent to agriculture-related zoning districts in the three counties, as described below. The project area does not cross and is not immediately adjacent, to agriculture-related zoning districts in Oroville, Marysville, or Yuba City.

*Butte County*

**Agriculture (AG)**. The purpose of the Agriculture zone is to provide for development of land with the space and conditions compatible with agricultural pursuits; to promote and encourage these pursuits by providing opportunities for agricultural operations such as crop cultivation, animal grazing, stock ponds, and agricultural processing that may increase their economic viability; and to protect against encroachment by unrelated and incompatible land uses that may adversely affect the development or use of these lands.

*Yuba County*

**Exclusive Agriculture (AE)**. The purpose of the Exclusive Agriculture district is to provide for development of land with the space and conditions compatible with agricultural pursuits; to promote and encourage these pursuits by providing opportunities for agricultural operations that may increase their economic viability; to protect against encroachment by unrelated and incompatible land uses that may adversely affect the development or use of these lands; and to prevent unnecessary conversion of agricultural land to urban or other uses.

**Agricultural Industrial (AI)**. The purpose of the Agricultural Industrial district is to provide for development of land with the space and conditions compatible with agricultural and industrial pursuits; to promote and encourage these pursuits by providing opportunities for agricultural uses to establish new compatible support industries and operations that may increase their economic vitality; and to protect against encroachment by unrelated and incompatible land uses that may adversely affect the development or use of these lands.

**Agricultural/Rural Residential (AR)**. The purpose of the Agricultural/Rural Residential district is to provide for development of land with the space and conditions compatible for low density rural residential uses and small agricultural operations; to promote and encourage opportunities for specialty crops, boutique farming, and agritourism; and to protect against encroachment by unrelated and incompatible land uses that may adversely affect the development or use of these lands.

*Sutter County*

**Agriculture (AG)**. The purpose of the Agricultural district is to provide for development of land with the space and conditions compatible with agricultural pursuits; to promote and encourage these pursuits by providing additional opportunities for retail, commercial, and service establishments that may increase their economic viability; and to protect against encroachment by unrelated and incompatible land uses that may adversely affect the development or use of these lands.

## 3.2.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for agricultural and forest resources impacts derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational impacts on agricultural and forest resources.

### 3.2.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on agricultural and forest resources were evaluated for each of the criteria listed in Table 3.2-1, as discussed in Section 3.2.4.3.

### 3.2.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

***APM AG-1: Coordinate With Landowners Prior to Construction and During Restoration Efforts***

PG&E will coordinate with landowners prior to construction and during restoration efforts. Measures to be implemented may include, but are not limited to, the following:

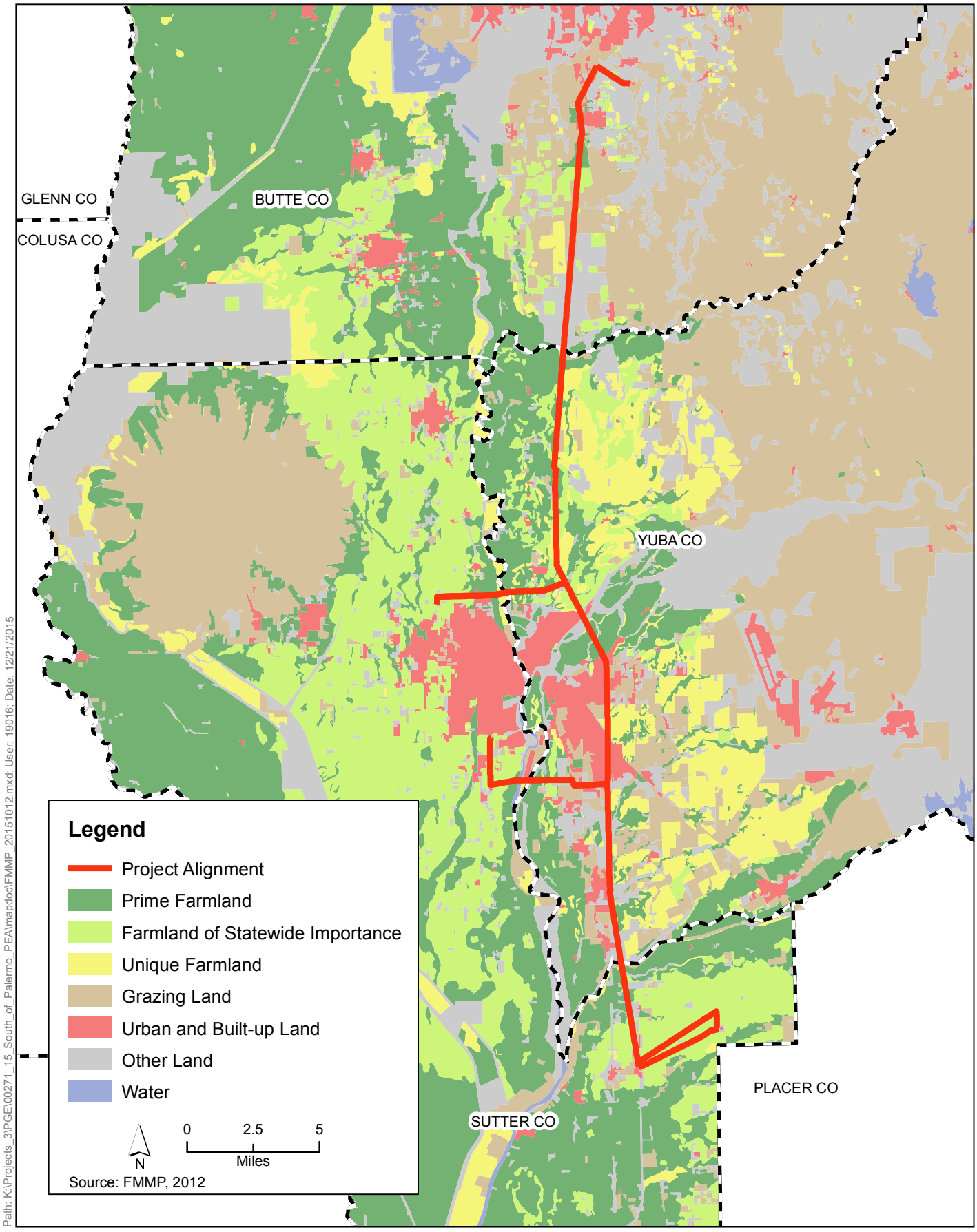



**Figure 3.2-1**
**Agricultural Resources**
South of Palermo 115 kV Power Line Reinforcement Project

- Provide written notice to landowners outlining construction activities and restoration efforts.
- In areas containing permanent crops (i.e., grape vines, orchard crops, etc.) that must be removed to gain access to pole sites for construction purposes, PG&E may provide compensation to the farmer and/or landowner in coordination with the landowner.
- Complete pre-project, post-project, and post-restoration site visit with landowners.
- Take photos of pre-project, post-project, and post-restoration conditions in the affected areas.

APMs related to vegetation removal and restoration post project are described in Section 3.4, Biological Resources.

#### 3.2.4.3 Potential Impacts

Project impacts on agriculture and forest resources were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential project impacts from both the construction phase and operation and maintenance (O&M) phase.

The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, with new support structures and modifications to existing facilities within the existing utility corridor. The project will require temporary use of agriculture lands (i.e. rice fields, pastures, and orchards) that may result in crop loss or tree removal. The operations and maintenance activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts on farmland and forest lands will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP, to nonagricultural use?**
***Less than Significant***

The project has been designed to minimize impacts on farmland and agricultural resources to the maximum extent feasible. The tower replacement element of the project will consist of replacing existing lattice steel towers, which have four feet and therefore four foundations, with tubular steel, hybrid, and lattice steel poles, which are monopoles and therefore have a slightly smaller footprint. Because the tower footprints will be reduced, the project will not result in the permanent conversion of agricultural land as result of placing new pole foundations. Land previously occupied by the lattice steel towers will be available to be reclaimed and returned to agricultural uses, primarily rice fields and orchards, after construction. Therefore, land available for agriculture will not decrease as a result of the project and no permanent impact on farmland will occur in the project area.

Project construction activities have the potential to temporarily interfere with agricultural operations by restricting landowner access to the agricultural areas where active construction is taking place, requiring production to cease during the time of construction, or requiring the removal, in limited areas, of trees or agricultural improvements. Such interference will result in temporary impacts on agriculture. Construction, staging, and access will result in temporary loss of production on approximately 24.63 acres designated as Prime Farmland, approximately 4.12 acres designated as Unique Farmland, and approximately 32.84 acres of Farmland of Statewide Importance.

The project is estimated to be completed in 3 years, but construction activities would only affect specific locations for a limited amount of time, estimated to be approximately 1–2 weeks in any given location. All lands taken out of agricultural production during construction will be reclaimed and returned to agricultural production after construction. Once construction is completed, all temporary access roads and construction work areas in agricultural areas will be restored to their original conditions, unless otherwise requested by landowners needing access for agricultural operations. In addition, PG&E will implement APM AG-1 to coordinate construction activities with affected landowners. Therefore, temporary impacts related the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use during construction of the project will be less than significant.

**b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?** ***Less than Significant***

Portions of the power line reconductoring and temporary construction areas (e.g., laydown areas, pull sites) will occur on lands zoned for agriculture and on Prime agricultural land and Non-Prime agricultural land under Williamson Act contracts. During project construction, portions of these lands will be taken out of production to accommodate reconductoring activities, installation of new support structures, modifications to existing structures, delivery and staging of construction materials, pulling and dragging the power lines across the land, grading activities, and construction crew access. Power line reconductoring activities are considered a compatible use of contracted Williamson Act lands under Government Code Section 51238. Given this consistency, and because the project impacts are temporary and will have minimal permanent impacts on Williamson Act land, the impacts will be less than significant.

**c) Would the project 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))?** ***No Impact***

No areas of protected forest land, timberland, or commercial timberland are located in or near the project area. Therefore, the project will not conflict with or cause the rezoning of these resources, and no impact will occur.

**d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?** ***No Impact***

No areas of forest land are located in or near the project area. Therefore, the project will not result in the loss of forest land or conversion of forest land to non-forest uses, and no impact will occur.

**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 nonagricultural use or conversion of forest land to non-forest use? *No Impact***

Construction activities will be confined to designated areas for construction, staging, and access. Upon project completion, all lands will be returned to agricultural uses. O&M activities will not change from existing O&M activities. For these reasons, the project will not result in any changes in the existing environment that could result in the conversion of farmland to nonagricultural uses or conversion of forest land to non-forest use. No impact will occur.

### 3.2.5 REFERENCES

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# 3.3 AIR QUALITY

## 3.3.1 INTRODUCTION

This section discusses potential air quality issues associated with the project construction, operation, and maintenance, including both regional and site-specific concerns, and concludes that impacts will be less than significant in these areas. Air quality emissions will occur within the Butte County Air Quality Management District (BCAQMD) and the Feather River Air Quality Management District (FRAQMD). Emission evaluations follow CEQA guidance provided by BCAQMD and FRAQMD for activities within their jurisdictions. Primary air emissions from the projects include construction emissions associated with fugitive dust, heavy construction equipment, helicopter usage, and construction workers commuting to and from the project site. Air emissions evaluated include reactive organic gases (ROG), nitrogen oxides ($NO_X$), particulate matter (PM), diesel particulate matter, and carbon monoxide (CO). Greenhouse gas (GHG) emissions are discussed separately in Section 3.7. The analysis concludes that impacts on air quality will be less than significant with mitigation. Incorporating the APMs described in Section 3.3.4.2 will further minimize potential less-than-significant impacts.

Emission calculations in this document were based on worst-case estimates of pollutant emissions to ensure presentation of a conservative environmental analysis. This analysis may be revised, as needed, to reflect changes to the project plans. The project's potential effects on air quality were evaluated using the criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.3-1 and discussed in more detail in Section 3.3.4.

**Table 3.3-1: CEQA Checklist for Air Quality**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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 nonattainment 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? | ☐ | ☐ | ☒ | ☐ |

## 3.3.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.3.2.1 Regulatory Background

#### *Federal*

The federal Clean Air Act establishes the statutory framework for regulation of air quality in the United States. Pursuant to this act, the U.S. Environmental Protection Agency (US EPA) has established various regulations to achieve and maintain acceptable air quality, including the adoption of National Ambient Air Quality Standards (NAAQS), mandatory state implementation plan (SIP) or maintenance plan requirements to achieve and maintain NAAQS, and emission standards for both stationary and mobile sources of air pollution. NAAQS were established in 1970 for six pollutants: carbon monoxide (CO), ozone ($O_3$), particulate matter (PM10 and PM2.5), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and lead (Pb). These pollutants are commonly referred to as *criteria pollutants*, because they are considered the most prevalent air pollutants known to be hazardous to human health. US EPA designates a region that is meeting the air quality standard for a given pollutant as being in *attainment* for that pollutant; regions not meeting the federal standard are designated as being in *nonattainment* for that pollutant. If a region is designated as nonattainment for a NAAQS, the Clean Air Act requires the state to develop a SIP to demonstrate how the standard will be attained, including the establishment of specific requirements for review and approval of new or modified stationary sources of air pollution. The Clean Air Act Amendments of 1990 directed US EPA to set standards for hazardous air pollutants and required facilities to sharply reduce emissions. Table 3.3-2 summarizes state and federal ambient air quality standards.

#### *State*

The California Air Resources Board (CARB) is the state agency responsible for California air quality management, including establishment of California Ambient Air Quality Standards (CAAQS), mobile-source emission standards, and GHG regulations, as well as oversight of regional air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution. The CAAQS are generally more stringent, except for the 1-hour $NO_2$ and $SO_2$ standards, and include more pollutants than the NAAQS (see Table 3.3-2). California specifies four additional criteria pollutants: visibility reducing particles, sulfates, hydrogen sulfide ($H_2S$), and vinyl chloride. Similar to US EPA, CARB designates counties in California as being in attainment or nonattainment for the CAAQS.

The Air Toxic "Hot Spots" Information and Assessment Act identifies toxic air contaminant hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Toxic air contaminants are also referred to as hazardous air pollutants. The Act requires that a business or other establishment identified as a significant source of toxic emissions provide the affected population with information about health risks posed by the emissions.

Deposits of naturally occurring asbestos (NOA) have been identified in the eastern and northeastern portions Butte County, as well as the northeastern tip of Yuba County (California Department of Conservation 2000); however, the project is not located near these areas and so NOA is not discussed further.

**Table 3.3-2: Ambient Air Quality Standards**

| Criteria Pollutant | Average Time | California Standards | National Standards[a] | |
|---|---|---|---|---|
| | | | Primary | Secondary |
| Ozone | 1-hour | 0.09 ppm | None | None |
| | 8–hour | 0.070 ppm | 0.070 ppm | 0.070 ppm |
| Particulate matter (PM10) | 24-hour | 50 $\mu g/m^3$ | 150 $\mu g/m^3$ | 150 $\mu g/m^3$ |
| | Annual mean | 20 $\mu g/m^3$ | None | None |
| Fine particulate matter (PM2.5) | 24-hour | None | 35 $\mu g/m^3$ | 35 $\mu g/m^3$ |
| | Annual mean | 12 $\mu g/m^3$ | 12.0 $\mu g/m^3$ | 15 $\mu g/m^3$ |
| Carbon monoxide | 8-hour | 9.0 ppm | 9 ppm | None |
| | 1-hour | 20 ppm | 35 ppm | None |
| Nitrogen dioxide | Annual mean | 0.030 ppm | 0.053 ppm | 0.053 ppm |
| | 1-hour | 0.18 ppm | 0.100 ppm | None |
| Sulfur dioxide[b] | Annual mean | None | 0.030 ppm | None |
| | 24-hour | 0.04 ppm | 0.014 ppm | None |
| | 3-hour | None | None | 0.5 ppm |
| | 1-hour | 0.25 ppm | 0.075 ppm | None |
| Lead | 30-day average | 1.5 $\mu g/m^3$ | None | None |
| | Calendar quarter | None | 1.5 $\mu g/m^3$ | 1.5 $\mu g/m^3$ |
| | 3-month average | None | 0.15 $\mu g/m^3$ | 0.15 $\mu g/m^3$ |
| Sulfates | 24-hour | 25 $\mu g/m^3$ | None | None |
| Hydrogen sulfide | 1-hour | 0.03 ppm | None | None |
| Vinyl chloride | 24-hour | 0.01 ppm | None | None |

Source: California Air Resources Board 2015a

[a] National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

[b] The final 1-hour sulfur dioxide rule was signed June 2, 2010. The annual and 24-hour standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

$\mu g/m^3$ = micrograms per cubic meter

ppm = parts per million

### *Regional*

Responsibility for attaining and maintaining air quality in California is divided between CARB and regional air quality districts—in this case, the BCAQMD and the FRAQMD. CARB sets areas of control for the regional districts, dividing the state into air basins. These air basins are defined by topography, which limits air flow access, or by county boundaries. Plans, policies, and regulations relevant to the project are discussed below.

Responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emission inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing regional air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

The following regional policies related to air quality may apply to implementation of the project.

### *Regional Air Quality Attainment Plan*

The BCAQMD and FRAQMD, along with other air quality districts and counties in the Sacramento area (Sacramento, Yolo, Placer, El Dorado, Solano, Sutter, and Butte) have adopted the *Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan* (2012 Plan) (Sacramento Valley Air Quality Engineering and Enforcement Professionals 2012) to bring the Northern Sacramento Valley Planning Area (NSVPA) into compliance with CAAQS for $O_3$ and PM10. The 2012 Plan is an update of previous versions from 2006 and 2009.

The 2012 Plan identifies those portions of the NSVPA designated as nonattainment for the CAAQS and discusses the health effects related to the various air pollutants. As with the previous plans, the 2012 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. The 2012 Plan also addresses the effect that pollutant transport has on the ability of the NSVPA to attain the CAAQS.

### *Feather River Air Quality Management District*

The FRAQMD has jurisdiction over local air quality in Sutter and Yuba Counties. Under the California Clean Air Act, FRAQMD is required to develop an air quality plan for nonattainment criteria pollutants in the air district. The FRAQMD has adopted the 2012 Plan, which outlines strategies to achieve the health-based $O_3$ standard. The Yuba City-Marysville area was previously designated as a nonattainment area for the 2006 24-hour PM2.5 standard. FRAQMD released its *Yuba City-Marysville PM 2.5 Nonattainment Area Redesignation Request and Maintenance Plan* in 2013 (FRAQMD 2013), and US EPA approved California's request to redesignate the Yuba City-Marysville area to attainment for the 2006 24-hour PM2.5 standard on November 20, 2014 (US EPA 2015a).

The FRAQMD adopted CEQA emission thresholds in *Indirect Source Review Guidelines* (FRAQMD 2010). The June 7, 2010 document amended the guidelines originally adopted in 1998 and contained updates to certain thresholds and additional details related to air quality in the FRAQMD. The purpose of this guidance document is to help identify projects that may have a significant adverse effect on air quality, and the thresholds that are in place to determine the level of significance of project-related emissions. FRAQMD's *Indirect Source Review Guidelines* contains CEQA thresholds of significance applicable to the project, which are used in this analysis to evaluate air quality impacts related to project construction within Sutter and Yuba Counties.

*Butte County Air Quality Management District*

The BCAQMD has jurisdiction over local air quality in Butte County. BCAQMD has adopted the 2012 Plan to address $O_3$ in the Sacramento Valley. The air district also has developed measures to control PM.

BCAQMD assisted in developing the 2004 Revisions to the *California State Implementation Plan for Carbon Monoxide*, prepared by CARB. It demonstrates that 10 nonattainment/ maintenance areas, including the Chico urbanized area, attained the 8-hour CO standard between 1992 and 1995, and describes how these areas would continue to maintain compliance with the standard (CARB 2004:1). US EPA redesignated the Chico nonattainment area as an attainment area for the 2006 24-hour PM2.5 standard on August 22, 2013 (US EPA 2015a).

The BCAQMD prepared its *CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Project Subject to CEQA Review* (CEQA Air Quality Handbook) to assist lead agencies and project applicants in complying with the requirements of CEQA when evaluating potential air quality impacts that may occur with a project proposed in Butte County or its incorporated cities. This handbook was adopted on October 23, 2014 (BCAQMD 2014a) and contains CEQA thresholds of significance applicable to the project, which are used in this analysis to evaluate air quality impacts related to project construction within Butte County.

***Local***

No local (city and county) air quality regulations are applicable to this project.

#### 3.3.2.2 Methodology

Constructing the project would generate emissions of ROG, $NO_X$, CO, PM10, and PM2.5 that would result in short-term impacts on ambient air quality in the study area. Construction-related emissions were estimated using a combination of emission factors and methodologies. The CalEEMod was used to estimate off-road heavy-duty construction equipment emissions; CARB's EMFAC2014 model was used to estimate on-road emissions; and specific fuel use factors developed by the Switzerland Federal Office of Civil Aviation (FOCA) were used to evaluate helicopter emissions (FOCA 2013).

It is anticipated that construction activities would occur in three phases over 36 months between 2018 and 2021. Each phase would have multiple sub-phases, such as installing new poles/towers, modifying existing towers, removing old towers, and installing new conductor. PG&E has provided preliminary phasing information, including the projected construction schedule, equipment, grading quantities, and number of truck trips. Detailed construction emission assumptions and calculations will be submitted separately to CPUC staff.

## 3.3.3 ENVIRONMENTAL SETTING

Land uses along the project alignment are mostly agricultural lands and open-space areas. Sensitive receptors[1] in the project vicinity are primarily residential, although nonresidential sensitive land uses (schools) are also located adjacent to the project area. The closest sensitive receptors include people living in housing tracts within 10 feet to project work areas and access routes and within 25 feet of the power line or associated facilities. Residential land uses are located within the few populated areas (i.e., the communities of Linda, Olivehurst, Palermo, Southern Plumas Lake, and Trowbridge) along the project alignment. Some schools (including Yuba Community College, East Nicolaus High School, Yuba Gardens Middle School, and Linda Elementary School) exist within 100 feet from the alignment.

### 3.3.3.1 Regional Setting

#### *Climate and Meteorological Conditions*

The project area is located within the Sacramento Valley Air Basin (SVAB), which comprises Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and portions of Placer and Solano Counties. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada range, and on the west by the Coast Ranges. The intervening terrain is flat.

Summer conditions are typically characterized by high temperatures and low humidity, with prevailing winds from the south. Summer temperatures average approximately 90 degrees Fahrenheit (°F) during the day and 50°F at night.

Winter conditions are characterized by occasional rainstorms interspersed with stagnant and sometimes foggy weather. Winter daytime temperatures average in the low 50s and nighttime temperatures average in the upper 30s. During winter, north winds become more frequent, but winds from the south predominate. Rainfall occurs mainly from late October to early May, averaging 17.2 inches per year but varying significantly each year.

In addition to prevailing wind patterns that control the rate at which local pollutant emissions disperse, Yuba and Sutter Counties experience two types of inversions that affect the air quality. The first type of inversion contributes to photochemical smog problems by confining pollution to a shallow layer near the ground. This inversion type occurs in the summer, when sinking air acts like a lid over the region. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. These inversions occur during winter nights and can cause localized air pollution hot spots near emission sources because of poor dispersion.

### 3.3.3.2 Ambient Air Quality

Existing air quality conditions in the project area can be characterized in terms of the NAAQS and CAAQS established by the federal and state governments for various pollutants and by

[1] The BCAQMD and FRAQMD generally define a "sensitive receptor" as an area where human populations, especially children, seniors, and sick persons, are located and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-hour, 8-hour, and 1-hour). Sensitive receptors typically include residences, hospitals, and schools.

monitoring data collected in the region (Table 3.3-3). Monitoring data concentrations typically are expressed in terms of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). The air quality monitoring station nearest to the project area is on Almond Street in Yuba City, approximately 4 miles east of the project alignment. Air quality monitoring data obtained from the CARB and US EPA are summarized in Table 3.3-3 for the Yuba City monitoring station for all pollutants except CO. CO is not monitored at the Yuba City monitoring station and was obtained from the Chico Monitoring Station in Butte County (the monitoring station nearest to the project alignment that monitors for CO).

These data represent air quality monitoring data for the last 3 years (2012–2014). As indicated in Table 3.3-3, the Yuba City monitoring station has experienced two violations of the state 1-hour $O_3$ standard, five violations of the state 8-hour $O_3$ standard, and one violation of the federal 8-hour $O_3$ standard during the last 3 years. Ten violations of the state 24-hour PM10 standard and three violations of the federal PM2.5 standard occurred during the last 3 years. No violations of the CO standard occurred during this period, according to monitoring data from the Chico Monitoring Station.

**Table 3.3-3: Ambient Air Quality Monitoring Data from the Yuba City Monitoring Station (2012–2014)**

| Pollutant Standard | 2012 | 2013 | 2014 |
|---|---|---|---|
| **Ozone ($O_3$)** | | | |
| Maximum 1-hour concentration (ppm) | 0.083 | 0.095 | 0.103 |
| Maximum 8-hour concentration (ppm) | 0.073 | 0.067 | 0.088 |
| ***Number of days standard exceeded*[a]** | | | |
| CAAQS 1-hour (>0.09 ppm) | 0 | 1 | 1 |
| NAAQS 8-hour (>0.075 ppm) | 0 | 0 | 1 |
| CAAQS 8-hour (>0.07 ppm) | 2 | 0 | 3 |
| **Carbon Monoxide (CO)** | | | |
| Maximum 8-hour concentration (ppm) | 1.5 | 1.5 | 2.0 |
| Maximum 1-hour concentration (ppm) | 1.7 | 2.5 | 3.0 |
| ***Number of days standard exceeded*[a]** | | | |
| NAAQS 8-hour (≥9.0 ppm) | 0 | 0 | 0 |
| CAAQS 8-hour (≥9.0 ppm) | 0 | 0 | 0 |
| NAAQS 1-hour (≥35 ppm) | 0 | 0 | 0 |
| CAAQS 1-hour (≥20 ppm) | 0 | 0 | 0 |

| Pollutant Standard | 2012 | 2013 | 2014 |
|---|---|---|---|
| **Nitrogen Dioxide ($NO_2$)** | | | |
| Maximum 1-hour concentration (ppm) | 0.083 | 0.057 | 0.049 |
| State second-highest 1-hour concentration (ppm) | 0.078 | 0.055 | 0.047 |
| Annual average concentration (ppm) | 0.01 | 0.009 | 0.008 |
| ***Number of days standard exceeded*[a]** | | | |
| CAAQS 1-hour standard (0.18 ppm) | 0 | 0 | 0 |
| **PM10**[b] | | | |
| National maximum 24-hour concentration ($\mu g/m^3$)[c] | 60.8 | 56.1 | 45.1 |
| State maximum 24-hour concentration ($\mu g/m^3$)[d] | 63.0 | 58.4 | 77.6 |
| National annual average concentration ($\mu g/m^3$) | 19.8 | 23.9 | 21.5 |
| State annual average concentration ($\mu g/m^3$)[e] | 20.3 | – | – |
| ***Number of days standard exceeded*[a]** | | | |
| NAAQS 24-hour (>150 $\mu g/m^3$)[f] | 0 | 0 | 0 |
| CAAQS 24-hour (>50 $\mu g/m^3$)[f] | 1 | 1 | 8 |
| **PM2.5**[b] | | | |
| National maximum 24-hour concentration ($\mu g/m^3$)[c] | 41.0 | 33.4 | 41.8 |
| State maximum 24-hour concentration ($\mu g/m^3$)[d] | 50.2 | 39.3 | 45.3 |
| National annual average concentration ($\mu g/m^3$) | 6.9 | 8.2 | – |
| State annual average concentration ($\mu g/m^3$)[e] | 9.9 | – | – |
| ***Number of days standard exceeded*[a]** | | | |
| NAAQS 24-hour (>35 $\mu g/m^3$)[f] | 1 | 0 | 2 |

Sources: California Air Resources Board 2015b, U.S. Environmental Protection Agency 2015b

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
CAAQS = California ambient air quality standards
NAAQS = National ambient air quality standards
– = Insufficient data available to determine the value

Carbon Monoxide monitoring data are from the Chico Monitoring Station at 984 East Avenue, Chico CA

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

#### 3.3.3.3 Air Quality Attainment Status

Areas are classified as in *attainment* or *nonattainment* with respect to NAAQS and CAAQS. These classifications are made by comparing actual monitored air pollutant concentrations to state and federal standards (Table 3.3-4). If a pollutant concentration is lower than the state or federal standard, the area is considered to be in attainment of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. This typically occurs in nonurbanized areas, where pollutant levels may be less closely monitored.

**Table 3.3-4: Attainment Status for Criteria Pollutants of Concern**

| Pollutant | BCAQMD | | FRAQMD | |
|---|---|---|---|---|
| | State Designations | National Designations | State Designations | National Designations |
| 8-Hour Ozone | Nonattainment | Marginal Nonattainment[a] | Nonattainment – Transitional | South Sutter County: Severe Nonattainment<br>The balance of FRAQMD: Attainment |
| Carbon monoxide | Attainment | Moderate attainment[b] | Attainment[c] | Attainment |
| PM10 | Nonattainment | Attainment | Nonattainment | Attainment |
| PM2.5 | Nonattainment | Nonattainment | Attainment | Attainment |

Sources: U.S. Environmental Protection Agency 2015a, BCAQMD 2014b, FRAQMD 2015a

PM = particulate matter

[a] Area has a design value of 0.076 up to but not including 0.086 ppm.

[b] Chico urban area is designated a maintenance area for CO and PM2.5 while the rest of the County is designated as attainment.

[c] Yuba County is unclassified and Sutter County is designated as attainment.

### 3.3.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for air quality impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational air quality impacts.

#### 3.3.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on air quality were evaluated for each of the criteria listed in Table 3.3-1, as discussed in Section 3.3.4.3.

BCAQMD has specified screening criteria to determine if modeling for criteria pollutants would be necessary, along with significance thresholds for projects that exceed the screening criteria in its CEQA Air Quality Handbook (BCAQMD 2014a). To determine air quality effects of

projects located within district boundaries, the size and metric for the land use types in the screening criteria must be compared to that of the proposed project. If the screening criteria are met, then further quantification of emissions is not necessary and a less-than-significant impact for criteria air pollutants may be assumed. If a project exceeds the screening criteria, project-specific modeling must be performed (generally using CalEEMod). Table 3.3-5 summarizes applicable thresholds from BCAQMD that are used in the analysis of project-related construction and operational emissions (BCAQMD 2014a).

**Table 3.3-5: BCAQMD Significance Thresholds for Criteria Pollutants of Concern**

| Project Phase | $NO_X$ | ROG | PM10 |
|---|---|---|---|
| Operational | 25 lbs/day | 25 lbs/day | 80 lbs/day |
| Construction | 137 lbs/day (not to exceed 4.5 tons/year) | 137 lbs/day (not to exceed 4.5 tons/year) | 80 lbs/day |

lbs = pounds
$NO_X$ = nitrogen oxides
PM = particulate matter
ROG = reactive organic gases

The FRAQMD has also adopted thresholds of significance to assist lead agencies in determining whether a project may have a significant impact on air quality. Table 3.3-6 summarizes applicable thresholds that are used in the analysis of project-related construction and operational impacts within FRAQMD's jurisdiction. Emissions that would exceed the threshold levels indicated in Table 3.3-6 would be considered significant and would require mitigation.

**Table 3.3-6: FRAQMD Significance Thresholds for Criteria Pollutants of Concern**

| Project Phase | $NO_X$ | ROG | PM10 | PM2.5 |
|---|---|---|---|---|
| Operational | 25 lbs/day | 25 lbs/day | 80 lbs/day | Not yet established |
| Construction | 25 lbs/day multiplied by project length, not to exceed 4.5 tons/year[a] | 25 lbs/day multiplied by project length, not to exceed 4.5 tons/year* | 80 lbs/day | Not yet established |

lbs = pounds
$NO_X$ = nitrogen oxides
PM = particulate matter
ROG = reactive organic gases
[a] $NO_X$ and ROG construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year

### 3.3.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs during construction:

***APM AQ-1: Implement FRAQMD Standard Construction Mitigation Measures***

PG&E shall implement the following standard construction mitigation measures (SMMs) required by the FRAQMD to help reduce construction-related emissions. Note that some FRAQMD SMMs are not listed below, as they are identified in APM GHG-1 described in Section 3.7, Greenhouse Gas Emissions.

1. Implement the Fugitive Dust Control Plan. PG&E shall prepare and submit a Fugitive Dust Control Plan to the FRAQMD to help reduce construction-related fugitive dust emissions. The Fugitive Dust Control Plan must be submitted by PG&E to the FRAQMD prior to the commencement of construction activities.

2. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, as practical.

3. Implement a traffic plan to minimize traffic flow interference from construction activities, in coordination with any traffic plans required by APM TRA-1.

The above measures will be applied across the entire project area.

***APM AQ-2: Implement BCAQMD Construction Best Practices***

PG&E shall implement the following standard construction best practices recommended by the BCAQMD to help reduce construction-related emissions. Note that some BCAQMD construction best practices are not listed below, as they are identified in APM GHG-1 described in Section 3.7, Greenhouse Gas Emissions.

1. Diesel PM Exhaust from Construction Equipment

    a) Avoid idling, staging, and queuing of diesel equipment within 1,000 feet of sensitive receptors.

    b) Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.

    c) To the extent feasible, truck trips shall be scheduled during non-peak hours to reduce peak hour emissions.

2. Fugitive Dust: The following is a list of measures that may be required throughout the duration of the construction activities:

    a) Reduce the amount of the disturbed area where possible.

    b) Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site.

    c) All dirt stockpile areas should be sprayed daily as needed, and covered.

    d) Exposed ground areas that will be reworked at dates more than 1 month after initial grading should be sown with a fast-germinating noninvasive grass seed and watered until vegetation is established.

    e) All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders or jute netting.

f) Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

g) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.

h) Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and Air District for any questions or concerns about dust from the project.

The above measures will be applied across the entire project area.

***APM AQ-3: Off-Site Mitigation Measures***

PG&E shall enter into an off-site mitigation agreement with the FRAQMD to offset construction emissions in excess of 4.5 tons per year of $NO_X$ to levels below the FRAQMD's 4.5 tons per year significance threshold. The off-site mitigation rate shall be based on the current project cost effectiveness factor from the Carl Moyer Memorial Air Quality Standards Attainment Program. The current off-site mitigation rate is $18,030 per ton of $O_3$ precursor emissions ($NO_X$ or ROG) over the District threshold calculated over the length of the expected exceedance.

PG&E will employ standard Best Management Practices (BMPs)—such as minimizing vehicle trips and keeping vehicles and equipment well maintained—during operation of the project. No significant O&M impacts will occur and no operational APMs are necessary.

#### 3.3.4.3 Potential Impacts

Project impacts on air quality were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential impacts from project construction.

The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, with new support structures and modifications to existing facilities within the existing utility corridor. The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts related to air quality will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project conflict with or obstruct implementation of the applicable air quality plan? *Less than Significant with Mitigation***

As discussed in Section 3.3.2.2, Methodology, the construction land-based equipment (off-road construction equipment and on-road vehicles) and helicopter emissions associated with implementation of the project were estimated using the CalEEMod and EMFAC2014 models and FOCA emission factors. Air quality reductions associated with APM AQ-2 (specifically, Level

1 diesel particulate filters and diesel oxidation catalysts sufficient to achieve 40 percent $NO_X$ reduction) were included in the analysis to help reduce $NO_X$-related impacts. Tables 3.3-7 and 3.3-8 summarize unmitigated construction emissions within BCAQMD's and FRAQMD's jurisdictions, respectively. The emissions apportioned into the individual air districts and presented in Tables 3.3-7 and 3.3-8 were used to evaluate project significance.

Tables 3.3-9 and 3.3-10 present mitigated emissions without the inclusion of APM AQ-3 (off-site mitigation) corresponding to the conditions in Tables 3.3-7 and 3.3-8 (mitigated emissions [without offsets] within BCAQMD and FRAQMD in Tables 3.3-9 and 3.3-10, respectively). The mitigated emissions apportioned into the individual air districts and presented in Tables 3.3-9 and 3.3-10 are used to evaluate project significance.

As indicated in Tables 3.3-7 through 3.3-10 construction activities associated with the project would generate construction-related emissions of criteria pollutants. Exhaust emissions result from the combustion of fossil fuels in land-based equipment, which includes both off-road construction equipment and on-road vehicles. Detailed construction emission assumptions and calculations will be submitted separately to CPUC staff.

Table 3.3-7 indicates that construction emissions would not exceed BCAQMD's construction emissions thresholds. Table 3.3-8 indicates that construction emissions would exceed FRAQMD's 25 pounds per day ROG and $NO_X$ thresholds. Further, Table 3.3-10 indicates that even with application of exhaust control measures implemented in accordance with APM AQ-2 (i.e., Level 1 diesel particulate filters and diesel oxidation catalysts sufficient to achieve 40 percent $NO_X$ reduction), projected construction emissions within the FRAQMD are still anticipated to exceed FRAQMD ROG and $NO_X$ thresholds of 25 pounds per day. PG&E has met with FRAQMD to staff to discuss the project and find ways to meet FRAQMD's air quality thresholds. FRAQMD staff indicated that projects with emissions in excess of 25 pounds per day might still be considered less than significant if total annual emissions to do not exceed 4.5 tons per year (Spaethe pers. comm.).

As indicated in Table 3.3-11, construction activities in 2019 would result in 5.9 tons of $NO_X$ emissions, which are in excess of FRAQMD's 4.5 tons per year threshold even with implementation of APMs AQ-1 and AQ-2. However, the offset requirement in APM AQ-3, Off-Site Mitigation for Construction Equipment, would offset the 1.4 tons necessary to reduce these emissions to meet FRAQMD's 4.5 tons per year threshold. Accordingly, construction emissions are anticipated to be less than significant with this mitigation incorporated.

**Table 3.3-7: Construction-Related Emissions within BCAQMD's Jurisdiction (Unmitigated)**

| Year/Phase | ROG (lbs/day) | $NO_X$ (lbs/day) | CO (lbs/day) | PM10 Total (lbs/day) | PM2.5 Total (lbs/day) |
|---|---|---|---|---|---|
| **2018** | | | | | |
| Land-based construction emissions | 1.4 | 15.3 | 23.6 | 0.6 | 0.6 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2018 Total** | **27.1** | **53.4** | **60.7** | **1.7** | **1.7** |
| **2019** | | | | | |
| Land-based construction emissions | 2.1 | 22.7 | 43.0 | 0.9 | 0.8 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2019 Total** | **27.8** | **60.7** | **80.0** | **2.0** | **1.9** |
| **2020** | | | | | |
| Land-based construction emissions | 1.2 | 17.1 | 10.8 | 0.5 | 0.5 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2020 Total** | **26.9** | **55.2** | **47.9** | **1.6** | **1.6** |
| **2021** | | | | | |
| Land-based construction emissions | 0.5 | 8.6 | 5.0 | 0.2 | 0.2 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2021 Total** | **26.2** | **46.7** | **42.0** | **1.3** | **1.3** |
| **Worst-Case Combined Yearly Maximum for Overlapping Phases (2019)** | | | | | |
| 2019 | 27.8 | 60.7 | 80.0 | 2.0 | 1.9 |
| BCAQMD threshold (lbs/day) | 137 | 137 | NA | 80 | NA |
| Exceedance of threshold? | No | No | NA | No | NA |

[1] While land-based equipment from phases 1, 2, and 3 may sometimes overlap, there will be no more than 3 helicopters operating on any given day. Helicopter emissions in this table are therefore not described by which phase they are working on.

CO = carbon monoxide

lbs = pounds

$NO_X$ = nitrogen oxides

PM = particulate matter

ROG = reactive organic gases

**Table 3.3-8: Construction-Related Emissions within FRAQMD's Jurisdiction (Unmitigated)**

| Year/Phase | ROG (lbs/day) | $NO_X$ (lbs/day) | CO (lbs/day) | PM10 Total (lbs/day) | PM2.5 Total (lbs/day) |
|---|---|---|---|---|---|
| **2018** | | | | | |
| Land-based construction emissions | 5.2 | 56.4 | 87.0 | 2.3 | 2.2 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2018 Total** | **30.9** | **94.5** | **124.1** | **3.4** | **3.3** |
| **2019** | | | | | |
| Land-based construction emissions | 7.9 | 83.5 | 158.1 | 3.2 | 3.0 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2019 Total** | **33.6** | **121.5** | **195.2** | **4.4** | **4.1** |
| **2020** | | | | | |
| Land-based construction emissions | 4.3 | 62.9 | 39.8 | 1.9 | 1.8 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2020 Total** | **30.0** | **100.9** | **76.9** | **3.0** | **2.9** |
| **2021** | | | | | |
| Land-based construction emissions | 2.0 | 31.6 | 18.2 | 0.8 | 0.8 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2021 Total** | **27.7** | **69.7** | **55.3** | **1.9** | **1.9** |
| **Worst-Case Combined Yearly Maximum for Overlapping Phases (2019)** | | | | | |
| 2019 | 33.6 | 121.5 | 195.2 | 4.4 | 4.1 |
| FRAQMD threshold (lbs/day) | 25 | 25 | NA | 80 | NA |
| Exceedance of threshold? | Yes | Yes | NA | No | NA |

[1] While land-based equipment from phases 1, 2, and 3 may sometimes overlap, there will be no more than 3 helicopters operating on any given day. Helicopter emissions in this table are therefore not described by which phase they are working on.

CO = carbon monoxide

lbs = pounds

$NO_X$ = nitrogen oxides

PM = particulate matter

ROG = reactive organic gases

**Table 3.3-9: Construction-Related Emissions within BCAQMD's Jurisdiction (Mitigated Without Off-site Mitigation)**

| Year/Phase | ROG (lbs/day) | $NO_X$ (lbs/day) | CO (lbs/day) | PM10 Total (lbs/day) | PM2.5 Total (lbs/day) |
|---|---|---|---|---|---|
| **2018** | | | | | |
| Land-based construction emissions | 1.4 | 10.8 | 23.6 | 0.5 | 0.4 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2018 Total** | 27.1 | 48.9 | 60.7 | 1.6 | 1.5 |
| **2019** | | | | | |
| Land-based construction emissions | 2.1 | 16.5 | 43.0 | 0.7 | 0.6 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2019 Total** | 27.8 | 54.6 | 80.0 | 1.8 | 1.7 |
| **2020** | | | | | |
| Land-based construction emissions | 1.2 | 13.2 | 10.8 | 0.4 | 0.4 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2020 Total** | 26.9 | 51.2 | 47.9 | 1.5 | 1.5 |
| **2021** | | | | | |
| Land-based construction emissions | 0.5 | 6.9 | 5.0 | 0.2 | 0.2 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2021 Total** | 26.2 | 45.0 | 42.0 | 1.3 | 1.3 |
| **Worst-Case Combined Yearly Maximum for Overlapping Phases (2019)** | | | | | |
| 2019 | 27.8 | 54.6 | 80.0 | 1.8 | 1.7 |
| BCAQMD threshold (lbs/day) | 137 | 137 | NA | 80 | NA |
| Exceedance of threshold? | No | No | NA | No | NA |

[1] While land-based equipment from phases 1, 2, and 3 may sometimes overlap, there will be no more than 3 helicopters operating on any given day. Helicopter emissions in this table are therefore not described by which phase they are working on.

lbs = pounds

$NO_X$ = nitrogen oxides

PM = particulate matter

ROG = reactive organic gases

**Table 3.3-10: Construction-Related Emissions within FRAQMD's Jurisdiction (Mitigated Without Off-site Mitigation)**

| Year/Phase | ROG (lbs/day) | $NO_X$ (lbs/day) | CO (lbs/day) | PM10 Total (lbs/day) | PM2.5 Total (lbs/day) |
|---|---|---|---|---|---|
| **2018** | | | | | |
| Land-based construction emissions | 5.2 | 39.7 | 87.0 | 1.8 | 1.6 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2018 Total** | 30.9 | 77.8 | 124.1 | 2.9 | 2.7 |
| **2019** | | | | | |
| Land-based construction emissions | 7.9 | 60.7 | 158.1 | 2.5 | 2.3 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2019 Total** | 33.6 | 98.8 | 195.2 | 3.6 | 3.4 |
| **2020** | | | | | |
| Land-based construction emissions | 4.3 | 48.4 | 39.8 | 1.5 | 1.4 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2020 Total** | 30.0 | 86.5 | 76.9 | 2.6 | 2.5 |
| **2021** | | | | | |
| Land-based construction emissions | 2.0 | 25.5 | 18.2 | 0.6 | 0.6 |
| Helicopter emissions | 25.7 | 38.1 | 37.1 | 1.1 | 1.1 |
| **2021 Total** | 27.7 | 63.5 | 55.3 | 1.7 | 1.7 |
| **Worst-Case Combined Yearly Maximum for Overlapping Phases (2019)** | | | | | |
| 2019 | 33.6 | 98.8 | 195.2 | 3.6 | 3.4 |
| FRAQMD threshold (lbs/day) | 25 | 25 | NA | 80 | NA |
| Exceedance of threshold? | Yes | Yes | NA | No | NA |

[1] While land-based equipment from phases 1, 2 and 3 may sometimes overlap, there will be no more than 3 helicopters operating on any given day. Helicopter emissions in this table are therefore not described by which phase they are working on.

lbs = pounds

$NO_X$ = nitrogen oxides

PM = particulate matter

ROG = reactive organic gases

**Table 3.3-11: Annual Construction-Related Emissions within FRAQMD's Jurisdiction (Mitigated)**

| Year/Phase | ROG (tons/year) | $NO_X$ (tons/year) | CO (tons/year) | PM10 Total (tons/year) | PM2.5 Total (tons/year) |
|---|---|---|---|---|---|
| **2018** | | | | | |
| Land-based construction emissions | 0.2 | 1.6 | 2.2 | 0.06 | 0.06 |
| Helicopter emissions | 1.13 | 1.67 | 1.63 | 0.05 | 0.05 |
| **2018 Total** | **1.3** | **3.2** | **3.8** | **0.1** | **0.1** |
| **2019** | | | | | |
| Land-based construction emissions | 0.3 | 2.6 | 3.7 | 0.1 | 0.1 |
| Helicopter emissions | 2.26 | 3.35 | 3.26 | 0.1 | 0.1 |
| **2019 Total** | **2.6** | **5.9** | **6.9** | **0.2** | **0.2** |
| **2020** | | | | | |
| Land-based construction emissions | 0.1 | 1.5 | 1.3 | 0.0 | 0.0 |
| Helicopter emissions | 1.70 | 2.51 | 2.45 | 0.0 | 0.1 |
| **2020 Total** | **1.8** | **4.0** | **3.7** | 0.0 | 0.1 |
| **2021** | | | | | |
| Land-based construction emissions | 0.0 | 0.4 | 0.3 | 0.0 | 0.0 |
| Helicopter emissions | 0.37 | 0.55 | 0.54 | 0.00 | 0.02 |
| **2021 Total** | **0.4** | **1.0** | **0.9** | **0.0** | **0.0** |
| **Worst-Case Combined Yearly Maximum for Overlapping Phases (2019)** | | | | | |
| 2019 | **2.6** | **5.9** | **6.9** | **0.0** | **0.2** |
| FRAQMD significance threshold (tons/year) | 4.5 | 4.5 | NA | NA | NA |
| Amount of required offsets | - | 1.4 | - | - | - |
| Exceedance of threshold? | No | No[2] | NA | No | NA |

[1] While land-based equipment from phases 1, 2, and 3 may sometimes overlap, there will be no more than 3 helicopters operating on any given day. Helicopter emissions in this table are therefore not described by which phase they are working on.

[2] With incorporation of APM AQ-3, 1.4 tons will be offset to reduce emissions from 5.9 tons/year to FRAQMD's 4.5 ton/year significance threshold.

$NO_X$ = nitrogen oxides
ROG = reactive organic gases
PM = particulate matter
lbs = pounds

**b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? *Less than Significant with Mitigation***

As indicated in Table 3.3-4, the project area is currently designated as nonattainment for state and federal $O_3$, PM10, and PM2.5 standards. However, the project will not cause emissions to exceed the CAAQS or the NAAQS, or contribute substantially to any existing or project-related air quality violations for $O_3$ and PM10. With implementation of APM AQ-1 and APM AQ-2, the project will meet BCAQMD's air quality CEQA thresholds of significance, but not FRAQMD's, as described above under section (a). With the implementation of APM AQ-3, which requires the purchase of offsets to reduce emissions in FRAQMD, the project emissions will be reduced to a less than significant level with mitigation.

With the incorporation of the APMs AQ-1 through AQ-3, the project will not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, impacts will be less than significant with mitigation incorporated.

**c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? *Less than Significant***

As indicated in Tables 3.3-7 through 3.3-10, construction activities associated with the project will lead to a temporary increase in criteria air pollutants. As discussed in detail in section (a), PG&E will implement APM AQ-1 through APM AQ-3 and APM GHG-1 to reduce construction-related emissions. With implementation of these APMs, the project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment, and accordingly, impacts will be less than significant.

**d) Would the project expose sensitive receptors to substantial pollutant concentrations? *Less than Significant***

In some locations, residences and other sensitive receptors are located adjacent to the proposed alignment. However, most of the project alignment is located in rural agricultural areas with no sensitive receptors. Helicopter landing zones have been located to avoid residential properties. Any residences located in the vicinity of a helicopter landing zone may be subject to increased dust during helicopter take-offs and landings, but landings will be brief and dust effects will be localized. Moreover, helicopter activities will be infrequent (only used where limited access or local terrain conditions prohibit ground-based crews and equipment from doing the work, or during conductor installation and removal) and will only occur for a period of approximately 30 non-consecutive days in dispersed locations during the 8 months of construction. In addition, the implementation of APM AQ-1, APM AQ-2 and APM GHG-1 will control fugitive dust in the area. As a result, impacts on the residences from fugitive dust will be less than significant.

Because of the linear nature of the project, construction activities will be spread across the approximately 59.5-mile alignment, lasting only a few days at each pole. Implementation of APM AQ-1 through APM AQ-3 and APM GHG-1, Minimize GHG Emissions, which include controlling fugitive dust and reducing idling time, will reduce exposures to sensitive receptors. With implementation of these APMs, impacts on sensitive receptors will be less than significant.

**e) Would the project create objectionable odors affecting a substantial number of people?**
***Less than Significant***

Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. Project construction will not be a significant source of these pollutants. An additional potential source of project-related odor is diesel engine emissions. Residences are located adjacent to the project alignment. However, because few sources of odor will exist and construction will be short term, lasting a few days at each pole, impacts from odor will be less than significant.

## 3.3.5 REFERENCES

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#### 3.3.5.1 Personal Communications

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# 3.4 BIOLOGICAL RESOURCES

## 3.4.1 INTRODUCTION

This section describes biological resources (vegetation, fish, wildlife, and wetlands) in the project area, identifies potential impacts on sensitive habitats and species that could result from the implementation of the project, and concludes that impacts on biological resources will be less than significant with incorporation of the APMs described in Section 3.4.4. The project's potential effects on biological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.4-1 and are discussed in more detail in Section 3.4.4.

**Table 3.4-1: CEQA Checklist for Biological Resources**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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 Wildlife or the 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, regulations, or by the California Department of Fish and Wildlife 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? | ☐ | ☐ | ☐ | ☒ |

## 3.4.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.4.2.1 Regulatory Background

This section provides an overview of the laws and regulations that influence the management of biological resources in the project area. Although many of these regulations will not apply to the project if the resources in question are avoided, they are discussed here to provide context for determining which biological resources are considered *sensitive* for the purposes of this report and to discuss potential project-related effects.

#### *Federal*

##### *Endangered Species Act*

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). Section 9 of the ESA prohibits the "take" of listed fish and wildlife, where *take* is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant *under federal jurisdiction* and removing, cutting, digging-up, damaging, or destroying any listed plant in knowing violation of state law (16 United States Code [USC] 1538).

The ESA allows for issuance of incidental take permits to private parties either in conjunction with a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation (which is discussed in the following paragraph). Under Section 10 of the ESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the project area, identifying impacts on the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts.

Under Section 7 of the ESA, federal agencies are required to consult with USFWS and/or NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the project is likely to adversely affect a species, the federal agency will initiate formal consultation with the USFWS and/or NOAA Fisheries and issue a biological opinion (BO) as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the BO, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

##### *Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711) protects all migratory birds, including active nests and eggs. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example

feathers and plumes), active nests, and eggs. A complete list of protected species can be found in 50 CFR 10.13. Enforcement of the provisions of the federal MBTA is the responsibility of USFWS.

#### *Bald and Golden Eagle Protection Act*

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

#### *Waters and Wetlands: Clean Water Act Sections 401 and 404*

The purpose of the Clean Water Act (33 USC Section 1251 et seq.) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Waters of the United States include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3).

The U.S. Environmental Protection Agency (US EPA) and U.S. Army Corps of Engineers (USACE) have recently released a new rule that would revise this definition and clarify which bodies of water are covered by the Clean Water Act. However, on October 9, 2015, the U.S. Court of Appeals for the 6th Circuit granted a nationwide stay on the rule, and the previous interpretations and guidance remain in effect until further notice.

The USACE issues permits for work in wetlands and other waters of the United States based on guidelines established under Section 404 of the Clean Water Act. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from USACE. The US EPA also has authority over wetlands and may, under Section 404(c), veto a USACE permit.

Section 401 of the Clean Water Act requires all Section 404 permit actions to obtain a state Water Quality Certification or waiver, as described in more detail in Section 3.9, Hydrology and Water Quality.

### ***State***

#### *California Endangered Species Act*

Sections 2050–2098 of the California Fish and Game Code (the California Endangered Species Act [CESA]) prohibit the take of state-listed endangered and threatened species unless specifically authorized by the California Department of Fish and Wildlife [CDFW]). The state definition of *take* is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of CESA, or through a consistency determination issued under section 2080.1. Section 2090 of CESA requires state agencies to comply with

threatened and endangered species protection and recovery and to promote conservation of these species.

### Fully Protected Species Under the Fish and Game Code

Fish and Game Code designates certain fish and wildlife species as "fully protected" under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time, and no permits may be issued to PG&E for incidental take of these species. [1]

#### *Protection for Birds Under the Fish and Game Code*

Fish and Game Code Section 3503 et seq. state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird.

#### *Lake and Streambed Alteration Agreement Under the Fish and Game Code*

In addition to listed and special-status species, CDFW regulates activities under California Fish and Game Code Sections 1600–1616 that require a streambed alteration agreement permit. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following:

- Substantially divert or obstruct the natural flow of any river, stream, or lake.
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake.
- Deposit debris, waste, or other materials that could pass into any river, stream, or lake.

#### *Native Plant Protection Act of 1977*

The Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code Sections 1900–1913) includes provisions that prohibit the taking of the 64 plants protected as rare native plants under NPPA, which is administered by CDFW.

Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way (ROW) to allow a public utility to fulfill its obligation to provide service to the public.

#### *California Rare Plant Rank*

CDFW, jointly with the California Native Plant Society (CNPS), assigns a California Rare Plant Rank (CRPR) to plants considered rare, threatened, or endangered in California. All of the plants constituting CRPRs 1A, 1B, 2A, and 2B meet the definitions of CESA and are eligible for state listing. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance and would be affected by a project.

[1] While take of fully protected species may be authorized by CDFW under a Natural Communities Conservation Plan (NCCP), PG&E activities are not covered by an NCCP so this permitting option is not available.

#### *California Species of Special Concern*

Species of Special Concern (SSC) is a category conferred by CDFW to fish and wildlife species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special-status" for the purposes of the CEQA analysis (see Section 3.4.4.1, Significance Criteria).

#### *Porter-Cologne Water Quality Control Act*

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the state, as described in more detail in Section 3.9, Hydrology and Water Quality.

### *Local*

This section includes a summary of local or regional plans, policies, or regulations that identify sensitive or special-status species in the project area, as well as local polices or ordinances that protect biological resources. Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations related to biological resources. The following summary is provided for informational purposes and to assist with CEQA review.

#### *Butte County*

Several conservation goals and policies identified in Chapter 10, Conservation and Open Space, of the *Butte County General Plan 2030* (Butte County 2013) apply to biological resources in the project area. The chapter describes biological habitat in the county that supports wildlife species, and associated protection policies. High mountain areas and lower foothills provide habitat for deer; marshes and stream vegetation support waterfowl, game birds, and small animals; and Lake Oroville and the county's larger streams are valuable habitat for trout, salmon, bass, and other game fish. Special-status plant and wildlife species are known to occur in the county, as are several rare or endangered plants and animals. The chapter includes the following goals to protect and manage biological resources:

- Conserve and enhance habitat for protected species and sensitive biological communities.
- Maintain and promote native vegetation, including the avoidance of invasive plant introduction and spread.
- Identify and protect, where feasible, fish and wildlife habitat including: lower foothills that provide habitat for deer; marsh areas and stream vegetation that support waterfowl, game birds, and small animals; and the county's larger streams that are valuable habitat for trout, salmon, bass, and other game fish.

- Protect identified special-status plant and animal species. This includes construction barrier fencing around sensitive resources on or adjacent to construction sites, environmental training of construction staff by a qualified biologist, and construction monitoring by a qualified biologist when construction is taking place near the habitat of a protected species.

### *Sutter County*

Sutter County's General Plan vision is to preserve and protect its significant natural assets. These assets include the wetland and riparian habitats, wildlife and vegetation, and unique natural open-space land and water resources, including the corridors of the Sacramento, Feather, and Bear Rivers. Chapter 9, Environmental Resources, of the *Sutter County 2030 General Plan* (Sutter County 2011) specifically addresses the county's biological resources and wildlife habitat and includes the following goals to preserve and protect its significant natural assets:

- Support a comprehensive approach for the conservation, enhancement, and regulation of Sutter County's significant habitat and natural open-space resources. This should focus on areas that have very high and high habitat value.

- Conserve, protect, and enhance Sutter County's significant natural wetland and riparian habitats.

- Conserve, protect, and enhance Sutter County's varied wildlife and vegetation resources. This includes, where feasible, preserving special-status fish, wildlife, and plant species (e.g., rare, threatened, or endangered species), supporting the preservation and re-establishment of fisheries in the rivers and streams within Sutter County, preserving and protecting waterfowl resources, preserving important areas of natural vegetation, and preserving native oak trees.

- Conserve, protect, and enhance Sutter County's unique natural open-space lands and resources. This entails, where feasible, preserving and enhancing wildlife movement corridors and contiguous habitat areas, and preserving natural landforms, natural vegetation, and natural resources.

### *Yuba County*

The *Yuba County General Plan 2030* (adopted June 7, 2011) (Yuba County 2011) provides goals, objectives, and policies that apply to biological resources in the project area. Chapter 7, Natural Resources, addresses issues related to natural resources, including protecting rural landscapes and natural resource areas. Provisions in the Yuba County General Plan provide for the protection of resident and migratory deer herds and management of winter and critical winter range (i.e., portions of the winter range in the county that are considered critical to the survival of the migratory deer herds during severe winter conditions) (Yuba County 2011). Many of the specific goals relating to biological resources apply to new development and therefore would not apply to this project even if it were within County jurisdiction.

### *City of Marysville General Plan*

Section B, Open Space, Conservation, and Recreation Element, of the *City of Marysville General Plan* applies portions of the project area located within the City of Marysville. The goal in Section B that applies to biological resources in the project area is to designate, protect, and conserve the

natural resources, open space, and recreation lands in the city; and provide opportunities for recreation activities to meet citizen needs (City of Marysville 1985). The policies associated with this goal 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.

#### 3.4.2.2 Methodology

This section summarizes the methods used to identify and analyze potential impacts on special-status species that may occur in the project area. As described below, biologists began their research with database searches and literature reviews to determine which special-status plants, natural communities, and wildlife might have potential to occur in the project area. The *project area* is defined in this document to include the entire project footprint for construction. The *survey area* as used in this document comprises all areas surveyed for biological resources, which includes an area outside of the project footprint. Using this information, the biologists conducted detailed field surveys of the biological resources survey area, as defined below.

##### *Species Considered to be of Special-Status*

*Special-status species* include those that are:

- Listed or candidates for listing as rare, threatened, or endangered under the federal ESA or CESA.
- Plants included in CDFW's Special Plants List (CDFW 2016a) and the online version of the CNPS Inventory of Rare and Endangered Plants of California as CRPR 1A, 1B, 2A, or 2B.
- Species listed by Bureau of Land Management (BLM), U.S. Forest Service (USFS), National Parks Service, or other land management agency as having special local consideration (e.g., management indicator species).
- Fish or wildlife designated as an SSC or a fully protected species by the CDFW.
- Migratory birds with active nests, defined as containing eggs or dependent young.

Natural communities were considered to be special-status if they were identified on the most recent CDFW *Natural Communities Lists: List of Vegetation Alliances and Associations* (List of Vegetation Alliances and Associations) as being highly imperiled (CDFG 2010).

##### *Database Searches*

The following biological databases were queried for records of special-status plants, natural communities, and wildlife that might have potential to occur within 10 miles of the project area:

- USFWS Information for Planning and Conservation (IPaC) site of federally listed and proposed endangered, threatened, and candidate species and their designated critical habitat.

- CNPS online Inventory of Rare and Endangered Vascular Plants of California.
- California Natural Diversity Database (CNDDB).

A CNDDB database search for special-status species typically includes nine U.S. Geological Survey (USGS) 7.5-minute quadrangle maps for a project located within a single quadrangle—the quadrangle that covers the project area, and the eight quadrangles that surround the project quadrangle. However, because the project area is relatively large (i.e., it spans eight USGS 7.5-minute quadrangles [Palermo, Honcut, Yuba City, Sutter, Olivehurst, Gilsizer Slough, Nicolaus, and Sheridan]), the CNDDB records search included the 24 surrounding USGS 7.5-minute quadrangles: Shippee, Oroville Dam, Biggs, Bangor, Gridley, Loma Rica, Sutter Buttes, Browns Valley, Camp Far West, Forbestown, Lincoln, Oregon House, Oroville, Pennington, Roseville, Smartville, Taylor Monument, Tisdale Weir, West of Biggs, Wheatland, Sutter Causeway, Knights Landing, Verona, and Pleasant Grove (CDFW 2016b).

The USFWS IPaC online database was queried for Butte, Yuba, and Sutter Counties, and the Palermo, Honcut, Sutter, Yuba City, Olivehurst, Gilsizer Slough, Nicolaus, and Sheridan USGS 7.5-minute quadrangles (USFWS 2015a).

Other information sources consulted to determine which special-status species could potentially occur in the project area included:

- CNPS's online Inventory of Rare and Endangered Plants of California for the Palermo, Honcut, Sutter, Yuba City, Olivehurst, Gilsizer Slough, Nicolaus, and Sheridan USGS 7.5-minute quadrangles and the 24 surrounding quadrangles (CNPS 2016).
- CDFW's April 2016 Special Animals List (CDFW 2016c).
- CDFW's April 2016 Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2016a).
- Biological Resources Constraints Analysis for the PG&E Palermo–Pease Tower Replacement Project (ICF 2009a).
- A previous biological constraints analysis of the project area completed for the PG&E Palermo–East Nicolaus 115 kV Transmission Line Project (ICF 2009b).
- Soil maps (Natural Resources Conservation Service 2015).
- CDFW's List of Vegetation Alliances and Associations (CDFG 2010).
- A Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009).
- eBird, an online database of bird distribution and abundance (eBird 2015).
- Aerial photographs.
- Jepson Manual: Vascular Plants of California, 2nd edition (Baldwin et al. 2012).

- Final Western Pacific Interceptor Canal wetland delineation (Three Rivers Levee Improvement Authority [TRLIA] 2015).

### *Vegetation and Land Cover Mapping*

Aerial photograph interpretation and field verifications were completed and used to describe and map vegetation and land cover types occurring within 250 feet of the existing power line, work areas, and proposed access roads (the survey area) (ICF 2015). The purpose of the mapping effort was to identify the locations of sensitive biological resources and to support preliminary project constraints analyses. Biologists completed most of the vegetation and land cover mapping by reviewing aerial imagery and by collecting data during reconnaissance-level and wetland delineation surveys between September 2015 and December 2015. Analyses of vegetation and land cover types in portions of the survey area were also based on data collected during scoping surveys for aquatic resources and giant garter snake (GGS) (*Thamnophis gigas*) habitat in 2014 and 2015 (PG&E 2014, 2015). Vegetation and land cover type data collected between 2005 and 2009 in support of the PG&E Palermo–East Nicolaus 115 kV Transmission Line Project, which parallels the north-south portion of the project area, were also incorporated and updated where the mapping areas overlapped. Land cover data collected in 2009 in support of the PG&E Palermo–Pease Tower Replacement Project were reviewed for information relevant to the project (ICF 2009b).

Most of the vegetation community types that were mapped for the Palermo–East Nicolaus 115 kV Transmission Line Project were present and identifiable in the current project area, particularly when previously mapped vegetation communities were contiguous with unmapped vegetation of the same aerial signature. Mapping updates were completed by interpretation of current aerial photographs and field verification, and compiled using ESRI ArcGIS software. Vegetation communities observed in the project area were categorized primarily according to CDFG's 2010 List of Natural Communities Recognized by the CNDDB (CDFG 2010). Preliminary maps of potential wetlands and other waters also were prepared in 2015 to assist PG&E with project planning prior to the wetland delineation (described below under *Wetlands and Other Waters*).

#### *Field Surveys*

PG&E's consulting biological team consisted of wildlife biologists, botanists, and wetland ecologists. Prior to conducting the 2015 surveys, the biologists reviewed previous surveys in the project area. Where relevant, the data collected for the PG&E Palermo–East Nicolaus 115 kV Transmission Line Project and the Palermo–Pease Tower Replacement Project were used for this preliminary environmental assessment. Surveys for the Palermo–East Nicolaus project area were completed between 2005 and 2009. These survey areas overlapped the north-south portion of the project area (see Figure 2.3-1, South of Palermo Line), except for a small area around the South of Palermo Line project towers. Surveys for the Palermo–Pease Tower Replacement Project, which overlaps with one of the east-west portion of the project area (see Figure 2.3-1, Pease Sub Line Segment), were conducted in May 2009. In October and November 2014, biologists conducted field surveys for wetlands and other aquatic features, including GGS habitat, for the entire project area (PG&E 2014a, 2014b, 2014c, 2014d).

Biologists conducted biological resource surveys by driving, walking, and scanning the survey area using binoculars and spotting scopes. Field surveys were conducted in September, October, November, and December 2015. All areas except for a few isolated segments (e.g., backyards of private residences with livestock, aggressive dogs, or gates locked with a non-PG&E lock) of the power line ROW were accessible for the surveys. At those locations where direct access was limited, the power line ROW was surveyed by walking along the closest fence line, public road, or agricultural field, and scanned from more than one public ROW with line-of-sight of work areas and tower replacement locations.

The biological resources survey area (survey area) included a 250-foot-wide corridor centered on the power line ROW following the entire project alignment. In addition, the survey area encompassed pull and tensioning sites, staging areas, access roads, material laydown areas, and helicopter landing zones. Biologists surveyed all relevant non-developed areas in the survey area. Cross-country and native surface access routes were also covered in the biological surveys, including a 25-foot buffer on either side of the road. The specific types of project surveys are described below.

### *Reconnaissance and Habitat Assessment Surveys*

General biological reconnaissance surveys entailed walking and meandering transects in the biological resources survey area (as defined previously), and surveying areas that appeared to support special-status fauna and flora as identified in desktop-level reviews. The following tasks were conducted during the reconnaissance-level surveys:

- Biologists identified vegetation communities and habitat types in the biological resources survey area and evaluated them for suitability for special-status plant and wildlife species and made revisions to the previous vegetation and land cover mapping efforts, as necessary. Upland and aquatic features were evaluated for potential to support special-status wildlife species in the project area, including potential habitat for GGS, valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*), yellow-billed cuckoo (*Coccyzus americanus*), and nesting raptors.

- In December 2015, wildlife biologists conducted a field walk of the survey area to determine the extent of branchiopod habitat in the survey area for scoping and logistic purposes. The features observed were dry at the time of observation; the biologists assessed the preliminary suitability and number of potential vernal pools in the project area. Wildlife biologists conducted a wet-season branchiopod habitat assessment on December 17 and 18, 2015. Surveys were documented using a global positioning system (GPS) receiver with sub-meter accuracy. New features that inundated with increased rainfall through the season were mapped upon discovery. The biologists recorded the presence and location of all potential vernal pools observed and took representative photographs of surveyed habitat features in the survey area.[2]

[2] Note that features determined to be suitable habitat for special-status branchiopods may not possess indicators of all three factors required to meet the definition of a wetland under USACE jurisdiction (e.g., hydrophytic vegetation or hydric soil indicators may be lacking).

- Where suitable habitat was identified during the reconnaissance and wetland delineation surveys, a special-status plants survey will be conducted in spring and early summer prior to construction.

#### *Protocol-Level Surveys*

Protocol surveys are species-specific or other natural resource surveys that follow agency-issued guidelines and determine the presence or absence of these species/resources.

Wildlife biologists conducted presence/absence protocol branchiopod surveys starting in late December 2015 to supplement the results of protocol-level surveys for listed vernal pool invertebrates conducted from 2006 to 2008 for the Palermo–East Nicolaus 115 kV Transmission Line Project. Approximately 40 habitat features (i.e., seasonal wetlands and vernal pools) were sampled using a dip net according to the methods described in the USFWS Guidelines (2015b). The results of these surveys are documented in a survey report that will be provided separately to CPUC staff.

#### *Wetlands and Other Waters*

Aquatic features in the survey area were delineated in accordance with USACE methods by a team of wetland specialists/botanists in September through December 2015. The survey area for the delineation consisted of the same survey area used for field surveys as described above, except that in areas lacking vernal pools and seasonal wetlands, the buffer distance was 200 feet from work areas, instead of 250 feet. The methods used and results are reported in the project's *Draft Aquatic Resources Delineation Report*, which will be provided separately to CPUC staff.

#### *Overlap with Other Delineations*

The project area overlaps with one other project area that has a recently verified jurisdictional determination: the TRLIA Western Pacific Interceptor Canal (WPIC) 200-Year Standard Project. The survey area for this project consists of an approximately 100-acre project area along a 6.3-mile segment of the WPIC to the north of Bear River, which includes the 5.9 mile levee improvement footprint. The wetland delineation for the TRLIA WPIC Project was verified by USACE on February 26, 2016 (USACE file number SPK-2015-00252). The features delineated for the TRLIA WPIC Project have been incorporated into the aquatic resources delineation report for the South of Palermo Line Project. As discussed below, there are wetlands within the TRLIA WPIC Project area that are scheduled to be filled prior to the start of construction of this South of Palermo Line project, and possibly prior to the start of CEQA review. A review of the jurisdictional determination and the WPIC project features indicates that, although work areas for the WPIC project and the South of Palermo Line project will overlap, wetlands that will be filled by the WPIC project are outside of the project footprint of the South of Palermo Line project. (TRLIA 2015).

### *Likelihood of Presence for Special-Status Species*

Using the information generated from literature reviews and field surveys, the list of special-status species with the potential to occur was further refined to reflect the species that may occur within the project area. The likelihood of special-status species occurrence was determined based on natural history parameters, including but not limited to, the species' range, habitat,

foraging needs, migration routes, and reproductive requirements, using the following general categories:

- *Present* – Reconnaissance-level, focused, or protocol-level surveys documented the occurrence or observation of a species in the project area.

- *Seasonally present* – Individuals were observed in the project area only during certain times of the year.

- *Likely to occur (on-site)* – The species has a strong likelihood to be found in the project area prior to or during construction but has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: suitable habitat that meets the life history requirements of the species is present on or near the project area; migration routes or corridors are near or within the project area; records of sighting are documented on or near the project area; and there is an absence of invasive predators (e.g., bullfrogs). The main assumption is that records of occurrence have been documented within or near the project area, the project area falls within the range of the species, suitable habitat is present, but it is undetermined whether the habitat is currently occupied.

- *Potential to occur*: There is a possibility that the species can be found in the project area prior to or during construction, but has not been directly observed to date. The likelihood that a species may occur is based on the following conditions: suitable habitat that meets the life history requirements of the species is present on or near the project area; migration routes or corridors are near or within the project area; and there is an absence of invasive predators (e.g., bullfrogs). The main assumption is that the project area falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near the project area and it is undetermined whether the habitat is currently occupied.

- *Unlikely to occur* – The species is not likely to occur in the project area based on the following considerations: lack of suitable habitat and features that are required to satisfy the life history requirements of the species (e.g., absence of foraging habitat; lack of reproductive areas, and lack of sheltering areas); presence of barriers to migration/dispersal; presence of predators or invasive species that inhibit survival or occupation (e.g., the presence of bullfrogs or invasive fishes); lack of hibernacula, hibernation areas, or estivation areas on-site.

- *Absent* – Suitable habitat does not exist in the project area, the species is restricted to or known to be present only within a specific area outside of the project area, or focused or protocol-level surveys did not detect the species.

## 3.4.3 ENVIRONMENTAL SETTING

### 3.4.3.1 Regional

Most of the project area is in the Sacramento Valley subregion of the California Floristic province in Butte, Sutter, and Yuba Counties; the northernmost portion of the project area is in the transitional area between the Sacramento Valley subregion and the northern Sierra Nevada

foothills subregion (Baldwin et al. 2012). The area was historically an open grassland community with vernal pools, seasonal and emergent wetlands, and intermittent and perennial creeks with riparian and oak woodlands. The climate in the project area consists of hot, dry summers and cool, wet winters. The topography in the project area varies from relatively flat to gently sloping foothills with elevations ranging from 45 feet to 395 feet above mean sea level. The project area crosses three major waterways: the Feather River, Yuba River, and Bear River. Agricultural lands, urban areas, and rural residences are present within and immediately adjacent to the project area; however, the project area also contains expanses of mostly undeveloped areas that support natural vegetation and wetlands.

### *Land Cover, Vegetation, and Wildlife Habitats*

The project area contains upland vegetation and habitat types as well as aquatic (wetland and riparian) vegetation and habitat types. The following habitat types are based on CDFW's List of Vegetation Alliances and Associations (CDFG 2010). Ten upland vegetation and habitat types were observed in the project area: annual grassland, valley oak woodland, interior live oak woodland, foothill pine-oak woodland, urban/developed, rural residential, irrigated pasture, orchard, row crop, and rice. Twelve wetland aquatic habitat types, including wetland and riparian habitats, were observed in the project area: northern hardpan vernal pool, seasonal wetland, agricultural wetland, valley freshwater marsh, willow riparian scrub, mixed riparian forest, natural stream, intermittent stream, irrigation canal, non-vegetated and vegetated ditch, and open water. The following discussion describes each of the vegetation communities and habitat types. Sensitive vegetation communities within 0.5 miles of the project area are shown on Figure 3.4-1.

#### *Upland Resources*

##### *Annual Grassland*

Annual grassland is present throughout the survey area and encompasses a total area of approximately 840 acres. This habitat type is dominated by nonnative annual grass species but also contains a mixture of native and nonnative forbs. Nonnative grassland occurs within the herbaceous understory of other vegetation communities (e.g., valley oak savanna woodland, oak/foothill pine woodland). Dominant nonnative annual grass species observed in the project area were soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), big quaking grass (*Briza maxima*), and medusa-head (*Elymus caput-medusae*). Associate annual grasses observed were foxtail chess (*Bromus madritensis* ssp. *rubens*) and slender wild oat (*Avena barbata*). Annual grasslands contain both native and nonnative forbs. Representative native forbs observed were shining peppergrass (*Lepidium nitidum*), Spanish lotus (*Lotus purshianus*), common fiddleneck (*Amsinckia menziesii* var. *intermedia*), and miniature lupine (*Lupinus bicolor*). Nonnative forbs commonly observed were black mustard (*Brassica nigra*), yellow star-thistle (*Centaurea solstitialis*), bristly oxtongue (*Helminthotheca echioides*), filaree (*Erodium* spp.), and crane'sbill geranium (*Geranium molle*).

##### *Valley Oak Woodland*

Valley oak woodland is a common woodland vegetation community in the survey area and is one of the most important habitats for wildlife in California. This habitat type supports a variety of common and special-status wildlife, including resident and migratory deer herds. Valley oak

woodland in the project area is characterized by a relatively open canopy dominated by mature valley oaks (*Quercus lobata*). Other tree species that were observed in valley oak woodland were interior live oak (*Q. wislizeni*) and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*). Representative species observed in the understory layer of this habitat type were Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis pilularis*), and plants also characteristic of nonnative grassland. Approximately 24 acres of this habitat type are found within the survey area.

### *Interior Live Oak Woodland*

Interior live oak woodland community in the survey area occurs in the northern portions. Approximately 3 acres of this habitat type occurs within the survey area. Interior live oak woodland exhibits a relatively open canopy that is dominated by interior live oak but also contains scattered blue oak (*Q. douglasii*) and foothill pine (*Pinus sabiniana*). Interior live oak woodland has a sparse herbaceous understory of nonnative grassland vegetation, and the shrub layer contains coyote brush, common manzanita (*Arctostaphylos manzanita*), and whiteleaf manzanita (*A. viscida*).

### *Foothill Pine-Oak Woodland*

Foothill pine-oak woodland distribution is limited to approximately 44 acres in the northernmost portion of the survey area. Foothill pine is the dominant species in the tree overstory, but blue oak and interior live oak are also present. The shrub layer and herbaceous understory of foothill pine-oak woodland are comparable to those observed in interior live oak woodland.

### *Urban/Developed*

Urban/developed portions of the survey area consist of the towns of Palermo, Yuba City, Linda, and Olivehurst. Urban habitat includes industrial and commercial areas surrounding these towns (e.g., grocery store and parking lots), public ROWs and road medians, urban parks, schools, and golf courses. Urban habitat encompasses approximately 433 acres within the survey area. The density of urban/developed areas varies from low to high density. Vegetation within urban habitat primarily consists of nonnative or ornamental trees and shrubs used for landscaping, including crepe myrtle (*Lagerstroemia indica*), Chinese pistache (*Pistacia chinensis*), mulberry (*Morus alba*), ornamental plum (*Prunus* sp.), ornamental pear (*Pyrus* sp.), and oleander (*Nerium oleander*). Urban vegetation also includes native tree species such as oaks (*Quercus* spp.) and willows (*Salix* spp.). Developed areas also contain ruderal vegetation consisting of weedy species, such as mustard (*Brassica* spp.), yellow star-thistle, and thistle (*Cirsium* sp.) that thrive in disturbed areas.

### *Rural Residential*

Rural residential areas are scattered throughout the survey area and are found on the outskirts of urban/developed areas. There are approximately 66 acres of rural residential habitat within the survey area. Vegetation within rural residential habitat is variable and includes a mixture of native vegetation and ornamental species.

### *Orchard*

Orchards are common throughout the survey area and encompass approximately 548 acres. This habitat type consist mainly of English walnuts (*Juglans regia*), stone fruit (almonds, peaches,

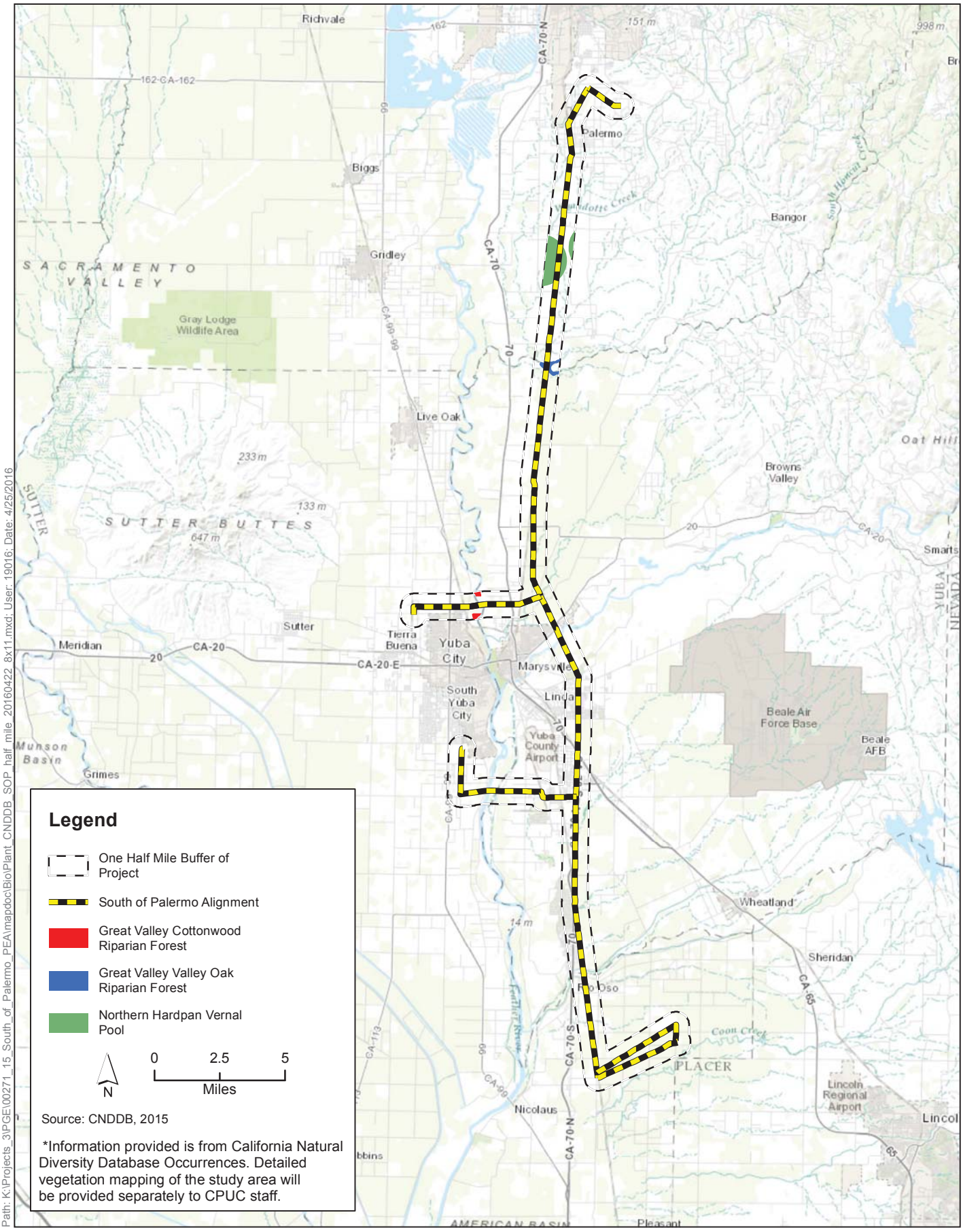



**Figure 3.4-1**
**Sensitive Vegetation Communities within the Study Area**
South of Palermo 115 kV Power Line Reinforcement Project

and plums [*Prunus* spp.]), olives (*Olea* spp.), and kiwi fruit (*Actinidia chinenesis*). Due to recurring vegetation management practices, the orchard understory is typically limited to patches of nonnative annual grasses and herbaceous species found in the nonnative grassland community, or is completely devoid of vegetation.

#### *Row Crop*

Row crops are scattered throughout the central portion of the survey area and cover approximately 86 acres. Row crops typically consist of alfalfa (*Medicago sativa*), barley (*Hordeum* sp.), wheat (*Triticum aestivum*), and corn (*Zea mays*). The condition of these fields during the 2015 field surveys varied from recently planted to fallow with remnants of the season's crops.

#### *Rice*

Active and fallow rice fields are scattered within the middle and southern portions of the survey area and are discussed under the Wetlands and Aquatic Resources section below.

### *Wetlands and Aquatic Resources*

The project's *Draft Aquatic Resources Delineation* identified approximately 939 acres of potential jurisdictional waters of the United States within the project area, consisting of approximately 895 acres of wetlands and approximately 44 acres of other waters (PG&E 2016). These results are preliminary and subject to verification by the Sacramento District of the USACE.

#### *Northern Hardpan Vernal Pool*

Approximately 15 acres of northern hardpan vernal pools occur in the survey area. Vernal pools are typically inundated only during the winter and spring and are characterized by the presence of a restrictive layer (i.e., hardpan) that perches the water table and prevents rainwater from percolating downward. The hardpan layer creates a unique aquatic environment during the winter and spring months that favors the germination of native vernal pool plants and restricts establishment of many of the nonnative grasses common in uplands surrounding vernal pools. Species commonly observed in vernal pools in the survey area were coyote thistle (*Eryngium castrense*), popcorn-flower (*Plagiobothrys* spp.), dwarf woolly marbles (*Psilocarphus brevissimus*), and Carter's buttercup (*Ranunculus bonariensis*).

#### *Seasonal Wetland*

Seasonal wetlands, which occur within areas of nonnative grassland in the survey area, encompass approximately 60 acres. Seasonal wetlands differ from vernal pools and vernal swales in their floristic composition, and in some cases, their hydrology. Seasonal wetlands typically lack a restrictive layer, such as a hardpan or claypan; therefore, the hydrologic regime in these features is dominated by long periods of saturated soil conditions rather than inundation. The plants growing in these features are adapted to withstand long periods of saturation, but not prolonged periods of inundation during the winter and spring months. Seasonal wetlands often occur in disturbed areas, such as along roads or railroad tracks. Typical species observed in seasonal wetlands were perennial ryegrass (*Festuca perennis*), iris-leaved rush (*Juncus xiphioides*), creeping spikerush (*Eleocharis macrostachya*), Bermuda grass (*Cynodon dactylon*), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*).

### *Agricultural Wetlands*

Agricultural wetlands are actively farmed fields that exhibit positive indicators for all three wetland parameters (i.e., vegetation, hydrology, and soils). All active rice fields were mapped as agricultural wetlands because they had hydrophytic vegetation (primarily rice, *Oryza sativa*), hydric soils (exhibiting the hydric soil indicator of a depleted matrix), and evidence of wetland hydrology (i.e., aquatic invertebrates, biotic crust, high water table, and surface saturation). They encompass approximately 700 acres, which represents 79 percent of the wetlands (and 75 percent of the waters of the United States) delineated in the survey area.

### *Irrigated Pasture*

Irrigated pasture encompasses approximately 1.5 acres mapped at one location on the Rio Oso Sub Line Loop. Irrigated pasture is used for livestock grazing, and is actively maintained and irrigated to provide a constant supply of pasture grasses such as dallisgrass (*Paspalum dilatatum*), orchard grass (*Dactylis glomerata*), and perennial ryegrass.

### *Valley Freshwater Marsh*

Valley freshwater marsh encompasses approximately 75 acres within the survey area and was typically associated with perennially inundated areas. Characteristic species observed in valley freshwater marsh in the project area were cattails (*Typha* spp.), tules and bulrushes (*Schoenoplectus* spp.), sedges (*Carex* spp.), nutsedges (*Cyperus* spp.), and rushes (*Juncus* spp.).

### *Willow Riparian Scrub*

Willow riparian scrub encompasses approximately 0.2 acres within the survey area and is associated with agricultural canals. This vegetation community is dominated by sandbar willow (*Salix exigua*), arroyo willow (*S. lasiolepis*), and Himalayan blackberry. The herbaceous understory of riparian scrub consists of sparse nonnative grassland.

### *Mixed Riparian Forest*

Mixed riparian forest occurs in the project area primarily along Honcut Creeks and various intermittent streams. This community type, which encompasses approximately 0.5 acre, consists of a well-developed overstory of mature trees, a shrub layer, and an herbaceous understory. Species observed in the overstory of this community in the project area were Fremont cottonwood, valley oak, and black willow (*Salix gooddingii*). Representative shrubs observed were blue elderberry (*Sambucus nigra* ssp. *caerulea*) and Himalayan blackberry. Sparse nonnative grassland comprises the herbaceous understory of Great Valley mixed riparian forest. Riparian forest types dominated by Fremont cottonwood, valley oak, or black willow are considered highly imperiled by CDFW (CDFG 2010). Mixed riparian habitat is used by a variety of common and special-status wildlife, including resident and migratory deer herds.

### *Intermittent Stream*

Intermittent streams encompass approximately 5 acres within the survey area. These features include natural drainages that convey waters intermittently during the late fall, winter, and spring months, but are usually dry between the late spring and early fall months. Intermittent streams in the project area may or may not be vegetated, and during the period of flow, the water velocity is sufficient to scour a channel into the landscape and often removes unstable vegetation.

Hydrology is also influenced by precipitation and groundwater discharge. Upland plant species sometimes colonize these features during the summer when no water is present.

#### *Irrigation Canal*

Irrigation canals in the survey area encompass approximately 3 acres and consist of constructed, concrete-lined ditches that exhibit positive indicators of wetland hydrology but lack hydrophytic vegetation and hydric soils due to their concrete lining.

#### *Non-Vegetated Ditch*

Non-vegetated ditches in the survey area consist of constructed ditches that exhibit positive indicators of wetland hydrology and hydric soils (e.g., evidence of frequent flooding for long duration) but lack hydrophytic vegetation because of the scouring action of flowing water or because of farming maintenance activities. Approximately 0.5 acre was mapped within the survey area, most of which was located in the central and southern portions of the project area.

#### *Vegetated Ditch*

Features determined to be vegetated ditches generally consist of constructed ditches that exhibit positive indicators for all three federal wetland criteria (i.e., hydrophytic vegetation, wetland hydrology, and hydric soils). These features are mainly located in the central and southern portions of the project area and were typically dominated by obligate wetland plants such as parrot-feather (*Myriophyllum aquaticum*), narrowleaf cattail (*Typha angustifolia*), water primrose (*Ludwigia hexapetala*), and bulrush. Approximately 30 acres of vegetated ditch were mapped in the survey area.

#### *Open Water*

Open water habitat in the project area consists of ponds, agricultural irrigation canals, and the Feather, Yuba, and Bear Rivers. Open water encompasses approximately 2 acres within the survey area. Open water features include the deepwater portion(s) of features such as marshes. Deepwater is the area beyond where the littoral zone (shoreline) transitions to the limnetic zone (deep water). Typically, this is the zone where water depth precludes the establishment of emergent vegetation.

### ***Special-Status Species***

This section describes special-status species observed (present) during project reconnaissance-level field surveys and any species considered to be likely to occur, have potential to occur, or that are seasonally present. Special-status species that are unlikely to be found in the project area are not discussed in this section.

#### *Special-Status Plant Species*

The database searches identified 25 special-status plant species that have been recorded in the project region (i.e., the project quadrangles and surrounding quadrangles). Twelve species were determined to be absent or unlikely to occur and were eliminated from further consideration because their habitats are not present in the survey area or their known geographic range does not extend into the project area. The remaining 13 species have some potential to occur in the project area (CNPS 2016; CDFW 2016b). All but one of these 13 species are associated with wetland habitats and the majority are associated with vernal pools and seasonal wetlands. Ahart's

paronychia (*Paronychia ahartii*) may be found in shallow margins of vernal pools but is more typically found in sparse grassland on shallow soils. Previous surveys conducted for the Palermo–East Nicolaus 115 kV Transmission Line Project found one former special-status plant in the project area—fox sedge (*Carex vulpinoidea*); however, this species is no longer considered special-status. Special-status plant surveys will be conducted in suitable habitat in the project area in spring and early summer prior to construction.

### *Special-Status Wildlife Species*

Reviews of information sources initially identified 31 special-status wildlife species with potential to occur in the biological resources survey area (CDFW 2016b; USFWS 2015a). Three of these species were eliminated from further consideration either because of a lack of suitable habitat in the project area or because the project area is outside of the species' current range. Delta smelt (*Hypomesus transpacificus*), California tiger salamander (*Ambystoma californiense*), and Marysville California kangaroo rat (*Dipodomys californicus eximius*) have not been documented in the survey area and are unlikely to occur in the project area (CDFW 2016b). Therefore they are not discussed further below. Twenty-eight special-status wildlife species are present, seasonally present, likely to occur, or have potential to occur in the project area; these species are discussed further below and in Table 3.4-3.

#### *Conservancy Fairy Shrimp*

The project area is not located within a critical habitat unit for Conservancy fairy shrimp. This species is found in large vernal pools and seasonal wetlands located in grasslands of the northern two-thirds of the Central Valley, California. Conservancy fairy shrimp have been reported from scattered locations in Butte County (Eriksen and Belk 1999; U.S. Fish and Wildlife Service 2015c). The historical range of this species likely included most of California's Central Valley floor; however, the species is now restricted to relatively pristine grassland communities that support high-quality vernal pool habitat. Conservancy fairy shrimp occupy relatively large vernal pools and seasonal wetlands (from 322 square feet to 74 acres) that hold water for a long time into May and June (Eriksen and Belk 1999; USFWS 2015c) to allow the shrimp to complete its life cycle, which takes place entirely within the pool habitat.

CNDDB documents the presence of Conservancy fairy shrimp approximately 4.4 miles southeast of Rio Oso Substation. Protocol-level survey efforts conducted from 2006 to 2008 for the Palermo–East Nicolaus 115 kV Transmission Line Project did not detect Conservancy fairy shrimp within the project area. Wet-season protocol surveys are currently being conducted (winter 2015 through early spring 2016) in approximately 40 pools along the project alignment that have the potential to support listed fairy shrimp and where project activities have a potential to directly affect those pools. Although there is potential for this species to occur within the project area, the potential for occurrence is low based on the results of past field surveys, a lack of historical presence, and a large distance from the project area to the closest known population.

**Table 3.4-2: Special-Status Plant Species Identified as Potentially Occurring in the Project Area**

| Common Name<br>*Scientific Name* | Legal Status[a]<br>Federal/ State/CRPR | Blooming Period[b] | Geographic Distribution/ California Floristic Province[c] | Habitat Requirements[c] | Potential for Occurrence in Project Area |
|---|---|---|---|---|---|
| Dwarf downingia<br>*Downingia pusilla* | –/–/2B.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 feet | Potential to occur; suitable habitat and microhabitat present and 10 occurrences are within 10 miles |
| Boggs Lake hedge-hyssop<br>*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; 30–7,795 feet | Potential to occur; two occurrences within 10 miles of project area and suitable habitat is present |
| Rose-mallow<br>*Hibiscus lasiocarpus* | –/–/1B.2 | Jun–Sep | Central and southern Sacramento Valley, deltaic Central Valley, and elsewhere in the United States | Freshwater marshes and swamps; below 395 feet | Potential to occur; small amount of suitable habitat present and 5 occurrences are within 10 miles, nearest occurrence is ~5.5 miles away |
| Ahart's dwarf rush<br>*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; 95–330 feet | Potential to occur; suitable habitat present, 9 occurrences are within 10 miles and nearest occurrence is ~1.5 miles away |
| Red Bluff dwarf rush<br>*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 feet | Potential to occur; suitable habitat present and 13 occurrences are within 10 miles |
| Legenere<br>*Legenere limosa* | –/–/1B.1 | May–Jun | Sacramento Valley, North Coast Ranges, northern San Joaquin Valley, and Santa Cruz mountains | Vernal pools; below 2,890 feet | Potential to occur; suitable habitat present and nearest occurrence is ~4 miles away |
| Butte County meadowfoam<br>*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; 165–3,050 feet | Potential to occur; suitable habitat present, 5 occurrences within 10 miles and nearest occurrence is ~8 miles away |

| Common Name<br>*Scientific Name* | Legal Status[a]<br>Federal/ State/CRPR | Blooming Period[b] | Geographic Distribution/ California Floristic Province[c] | Habitat Requirements[c] | Potential for Occurrence in Project Area |
|---|---|---|---|---|---|
| Baker's navarretia<br>*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; 16–5,710 feet | Potential to occur; suitable habitat present, 2 occurrences within 10 miles and nearest occurrence is ~8.5 miles away |
| Pincushion navarretia<br>*Navarretia myersii* ssp. *myersii* | –/–/1B.1 | Apr–May | Scattered occurrences on the east side of the southern Sacramento Valley and northern San Joaquin Valley | Clay loam soils in vernal pools; 56–1,100 feet | Potential to occur; one occurrence within 10 miles, and suitable habitat present |
| Slender Orcutt grass<br>*Orcuttia tenuis* | T/E/1B.1 | May–Oct | Sierra Nevada and Cascade Range foothills from Siskiyou to Sacramento Counties | Vernal pools; 115–5,775 feet | Potential to occur; two occurrence within 10 miles, and suitable habitat present |
| Ahart's paronychia<br>*Paronychia ahartii* | –/–/1B.1 | Mar–Jun | Northern Central Valley in Butte, Shasta, and Tehama Counties | Cismontane woodland, valley and foothill grassland, vernal pools; 95–1,675 feet | Potential to occur; suitable habitat present, three occurrences within 10 miles and nearest occurrence is ~1.5 miles away |
| Sanford's arrowhead<br>*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 feet | Potential to occur; three occurrences, including one historical occurrence near Rio Oso |
| Brazilian watermeal<br>*Wolffia brasiliensis* | –/–/2B.3 | Apr–Dec | Known in California from a few occurrences along the Sacramento River in Butte, Glenn, Sutter, and Yuba Counties; widespread elsewhere in the Unites States | Shallow freshwater in marshes and swamps; 65–330 feet | Potential to occur; only one occurrence within 10 miles, but suitable habitat present |

**Notes for Table 3.4-2.**

[a] Explanation of legal status codes:

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.
R = listed as rare under the California Native Plant Protection Act; no longer used for newly listed plants, but plants previously listed as rare retain this designation.
– = no listing.

California Rare Plant Rank

1B = rare, threatened, or endangered in California and elsewhere.
2B = rare, threatened, or endangered in California but more common elsewhere.
3 = plants about which more information is needed to determine their status.
.1 = seriously threatened in California.
.2 = moderately threatened in California.
.3 = not very threatened in California.
* = known populations believed extirpated from that County.

[b] As reported in the CNPS online Inventory of Rare and Endangered Plants of California (California Native Plant Society 2016)

[c] As indicated in the Jepson Manual Second Edition (Baldwin et al. 2012), CNPS online Inventory of Rare and Endangered Plants of California (California Native Plant Society 2016), and CNDDB (California Department of Fish and Wildlife 2016b).

**Table 3.4-3: Special-Status Wildlife Species**

| Species Name | Listing Status[1] | Geographic Distribution | Potential for Occurrence in Project Area |
|---|---|---|---|
| **Invertebrates** | | | |
| Conservancy fairy shrimp *Branchinecta conservatio* | E/- | Found in northern two-thirds of the Central Valley floor. Disjunct occurrences in Solano, Merced, Stanislaus, Tehama, Butte, and Glenn Counties. | **Potential to Occur** One occurrence from 2012 in the project area. Nearest occurrence located approximately 4.4 miles southeast of Rio Oso Substation. |
| Vernal pool fairy shrimp *Branchinecta lynchi* | T/- | Known from the Central Valley and central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County. | **Potential to Occur** Suitable habitat is present in the project area and 69 occurrences within 10 miles of the project area. The closest occurrence is located along the Pease-Rio Oso line near Plumas Lake and Olivehurst. |
| Vernal pool tadpole shrimp *Lepidurus packardi* | E/- | Known from Shasta County south to Merced County. | **Potential to Occur** Suitable habitat is present and 29 occurrences within 10 miles of the project area. The closest occurrences are along the Pease-Rio Oso line near Plumas Lake and Olivehurst. One occurrence is 430 feet south of Bogue-Rio Oso Line. |
| Valley elderberry longhorn beetle *Desmocerus californicus dimorphus* | T/- | Found in streamside 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. | **Potential to Occur** Suitable habitat is present and 28 occurrences within 10 miles of the project area. Several occurrences in or near the Feather River, Bear River, Yuba River, North Honcut Creek, and Wilson Creek drainages. |
| **Fish** | | | |
| Chinook salmon Central Valley Spring-Run ESU *Oncorhynchus tshawytscha* | T/T | Wild populations are found 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. | **Potential to Occur** One occurrence from 1995 in the project area along Feather River from Thermalito Afterbay outlet upstream to the fish barrier at Feather River fish hatchery in Butte County. |
| Sacramento splittail *Pogonichthys macrolepidotus* | SSC | Endemic to the Central Valley and range centers on the San Francisco Estuary. | **Potential to Occur** One occurrence from 1995 in the project area. The nearest occurrence is along the Sacramento River from Missouri Bend to North of Knights Landing. |

| Species Name | Listing Status[1] | Geographic Distribution | Potential for Occurrence in Project Area |
|---|---|---|---|
| Steelhead—Central Valley DPS<br>*Oncorhynchus mykiss irideus* | T/- | Found along California Coastal and Central Valley drainages; recent declines in the tributaries of the Sacramento River. | **Potential to Occur**<br>May occur in lower Feather River, lower Yuba River, Bear River, Auburn Ravine upstream to Gold Hill Dam, and Sutter Bypass. Four occurrences in the project area and suitable habitat present at these drainage crossings. |
| **Amphibians** | | | |
| California red-legged frog<br>*Rana draytonii* | 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 Tehama County to Fresno County. | **Potential to Occur**<br>No known occurrences within 10 miles of the project area. Suitable habitat present in the project area along creeks and streams. Possibly extirpated from Central Valley floor. |
| Western spadefoot<br>*Spea hammondii* | SSC | Found in the Sierra Nevada foothills, Central Valley, Coast ranges, coastal counties in southern California. | **Potential to Occur**<br>One known occurrence (from 1956) within the project area, approximately 3 miles southeast of Palermo. Suitable habitat is present. |
| **Reptiles** | | | |
| Coast horned lizard<br>= Blainsville's horned lizard<br>*Phrynosoma blainvillii* | SSC | Found in the Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; below 4,000 feet in northern California. | **Potential to Occur**<br>One known occurrence (from 2002) within the project area, north of Oroville, East of Coal Canyon. Suitable habitat present in the project area. |
| Giant garter snake<br>*Thamnophis gigas* | T/T | Known from the 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. | **Likely to Occur**<br>Several (72) known occurrences located within 10 miles of the project area. A significant population associated with Feather River. Suitable aquatic habitat is present in several sloughs and rice fields in the project area. |
| Western pond turtle<br>*Emys marmorata* | SSC | The species 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. | **Likely to Occur** Several known occurrences in Yuba River, Feather River, Dry Creek, Best Slough, and Wood Duck Slough within 10 miles of the project area. Suitable habitat is present in the project area near the Yuba and Bear Rivers, Honcut and Wyandotte Creeks, Wyman Ravine, as well as along rice field canals. The closest occurrence is approximately 3 miles west of the Palermo line along Feather River. |

| Species Name | Listing Status[1] | Geographic Distribution | Potential for Occurrence in Project Area |
|---|---|---|---|
| **Birds** | | | |
| Bald eagle<br>*Haliaeetus leucocephalus* | D*/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. | **Potential to Occur**<br>Two known occurrences within 10 miles of the project area. Reported to nest at Lake Oroville, approximately 8 miles north of the project area and along Feather River, approximately 3 miles southeast of Gridley and 3.4 miles west of the Palermo line. Foraging habitat and low quality nesting habitat is present at river crossings within the project area. |
| Bank swallow<br>*Riparia riparia* | -/T | Occurs along the Sacramento River from Tehama 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. | **Likely to Occur**<br>CNDDB reports 40 records of observations within 10 miles of the project area, particularly along Feather River. One occurrence report along Bear River. Suitable nesting and foraging habitat is present at river crossings. |
| Burrowing owl<br>*Athene cunicularia* | -/-, SSC | Occupies lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast.<br>Highly associated with California ground squirrel colonies. | **Likely to Occur**<br>Four documented occurrences within 10 miles of the project area, with the closest occurrence approximately 7.3 miles east of the Pease-Rio Oso line. However, suitable foraging, wintering, and breeding habitat are present in annual grassland habitat. |
| Cackling (=Aleutian Canada) goose<br>*Branta hutchinsii leucopareia* | D/- | A winter migrant that occupies habitats from Del Norte County, San Francisco Bay Delta, and southern Central Valley. | **Potential to Occur**<br>One CNDDB occurrence within 10 miles of the project area, east of the Sutter Bypass, approximately 5.5 miles west of the Bogue-Rio Oso Line. Suitable foraging and wintering habitat is present, particularly along fallow rice fields. |
| California black rail<br>*Laterallus jamaicensis coturniculus* | -/T/FP | Permanent resident in the San Francisco Bay and eastward through the Sacramento–San Joaquin River Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties. | **Potential to Occur**<br>19 records of occurrences reported within 10 miles of the project area, with the majority of the occurrences near Loma Rica, Iowa City, and Browns Valley. The closest occurrence is 4 miles east of the Palermo line. |
| Greater sandhill crane<br>*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. | **Potential to Occur**<br>One record reported within 10 miles of the project area, near Gridley. Suitable foraging habitat present particularly near rice fields and seasonal wetlands. |

| Species Name | Listing Status[1] | Geographic Distribution | Potential for Occurrence in Project Area |
|---|---|---|---|
| Least Bell's vireo<br>*Vireo bellii pusillus* | E/E/SSC | Summer resident in western Sierra Nevada, throughout Sacramento and San Joaquin Valley, coastal valley and foothills from Santa Clara County south. | **Potential to Occur**<br>One record reported within 10 miles of the project area, near Marysville. Suitable breeding and foraging habitat present along the Feather and Yuba Rivers. |
| Northern harrier<br>*Circus cyaneus* | SSC | Occurs throughout lowland California. Has been recorded in fall at high elevations. | **Present**<br>Six records of occurrence within 10 miles of the project area. Suitable nesting and foraging habitat is present. Observed foraging in project area during reconnaissance surveys. |
| Song sparrow ("Modesto" population)<br>*Melospiza melodia mailliardi* | SSC | Locally occurs in the Sacramento Valley, Sacramento–San Joaquin River Delta, and northern San Joaquin Valley. Highest densities occur in the Butte Sink of the Sacramento Valley and Sacramento–San Joaquin River Delta. | **Potential to Occur**<br>Two records reported within 10 miles of the project area, near Marysville and approximately 2 miles east of Sheridan. Suitable nesting and foraging habitat present along the Feather and Yuba Rivers. |
| Swainson's hawk<br>*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. | **Present**<br>Known to nest in the project area; over 100 records of nesting activity and additional records of foraging reported within 10 miles of the project area since 1979. Suitable nesting and foraging habitat is present in several areas. |
| Tricolored blackbird<br>*Agelaius tricolor* | -/SC | 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. | **Potential to Occur**<br>CNDDB reports 49 records of occurrence within 10 miles of the project area, of which only 24 are presumed extant. Low quality habitat suitable for relatively small colonies is present, particularly near slough northeast of Marysville, fields southeast of Arboga, habitat east and west of Plumas Lake, and marsh habitat southwest of Rio Oso. |
| Western yellow-billed cuckoo<br>*Coccyzus americanus occidentalis* | T/E | Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers. | **Potential to Occur**<br>CNDDB reports six records of occurrence within 10 miles of the project area, with the most recent positive observation from 1995. Historic records of occurrence reported from the Feather River and Yuba River confluence. Low quality suitable habitat may be present in riparian forest along the Bear River, Yuba River, Feather River, and Honcut Creeks. |

| Species Name | Listing Status[1] | Geographic Distribution | Potential for Occurrence in Project Area |
|---|---|---|---|
| White-tailed kite<br>*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. | **Present**<br>One reported CNDDB occurrence; however, numerous documented eBird records within the project area. Suitable grassland foraging habitat is present throughout the project area and suitable nesting habitat may be present in groves of trees located near open agricultural fields, rural residences, and riparian corridors along the rivers. |
| **Mammals** | | | |
| Pallid bat<br>*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. This species inhabits a wide range of habitats, including arid desert regions, oak savanna, shrub-steppe, and pine-oak woodlands. | **Potential to Occur**<br>One record of occurrence, from 2003, reported within 10 miles of the project area. Suitable roosting habitat may be present. |
| Townsend's big-eared bat<br>*Corynorhinus townsendii* | -/CT/SSC | Occurs throughout California except subalpine and alpine habitats. | **Potential to Occur**<br>One record of occurrence, from 1990, reported within 10 miles of project area, near Oroville. Suitable roosting habitat may be present. |
| Western mastiff bat<br>*Eumops perotis californicus* | -/SSC | Uncommon resident in southeastern San Joaquin Valley and Coastal Ranges from Monterey County south through Southern California. In California, the species has been observed roosting up to 1,300 feet and foraging at more than 8,800 feet. | **Potential to Occur**<br>CNDDB reports three records of occurrence near Oroville, approximately 3.5 miles north of the project area. Low quality suitable habitat may be present. |

**Notes for Table 3.4-3.**

Sources: California Department of Fish and Wildlife 2016b; U.S. Fish and Wildlife Service 2015a; eBird 2015.
DPS = distinct population segment
ESU = evolutionarily significant unit
CNDDB = California Natural Diversity Database
[1] Explanation of state and federal listing codes:

**Federal listing codes:**

E = Federally Endangered Species
T = Federally Threatened Species
D = Federally Delisted
D[8] = Federally protect under Bald Eagle and Golden Eagle Protection Act
P = Proposed for listing 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

**California listing codes:**

T = State-listed as Threatened
E = State-listed as Endangered
SC = State candidate for listing
FP = Fully Protected Species
SS = Species of Special Concern
– = no listing

### *Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp*

The project area is not located within designated critical habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. These species occupy a variety of different vernal pool habitats, from small (but greater than 6.5 square feet) to large, and also have been observed in seasonal wetlands, ephemeral drainages, stock ponds, roadside ditches, swales, and rock outcrops (Helm 1998). There is potential for vernal pool fairy shrimp and vernal pool tadpole shrimp to occur within the project area. CNDDB documents local presence (approximately 100 occurrences within 10 miles of the project area) of the species. CNDDB occurrences of vernal pool fairy shrimp and vernal pool tadpole shrimp are recorded in the project region, particularly southeast of Marysville and Dantoni Road (CDFW 2016b). Three occurrences of vernal pool tadpole shrimp and one occurrence of vernal pool fairy shrimp have been identified directly along the South of Palermo Line (CNDDB 1993, 1997, 2003, and 2013). Vernal pool tadpole shrimp also were identified at eight locations during the branchiopod assessment and during protocol-level surveys conducted for the Palermo–East Nicolaus 115 kV Transmission Line Project between 2006 and 2008. Protocol-level surveys for the South of Palermo 115 kV Power Line Reinforcement Project are currently being conducted (winter 2015 through early spring 2016) in conjunction with the Conservancy fairy shrimp surveys described above.

### *Valley Elderberry Longhorn Beetle*

The project area is not located within designated critical habitat for VELB. Blue elderberry (*Sambucus* spp.) along rivers and streams is the primary host plant for the species. The beetle is dependent on the host plant throughout most of its life cycle. Adult beetles of this species are only active during the flowering period of the elderberry, from March to June (USFWS 2015d). After mating, the adult beetles lay eggs on the host plant and the life cycle starts over.

There are 28 documented CNDDB occurrences within the project area; several occurrences have been reported in or near the Feather River, Bear River, Yuba River, North Honcut Creek, and Wilson Creek drainages. The closest documented populations of VELB to the project area are along Feather River, within 2 miles of the South of Palermo Line (CDFW 2016b). However, field surveys conducted for the Palermo–East Nicolaus 115 kV Transmission Line Project did not detect VELB in the project area; these surveys include habitat assessments for the beetle conducted in 2006 and an additional survey conducted in 2008 within 100 feet of the access roads for the Palermo–East Nicolaus 115 kV Transmission Line Project. Nevertheless, blue elderberry plants with one or more stems 1 inch or greater in diameter were observed in the biological resources survey area during the 2015 field surveys. Because of the presence of elderberry plants and proximity to documented occurrences, VELB has potential to occur in the project area.

## *Special-Status Fish Species*

### *Chinook Salmon—Central Valley Spring-Run ESU*

Four distinct runs of Chinook salmon spawn in the Sacramento-San Joaquin River system. The Central Valley spring-run Chinook salmon evolutionarily significant unit (ESU) includes populations spawning in the Sacramento River and its tributaries, the Yuba River, Mill Creek, Deer Creek, and Butte Creek. Critical habitat is designated for spring-run Chinook salmon in the Feather River up to Lake Oroville, the lower Yuba River, and the lower Bear River (70 FR 52598, September 2, 2005). Spring-run Chinook salmon are considered extirpated from the San

Joaquin River system. Feather River spring-run Chinook salmon are primarily hatchery fish, raised at the Feather River Hatchery (CDFG 1998).

Spring-run Chinook salmon enter the Sacramento River from late March through September (CDFG 1998), but peak abundance of immigrating adults in the lower Sacramento River occurs from April through June. Spring-run Chinook salmon spawn primarily upstream of the Red Bluff Diversion Dam and in the aforementioned tributaries. Spawning occurs from mid-August through early October (CDFG 1998). A small portion of an annual year-class may emigrate as post-emergent fry; however, most are believed to rear in the upper river and tributaries during winter and spring. The timing of juvenile emigration from the spawning and rearing reaches can vary depending on tributary of origin and can occur from November through June.

Adult spring-run Chinook salmon have potential to occur in the project area in the lower Feather River and consequently the Bear and Yuba Rivers as well as Honcut Creek from March through September. They do not occur in Wyandotte Creek (CDFW 2016d, 2016e). Juveniles can occur any time of year, although peak abundance generally occurs from November through March.

#### *Sacramento Splittail*

The Sacramento splittail is endemic to the Central Valley and is now largely confined to the Sacramento–San Joaquin River Delta, Suisun Bay, Suisun Marsh, Napa River, Petaluma River, and parts of the San Francisco Estuary. The species rarely enters the lower reaches of the Feather River, but has been documented as far upstream as Oroville (CDFW 2016b). Splittail depend on both brackish-water rearing habitats in the San Francisco Estuary and on freshwater floodplain and river-edge spawning habitats above the estuary. The Delta distinct population segment (DPS) migrates upstream from the Sacramento–San Joaquin River Delta from November through February; adults spawn on floodplains or flooded edge habitat in March and April and then migrate back downstream. The fry remain in freshwater habitat and then move downstream in April and May; juvenile rear in estuary habitat for 1–2 years before spawning. Splittail spawn on submerged annual vegetation in flooded areas or along the edges of rising rivers. Known important spawning areas include the Yolo and Sutter Bypass and the Cosumnes River floodplain. The species is adapted for estuarine life and can tolerate a range of salinities (0–29 parts per thousand) and temperatures (5°–33°C).

CNDDB reports one occurrence of Sacramento splittail within 10 miles of the project area, stretching along the Sacramento River from Missouri Bend north of Knights Landing to south of Courtland and into the lower reaches of the Feather River (CDFW 2016b). There is potential for Sacramento splittail to occur in the project area due to the presence of suitable spawning and rearing habitat along the lower reaches of the Feather River.

#### *Steelhead—Central Valley DPS*

Critical habitat was designated for steelhead in the Feather, Bear, and Yuba Rivers (70 FR 52596, September 2, 2005). Steelhead, an anadromous variant of rainbow trout, was once abundant in California coastal and Central Valley drainages; however, population numbers in the tributaries of the Sacramento River have declined significantly in recent years. Steelhead is seasonally present in the project area and has been documented along the lower Feather River, lower Yuba River, Auburn Ravine upstream to Gold Hill Dam, and in Sutter Bypass (CDFW

2016b). Adult steelhead have potential to occur in the lower Feather, Yuba, and Bear Rivers; Honcut Creek; and Wyandotte Creek from July through March, with peak abundance from November through March. Juvenile steelhead are present any time of year, although peak abundance generally occurs from November through May. The steelhead spawning season typically stretches from December through April. After several months, fry emerge from the gravel and begin to feed. Juveniles rear in freshwater from 1–4 years, then migrate to the ocean as smolts. There have been four occurrences in the project area and there is suitable habitat present at the project alignment crossings with the Feather River, Yuba River, Bear River, Auburn Ravine upstream to Gold Hill Dam, and Sutter Bypass.

#### *California Red-Legged Frog*

The project area does not fall within critical habitat for California red-legged frog (CRLF) (USFWS 2015a). Its current range consists of isolated locations in the Sierra Nevada and North Coast and northern Transverse Ranges. The species may have been extirpated from historic sites in the Central Valley floor due to habitat reduction and the introduction of bullfrog (*Rana catesbeiana*) and predatory fish (USFWS 2002).

CRLF uses a variety of aquatic, riparian, upland habitat types, and any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks also may be used. The species requires cool-water habitats and habitats with deep (i.e., at least 2.3 feet) still or slow-moving water and emergent and submergent vegetation consisting of willows, tules, or cattails. Adult CRLF estivate in upland habitat in small mammal burrows or under leaf litter in riparian habitat (USFWS 2010). Although red-legged frogs typically remain near streams or ponds, marked and radio-tagged frogs have been observed to move more than 2 miles through upland habitat (USFWS 2002). These movements are typically along riparian corridors; however, some individuals move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas, especially on rainy nights (Fellers and Kleeman 2007).

Although suitable breeding habitat is present in the project area, no records of CRLF have been reported from within 10 miles of the project area (CDFW 2016b). Isolated populations have been documented in the Sierra Nevada, northern coast, and northern Transverse Ranges (USFWS 2010). Protocol field surveys conducted by PG&E in 1998 for the Rock Creek to Cresta Project included the northern extent of the project area, near Palermo Substation, and potential habitat areas located approximately 0.5 mile east of the project area from Palermo south to Rio Oso Substation; no CRLFs were observed (PG&E 1998). Based on known distribution of CRLF and the suitability of habitat along the South of Palermo Line, there is low potential for this species to occur in the project area.

#### *Western Spadefoot*

Western spadefoot's range is distributed among the Sierra Nevada foothills, Central Valley, Coast Ranges, and coastal counties in southern California (Jennings and Hayes 1994).

Western spadefoot can be found in dry grassland habitat close to seasonal wetlands such as vernal pool complexes, typically near extensive areas of friable (but usually not sandy) soil. They

require seasonal wetlands for reproduction and metamorphosis. Adult western spadefoots spend most of the year in self-excavated, earth-filled burrows; they may potentially use mammal burrows (Stebbins 2003). They emerge from underground retreats during heavy rains in autumn and winter (typically between October and May) and spawn in seasonal wetlands (e.g., vernal pools) in late winter or early spring (Jennings and Hayes 1994). Rainpools that do not contain bullfrogs, fish, or crayfish are necessary for breeding, and western spadefoot toads are known to occasionally emerge during rain events at other times of the year (Nafis 2015).

CNDDB reports one record of western spadefoot occurrence (Occurrence #389) from 1956 within 10 miles of the project area (CDFW 2016b). The occurrence is located approximately 3 miles southeast of the community of Palermo along Wyandotte Creek and is approximately 2.2 miles from the South of Palermo Line. Seasonal wetlands and vernal pools that occur in the project area provide suitable breeding habitat for western spadefoots. Annual grasslands adjacent to the project area could be used by western spadefoot as aestivating habitat. Therefore, there is potential for the species to occur within the project area.

### *Coast Horned Lizard*

Coast horned lizard occurs throughout the Central Valley and Coast Ranges from Shasta County south to Los Angeles, Ventura, and Santa Barbara Counties (Stebbins 2003). Coast horned lizards occur in a variety of habitats, including clearings in riparian woodlands, chamise chaparral, and grasslands with loose, friable soils, but are generally found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains near ant hills. During periods of inactivity, coast horned lizards utilize small mammal burrows or burrow into loose soils under surface objects (Jennings and Hayes 1994).

One coast horned lizard occurrence (Occurrence #617 [2002]) has been reported within 10 miles of the project area (CDFW 2016b). The occurrence is approximately 9.75 miles north of the project area, north of Oroville and east of Coal Canyon. Several seasonal washes located within the Yuba River floodplain support sandy soils that provide suitable habitat for this species. Grassland habitats in the project area also provide potential habitat for coast horned lizards. Therefore, there is potential for the species to occur within the project area.

### *Giant Garter Snake*

The USFWS has not designated critical habitat for GGS. The species occurs in the Central Valley of California from Fresno County in the south to Butte County in the north. The known range of the species is from Glenn County to the southern edge of the Sacramento–San Joaquin River Delta and from Merced County to northern Fresno County (Nafis 2015).

GGS typically lives in marshes and agricultural wetlands or waterways such as rice fields, irrigation and drainage canals, sloughs, ponds, small lakes, and low gradient streams. Suitable habitat for GGS must have adequate water from early spring through mid-fall to provide foraging habitat, emergent vegetation to provide cover, grassy banks or openings in vegetation to provide basking sites, and higher elevation uplands to provide winter aestivation sites and refuge from flooding. During the winter dormancy period, the species inhabits small mammal burrows and soil crevices located above the flood elevation (USFWS 2014).

CNDDB reports 72 records of GGS occurrences within 10 miles of the project area (CDFW 2016b). A significant population of the species is associated with habitat along the Feather River along the East Side Canal, Sutter Bypass Canal, and Cross Canal. The closest known occurrence to the project area was reported near the Bear River and Feather River confluence, northeast of Rio Oso.

Focused assessments of suitable GGS habitat occurring within 200 feet of the Palermo–East Nicolaus 115 kV Transmission Line Project were conducted in 2006, and additional assessments of habitat within 200 feet of proposed access roads and staging areas were conducted in 2008. Suitable upland and aquatic habitat for GGS is present within the project area and was observed during field surveys conducted by wildlife biologists in fall 2015, particularly along rice fields and slow-moving irrigation ditches. GGS is likely to occur in the project area.

#### *Western Pond Turtle*

Western pond turtle is found in suitable river, stream, and pond habitats located west of the Sierra-Cascade crest (Jennings and Hayes 1994). Western pond turtle inhabits fresh or brackish water characterized by areas of deep water, low flow velocities, moderate amounts of riparian vegetation, warm water and/or ample basking sites, and underwater cover elements, such as large woody debris, rocks, or open banks for basking (Jennings and Hayes 1994). The turtle also requires upland habitats for basking, overwintering, and nesting, and typically can be found within 0.6 mile from aquatic habitats (Holland 1994). Nesting habitat for western pond turtle is usually adjacent to or within 160 feet of aquatic habitat in areas with compact soil and sparse vegetation (Rathbun et al. 1992, 2002). Nest sites are typically found on unshaded slopes with high clay or silt composition (Jennings and Hayes 1994). Overwintering turtles are typically buried under 1.98–3.03 inches of leaf litter (Rathbun et al. 1992, 2002) and are generally found in appropriate habitat within approximately 660 feet of aquatic habitat.

CNDDB reports 10 records of western pond turtle occurrence within 10 miles of the project area (CDFW 2016b). In the project vicinity, the western pond turtle has been observed in the Feather River, Dry Creek, Sutter National Wildlife Reserve, and Wood Duck and Best Sloughs. Western pond turtle is likely to occur within the project area.

#### *Bald Eagle*

The USFWS has not designated critical habitat for bald eagle. Bald eagles are a permanent resident in California and primarily breed in Butte, Lake, Lassen, Modoc, Plumas, Siskiyou, and Trinity Counties. This species is found in association with large bodies of water and nests in live trees with open canopies and branchwork (Zeiner et al. 1990).

CNDDB reports two records of bald eagle occurrence within 10 miles of the project area (CDFW 2016b). The closest and most recent occurrence is from 2010 along the Feather River, approximately 3.4 miles west of the Palermo Line, north of the town of Craig. Another nesting occurrence, from 2000, is along the western shoreline of Lake Oroville, approximately 8 miles north of the project area; the breeding pair has occupied the nest in subsequent years. Suitable foraging and nesting habitat is present along Feather and Yuba Rivers for bald eagle. There is potential for this species to occur in the project area.

### *Bank Swallow*

The greatest numbers of bank swallows occur along the banks of the Sacramento and Feather Rivers in the northern Central Valley (CDFG 1999). Bank swallow is a spring and fall migrant in interior California, and a local summer resident restricted to riparian, lacustrine, and coastal habitat. Nesting bank swallow requires bluffs or banks with soft sand, sandy loam, or clay soils, often overlooking water; however, they have also been documented roosting on logs, shoreline vegetation, and telephone wires (CDFG 1999). Individuals first arrive to California in early April and peak numbers occur in May. The number of bank swallows decreases during the summer and the species is mostly absent by mid-September.

CNDDB reports 40 observations of bank swallows nesting at several locations along the banks of the Feather River, west of the South of Palermo Line, and along the Bear River (CDFW 2016b). Potential nesting habitat occurs in the project area along the banks of the Feather and Yuba Rivers and other creeks or washes. Bank swallows or potential bank swallow nests were not observed in the project area during reconnaissance-level surveys conducted fall 2015. The Pease Sub Line Segment and the Bogue Sub Line Segment span suitable habitat areas along the Feather River and the Pease Sub Line Segment crosses a CNDDB occurrence for bank swallow. The closest bank swallow occurrence to the Rio Oso Sub Line Segment Loop is located approximately 1.5 miles south of the line. The bank swallow is likely to occur within the project area.

### *Burrowing Owl*

Burrowing owls prefer open, dry, short grassland habitats with few trees. They typically occupy burrows abandoned by California ground squirrels (*Otospermophilus beecheyi*) or other burrowing mammals, but also use artificial burrows such as abandoned pipes, culverts, and debris piles. Burrowing owls often nest in roadside embankments, on levees, and along irrigation canals from late February through August.

CNDDB reports four occurrences of burrowing owl within 10 miles of the project area (CDFW 2016b). The closest known occurrence is located approximately 5 miles west of the project area near Thermalito Afterbay. In 2005 and 2006, PG&E performed habitat assessments for burrowing owl in the project vicinity. The areas within approximately 300 feet of the existing power line and proposed work areas for the Palermo–East Nicolaus 115 kV Transmission Line Project were surveyed to determine their suitability to support nesting owls. This species was observed in the northern portion of the project area in 2005 and signs of burrowing owl presence were found in the same location in 2006. Potentially suitable nesting habitat is present along several portions of the project area; burrowing owl is likely to occur within the project area.

### *Cackling (Aleutian Canada) Goose*

The cackling goose is a resident in northeastern California, and wintering populations mainly occur in Del Norte County, the Sacramento–San Joaquin River Delta, and southern Central Valley. Its preferred habitats include lacustrine, fresh emergent wetlands, and moist grasslands, croplands, pastures, and meadows. The cackling goose roosts on open water of lakes or ponds and nests near water and suitable feeding areas (i.e., moist grain fields).

CNDDB reports one occurrence of cackling goose within 10 miles of the project area, approximately 5.5 miles west of the Rio Oso Sub Line Segment Loop (CDFW 2016b). Numerous recent observations (i.e., from 2013 to 2015) of cackling goose have been reported on eBird along the Feather River northwest of Palermo, in Marysville, Arboga, and Nicolaus (eBird 2015). The species has potential to occur within the project area.

### *California Black Rail*

The California black rail is a yearlong resident of saline, brackish, and fresh emergent wetlands. While historically the species is known from tidally influenced coastal areas, a few inland populations of California black rail occur (Repking and Ohmart 1977; CDFG 1999). Inland, the species utilizes freshwater habitat with bulrushes, cattails, and saltgrass and is known to colonize isolated marsh sites, including created wetlands (CDFG 2005). In the Sierra Nevada foothills, California black rail sites are found almost exclusively as discrete pockets of emergent vegetation, often as islands of such habitat surrounded by dry annual grassland, pasture, or oak woodland. Wetlands known to support the species range in area from 0.25 acre to 14 acres, and shallow water depth throughout the year appears to be more important than type of vegetative cover as long as some dense, wetland vegetation is present (Tecklin 1999). The species has been documented in Butte and Yuba County, approximately 10 miles west and east of the South of Palermo Line (Aigner et al. 2005; CDFG 2005). Black rails have also been observed in 164 scattered marshes from northeast of Chico (Butte County) to Rocklin (Placer County) (Richmond et al. 2008).

CNDDB reports 19 occurrences of California black rail within 10 miles of the project area (CDFW 2016b). The closest occurrence is located approximately 1.2 miles southeast of Palermo Substation in the vicinity of Wyandotte Creek. The majority of the CNDDB occurrences are located near Loma Rica, Iowa City, Browns Valley, and Beale Air Force Base. These occurrences are approximately 3.9 miles east of the project area, but are within the project vicinity. Project biologists for the Palermo–East Nicolaus 115 kV Transmission Line Project identified potential inland breeding habitat for California black rail within 500 feet of the Palermo–East Nicolaus project area, and an ornithologist conducted field surveys in May 2006. No California black rails were detected during the 2006 surveys, and the survey determined that wetlands along or near the Palermo–East Nicolaus Line were not suitable habitat areas for this species (ICF 2006). Similarly, the wetlands along the parallel South of Palermo Line not provide suitable habitat for black rail. Therefore, this species has low potential to occur in the project area.

### *Greater Sandhill Crane*

Greater sandhill crane breeds outside of the project area, but in the winter this species frequents annual and perennial grassland habitats, moist croplands with rice or corn, shallow lacustrine, and fresh emergent wetland habitats in the Sacramento and San Joaquin Valley. The species roosts in shallow water and dry grassland.

CNDDB reports one occurrence of greater sandhill crane within 10 miles of the project area, near Gridley, approximately 6.4 miles from the South of Palermo Line (CDFW 2016b). There is potential for the species to occur due to the presence of suitable habitat.

### *Least Bell's Vireo*

The project area is not located within critical habitat for the species. Least Bell's vireo is the westernmost subspecies of Bell's vireo, breeding entirely within California and northern Baja California (Kus 2002). Least Bell's vireo is now a rare summer resident at elevations below 2,000 feet in low, dense valley foothill riparian habitat of the Sacramento and San Joaquin Valley. Least Bell's vireo uses thickets of willow, cottonwood, mulefat, wild blackberry, and other riparian shrubs for nesting and roosting cover. The species is usually found near water but also inhabits thickets along dry, intermittent streams. Least Bell's vireo generally arrives to breeding grounds in late March and departs in August (CDFG 1990). CNDDB reports one occurrence within 10 miles of the project area, near Marysville, approximately 1.4 miles west of the South of Palermo Line (CDFW 2016b). There is potential for the species to occur in the project area due to the presence of suitable breeding and foraging habitat for least Bell's vireo along the Feather and Yuba Rivers.

### *Northern Harrier*

Northern harrier breeds in the Central Valley and foothills of the Sierra Nevada. Northern harriers nest on the ground in tall grassland vegetation, usually near a marsh or other wetland, but may also nest in grasslands or grain fields.

CNDDB reports six records of the species within 10 miles of the project area (CDFW 2016b). Recent (2013–2015) observations of northern harrier have been reported on eBird (2015) near Honcut, Ramirez, Mello, Marysville, East Nicolaus, and along Feather River. Northern harrier is present within the project area.

### *Song Sparrow—"Modesto" Population*

Modesto song sparrow is restricted to California and the project area occurs within the year-round range of the species. It is locally numerous in Colusa County in the Sacramento Valley, the Sacramento–San Joaquin River Delta (exclusive of Suisun Marsh), and the northern San Joaquin Valley of Stanislaus County (Shuford and Gardali 2008). The highest population density of the species occurs in the Butte Sink area of the Sacramento Valley and in the Sacramento–San Joaquin River Delta, near extensive wetland habitat. The species breeds in emergent freshwater marshes dominated by tulles, cattails, and riparian willow thickets, but will also nest in riparian forests of valley oak with an understory of blackberry, and along vegetated irrigation canals and levees (Shuford and Gardali 2008).

CNDDB reports two records of the Modesto song sparrow within 10 miles of the project area, near Marysville, and approximately 2 miles east of Sheridan, near Yankee Slough (CDFW 2016b). There is potential for Modesto song sparrow to occur within the project area due to the presence of suitable habitat.

### *Swainson's Hawk*

Swainson's hawk nests in the lower Sacramento Valley, San Joaquin Valley, Klamath Basin, and Butte Valley. The species typically uses oaks or cottonwood trees in or near riparian habitats but will also nest in oak groves, in roadside trees, and in lone trees with adequate foraging habitat nearby. Swainson's hawks forage in annual grasslands, irrigated pastures, and alfalfa, hay, and grain fields.

CNDDB reports 119 records of Swainson's hawk nesting activity within 10 miles of the project area and the species has been reported to nest in the project area (CDFW 2016b). During field reconnaissance surveys in the fall of 2015, ICF biologists observed potential raptor nests within 0.5 mile of the project area that could be used by Swainson's hawk. The raptor may be found within the project area from mid-March to early September (CDFW 2006).

### *Tricolored Blackbird*

Tricolored blackbird is largely endemic to California, with more than 99 percent of the global population occurring in the state, and a few scattered populations in Oregon, Washington, coastal Baja California, Mexico, and western Nevada (Beedy and Hamilton 1999). The largest colonies of this species are found in the San Joaquin and Sacramento Valleys and in several southern California counties.

Tricolored blackbird nests in dense stands of cattails, tules, blackberry brambles, or willows within 1,600 feet of open, accessible water (CDFG 2008). Colonies require open, accessible water; a suitable nesting substrate; and open-range foraging habitat of natural grassland, woodland, or agricultural cropland (Beedy and Hamilton 1999). Nesting locations must be large enough to support a minimum of approximately 50 breeding pairs (CDFG 2008). High-quality habitat is concentrated in the large agricultural and wildlife management areas located north and south of Honcut Creek; however, the species will use marginal habitat and has been observed nesting in blackberry shrubs along cattail-filled irrigation ditches (CDFW 2016b). Tricolored blackbird forages in a variety of habitats, including agricultural fields, dairies and feedlots, irrigated pastures, annual grasslands, ephemeral pools and ponds, riparian scrub, and freshwater wetlands (Beedy and Hamilton 1997).

Tricolored blackbird was observed during general habitat assessment surveys conducted for the Palermo–East Nicolaus 115 kV Transmission Line Project (ICF 2009b). CNDDB reports 49 observations of tricolored blackbird within 10 miles of the project area (CDFW 2016b). Recent (2001–2014) observations near the proposed power lines include occurrences within approximately 1.5 miles of the South of Palermo Line (CDFW 2016b). Tricolored blackbird observations have also been reported near Wyandotte Creek, south of South Honcut Creek, Marysville, Arboga, and east of East Nicolaus (eBird 2015). Tricolored blackbird has potential to occur in the project area due to the presence of nesting and foraging habitat.

### *Western Yellow-Billed Cuckoo*

The project area is not located within proposed critical habitat for western yellow-billed cuckoo, which is a rare summer resident of valley foothill and desert riparian habitats in scattered locations in California (CDFG 1999). The species departs by late August or early September. The California range of the western species is now restricted to remaining isolated riparian forest fragments of the Sacramento Valley, the Kern River, and the lower Colorado River with individuals occasionally reported in other areas (Laymon 1998; Dettling and Seavy 2012). Other sites where small populations of cuckoo (i.e., fewer than five pairs) breed, although not necessarily every year, are the Feather River from Oroville to Verona, and Butte, Yuba, and Sutter Counties (Laymon 1998). The Sacramento Valley is believed to have one of the largest cuckoo populations in California (Halterman et al. 2001). Large-scale cuckoo survey were conducted along the Feather Rivers between 1999 and 2000. The surveys suggest a population

of up to six individual cuckoos were found along the section of the Feather River from Oroville to Nicolaus (Halterman et al. 2001). No cuckoos were detected along the Feather River from 2012 (Dettling and Seavy 2012).

Western yellow-billed cuckoo inhabits extensive deciduous riparian thickets or cottonwood-willow forests with dense, understory foliage that is typically located adjacent to slow-moving waterways or seeps. In the Sacramento Valley, the species also utilizes habitat adjacent to orchards, especially walnut orchards (CDFG 1999). The yellow-billed cuckoo is strongly associated with water and other mesic habitats where humidity is high during the breeding season (CDFG 1999). The species requires relatively large blocks (i.e., 42 acres to 99 acres) of contiguous patches of multilayered riparian habitat (particularly woodlands with cottonwoods and willows) for nesting. Patch size has been shown to be one of the most important variables in determining occupancy for yellow-billed cuckoo nesting pairs (Halterman 1991). Densely-foliated, deciduous trees and shrubs are required for roosting sites.

CNDDB reports six occurrences within 10 miles of the project area, with the closest occurrence approximately 0.30 mile south of the Pease Sub Line Segment that crosses the Feather River (CDFW 2016b). Occurrences of the species have also been reported on the Feather River near Marysville and Nicolaus and at Sutter National Wildlife Refuge (eBird 2015).

There is potential for western yellow-billed cuckoo to occur within the project area at limited suitable patches of riparian forest along the Bear River, Feather River, and Honcut Creeks; however, the potential is low because the majority of the potential nesting patches are small and isolated.

#### *White-Tailed Kite*

White-tailed kite is restricted to California, western Oregon, and along the Texas coast. White-tailed kite is common in lowlands of the Central Valley in grasslands, oak woodlands or savanna, and wetlands. The species nests in trees with dense canopy and near the top of dense oak, willow, or other tree stands near open foraging areas (CDFG 2005). White-tailed kite forages in grasslands, agricultural fields, pastures, wetlands, and meadows that support large populations of small mammals (e.g., voles and mice).

CNDDB reports one record of a white-tailed kite nest from 2003, located in Olivehurst, approximately 0.5 mile west of the South of Palermo Line (CDFW 2016b). Numerous sightings of the species have been reported to eBird (2015). Project biologists observed white-tailed kites foraging in the survey area during reconnaissance field surveys conducted in fall 2015. Therefore, this species is considered present within the project area.

#### *Other Migratory Birds and Nesting Raptors*

Other migratory bird species and raptors such as great blue heron, western scrub jay, red-tailed hawk, and great-horned owl could establish nests in suitable habitat in the project area. These common species are locally and regionally abundant. The nesting season for migratory birds and raptors is generally between February 15 and August 31. Because of the large number of trees and shrubs and other nesting substrate present (including structures such as transmission towers

and electrical poles), it is likely that numerous common migratory birds would nest in or near the project area.

### *Bats*

When evaluating potential impacts on bat populations from human activities, bats' unique biological and ecological features (such as colonial roosting, hibernating winter colonies, maternity colonies, and low reproductive rates) must be taken into consideration. Three special-status species of bats (pallid bat, Townsend's big-eared bat, and western mastiff) were identified as having the potential to roost or forage in the project area and are discussed below.

#### *Pallid Bat*

The pallid bat occupies a variety of habitats (below 6,000 feet of elevation), from arid deserts to grasslands, mixed conifer forests, shrublands, and riparian areas (CDFG 1990). The pallid bat is most common in open, dry habitats with rocky areas for roosting. Pallid bats are known to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Although roosts (including day, night, and maternity roosts) typically are in rock crevices and cliffs, day roosts also can be found in tree hollows and caves (Pierson et al. 1996) and is associated with oak woodlands, ponderosa pine, and redwood habitats (Pierson and Rainey 1998). In more urban settings, night roosts frequently are associated with human-made structures, such as abandoned buildings, abandoned mines, and under bridges (Pierson et al. 1996). Overwintering roosts require relatively cool and stable temperatures, out of direct sunlight. Pallid bats breed from late October through February, and young are born in May or June (Ziener et al. 1990).

CNDDB reports one record of pallid bat within 10 miles of the project area, near the Sutter Buttes; however, pallid bats have potential to roost on bridges that cross the project area and may also be found in tree hollows within the project area (CDFW 2016b). There is potential for pallid bat to occur within the project area.

#### *Townsend's Big-Eared Bat*

Townsend's big-eared bat is found throughout California (Pierson and Rainey 1998) and occurs in all habitats below elevations of 8,000 feet. Townsend's big-eared bat occurs most frequently in mesic habitats such as chaparral, sagebrush, oak woodland, riparian, and other conifer forest habitats (CDFG 2000). The species requires caves, mines, tunnels, buildings, or other human-made structures for day and night roosting. Townsend's big-eared bat may use separate sites for day, night, hibernation, or maternity roosts. This bat species is sensitive to disturbance of roosting sites. Townsend's big-eared bat roots in the open, hanging from walls and ceilings (Pierson and Rainey 1998). The species overwinters in hibernacula sites from October to April; breeding occurs at these sites between November and February and young are born from May to June (CDFG 2000).

CNDDB reports one record of Townsend's big-eared bat within 10 miles of the project area, near Oroville (CDFW 2016b). There is potential for this species to occur within the project area and undisturbed human-made structures provide potentially suitable roosting sites.

*Western Mastiff Bat*

The western mastiff bat is a yearlong resident of California and is active year-round. It is found in southeastern San Joaquin Valley and the Coastal Ranges from Monterey County southward through southern California, and eastward to the Colorado Desert. The species occupies open, semiarid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban habitat types (CDFG 1990). Day roosts are established in crevices in cliff faces; in uneven rock outcrops with exposed faces or sides; occasionally in high buildings, trees, and tunnels. Roost sites are high above ground with unobstructed approaches. The western mastiff bat forms small colonies and is known to shift roost sites (CDFG 1990; Pierson and Rainey 1998). Mating occurs in the spring and the timing of births is variable both between and within colonies (June–September); however, most births in California occur by July (Krutzsch 1955; Best et al. 1996).

CNDDB reports three records of western mastiff bat within 10 miles of the project area, near and north of Oroville (CDFW 2016b). There is potential for western mastiff bat to occur within the project area due to the presence of suitable roosting and foraging habitat.

#### 3.4.3.2 Habitat Conservation Plans (HCPs)

There are not any approved HCPs within the study area.

### 3.4.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to biological resources derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational impacts on biological resources.

#### 3.4.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on biological resources were evaluated for each of the criteria listed in Table 3.4-1, as discussed in Sections 3.4.1 and 3.4.4.3.

#### 3.4.4.2 Applicant-Proposed Measures

To reduce biological impacts associated with the project, PG&E will implement the following APMs:

***APM BIO-1: Conduct Worker Environmental Awareness Training Program.***

A qualified biologist will develop an environmental awareness training program that is specific to the project. All on-site construction personnel will attend the training before they begin work on the project. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of project permits. Training will include information about the ESA and CESA, special-status species as defined in this chapter, and the consequences of noncompliance with these acts.

Under this program, workers will be informed about the presence, life history, and habitat requirements of all special-status species that may be affected in the project area. Training also will include information on state and federal laws protecting nesting birds, wetlands, and other water resources.

An educational brochure will be produced for construction crews working on the project. The brochure will include color photos of sensitive species as well as a discussion of relevant APMs. In particular, construction personnel will be directed to stop work and contact the biological monitor if special-status species are observed.

***APM BIO-2: Conduct Preconstruction Survey(s) For Special-Status Species and Sensitive Resource Areas.***

A qualified biologist will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species. If a special-status species is encountered during the pre-construction survey(s), PG&E will be contacted immediately to determine the appropriate course of action. For state- or federally listed species, PG&E will contact the appropriate resource agency (CDFW and/or USFWS), as required.

***APM BIO-3: Identification and Marking of Sensitive Resources***

Sensitive biological resource areas identified during pre-construction surveys in the project area will be clearly marked in the field or on project maps. Sensitive resource areas will include active bird nests within specified buffer zones (see APM BIO-11), special-status plants, special-status vegetation types, vernal pools and wetland boundaries in/or adjacent to work sites. Such areas will be avoided during construction to the extent practicable.

***APM BIO-4: Biological Monitoring***

A qualified biologist will monitor ground-disturbing activities in and adjacent to areas identified in APM BIO-3 to ensure compliance with BMPs and APMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the qualified biologist. The monitor will have authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.

If a listed wildlife species is encountered during construction, project activities will cease in the area where the animal is found until the qualified biologist determines that the animal has moved out of harm's way, or with prior authorization from the USFWS and/or CDFW if required, relocates the animal out of harm's way, and/or takes other appropriate steps to protect the animal. Work may resume once the qualified biologist has determined that construction activities will not harm any listed wildlife species. The PG&E biologist will be responsible for any necessary reporting to USFWS and/or CDFW.

***APM BIO-5: Restore Habitat for Special-Status Plants Disturbed During Construction***

In the unlikely event special-status plant species cannot be avoided, PG&E will stockpile separately the upper 6 inches of topsoil during excavations of special-status plant species habitat. PG&E will use the stockpiled topsoil to restore the area after temporary construction

has been completed. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. Restoration and reseeding methods using a California native seed mix will be used to restore the sites.

***APM BIO-6: Avoid or Minimize Impacts on Habitat for Special-Status Vernal Pool Species***

PG&E will implement the following measures to reduce potential impacts on vernal pool species and habitat within the project area. These measures may be refined during the Section 7 consultation process conducted for the project with the USFWS.

- Where feasible, the project will avoid and minimize direct and indirect impacts on vernal pool species and their habitat.
- Where feasible, new structures will be located outside of suitable habitat features; and work areas and temporary overland access routes will avoid vernal pool habitats.
- Where feasible, ground-disturbing activities in and adjacent to vernal pools will be conducted during the dry season (generally May 1 to October 15).
- Any ground-disturbing activities taking place within 50 feet of suitable aquatic habitat for vernal pool species will be minimized by: limiting the duration of work, using rubber tire vehicles to reduce soil compaction, and restricting ground disturbance to well-defined, small work areas.
- If construction activities must occur on the ground during the wet season, PG&E will implement BMPs consistent with the Storm Water Pollution Prevention Plan (SWPPP) (see APM HYDRO-1), which may include silt fencing to minimize impacts on vernal pool habitat.

***APM BIO-7: Compensate for Permanent Impacts on Habitat for Vernal Pool Species in Accordance with USFWS Biological Opinion (BO)***

As directed by the USFWS BO for the project, PG&E will provide off-site compensation for permanent impacts on vernal pool species habitat at a minimum ratio of 1 acre preserved or created for each acre of direct impact by the project. PG&E will provide this compensatory habitat at an off-site location, which may include acquiring mitigation credits at a USFWS-approved conservation area that supports vernal pool fairy shrimp. This mitigation ratio may be refined during the Section 7 consultation process conducted for the project with the USFWS.

***APM BIO-8: Avoid, Minimize, or Compensate for Any Impacts on Valley Elderberry Longhorn Beetle (VELB)***

PG&E's Valley Elderberry Longhorn Beetle (VELB) Conservation Program allows PG&E to perform routine operations and maintenance activities and new construction, subject to certain terms and conditions as specified in the USFWS Biological Opinion (File 1-1-01-F-0114) (VELB BO). The VELB BO provides for 30 years of incidental take coverage and

was issued on June 27, 2003. It defines reasonable and prudent measures required to avoid and minimize impacts on habitat for the federally listed VELB. PG&E will implement the surveying, avoidance, and any necessary compensation measures required for the Conservation Program as authorized by USFWS. These measures may include: (1) surveying for and flagging all elderberry plants with one or more stems measuring 1 inch or more in diameter at ground level that are within 20 feet of work sites; (2) avoiding all such elderberry plants to the extent feasible; and (3) reporting unavoidable impacts on elderberry shrubs to USFWS for coverage under the Conservation Program's funding of VELB habitat acquisition, development, and protection.

***APM BIO-9: Avoid and Minimize Impacts on Giant Garter Snake (GGS)***

PG&E will implement the following avoidance and minimization measures as may be refined during the permitting processes with USFWS and CDFW for the project.

- To the fullest extent possible, PG&E will avoid construction activities within 200 feet of the banks of GGS aquatic habitat. Habitat disturbance areas and vegetation clearance will be confined to the minimal area necessary to facilitate construction activities.

- As feasible, construction activity within GGS aquatic and upland habitat in and around agricultural ditches, irrigation and drainage canals, rice fields, and marshes and sloughs, will be conducted within the active period for GGS (i.e., between May 1 and October 1). Depending on weather conditions and consultation with USFWS and CDFW, it may be possible to extend the construction period into mid- or late October.

- When construction work must occur during the GGS dormant period (between October 2 and April 30), additional protective measures will be implemented, which may include: having a biological monitor in sensitive habitat areas or installation of exclusion fencing to prevent giant garter snakes from establishing hibernacula in work areas.

- Prior to any construction within suitable GGS aquatic habitat, the habitat will be dewatered and must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling dewatered habitat.

- Pre-construction surveys in suitable GGS habitat will be conducted in accordance with APM BIO-2. The construction area will be resurveyed whenever there is a lapse in construction activity of 2 weeks or more.

- If a GGS is encountered within the construction work area, construction activities will be suspended in accordance with APM BIO-4. Based on the results of preconstruction surveys conducted under BIO APM-2, the qualified biologist will coordinate with the PG&E biologist to determine whether to install exclusion fencing to keep GGS out of the construction area.

- In accordance with BIO-12, conduct service and refueling procedures will be conducted in uplands at least 100 feet away from wetlands or waterways to minimize potential harm to aquatic species from water quality degradation.

### *APM BIO-10: Compensate for Loss of Giant Garter Snake Aquatic and Upland Habitat in Accordance with USFWS Biological Opinion*

For any GGS aquatic and upland habitat that cannot be avoided, PG&E will preserve a compensatory amount of GGS habitat, including acquiring mitigation credits at a USFWS - approved conservation area that supports GGS. PG&E will provide off-site compensation for permanent impacts on GGS habitat at a minimum ratio of 1 acre preserved for each acre of impacts, or as otherwise required by the USFWS and the CDFW during the permitting processes for the project.

### *APM BIO-11: Avoidance and Minimization of Impacts on Nesting Birds*

If work is scheduled during the nesting season (February 15 through August 31), nest detection surveys will be conducted within a standard buffer for individual species in accordance with the species-specific buffers set forth in Appendix D of the PEA and will occur within 15 days prior to the start of work activities at designated construction areas, staging areas, and landing zones to determine nesting status by a qualified wildlife biologist. Nest surveys will be accomplished by ground surveys and/or by helicopter and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 15 days between March and July. Access for ground surveys will be subject to property access permission. Helicopter flight restrictions for nest detection surveys may be in effect for densely populated residential areas, and will include observance of appropriate established buffers and avoidance of hovering in the vicinity of active nest sites.

If active nests containing eggs or young are found, the biologist will establish a species-specific nest buffer, as defined in Appendix D of the PEA. Where feasible, standard buffers will apply, although the biologist may increase or decrease the standard buffers in accordance with the factors set forth in Appendix D. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing nest buffers. The established buffers will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist. Active nests will be periodically monitored until the biologist has determined that the young have fledged or all construction is finished. Per the discretion of the biologist, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. Inactive nests may be removed in accordance with PG&E's approved avian permits. The biologist will have authority to order the cessation of nearby project activities if nesting pairs exhibit signs of disturbance.

### *APM BIO-12: Implement General Protection Measures for Wetlands and Other Waters*

PG&E will implement the following general measures, in addition to those outlined in Section 2.8.8, Best Management Practices, to minimize or avoid impacts on wetlands and other waters:

- Avoid wetlands and other waters as identified in BIO APM-3.
- Establish overland access routes to avoid wetlands and other waters to the extent feasible.
- Conduct all fueling of vehicles at least 100 feet from wetlands and other water bodies.

- Set staging areas back at least 50 feet from streams, creeks, or other water bodies.

Additionally, PG&E will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to prevent construction-related erosion and sediments from entering nearby waterways (see APM HYDRO-1).

***APM BIO-13: Compensate for Permanent Impacts on Wetlands and Other Waters in Accordance with Project Permits***

PG&E will compensate for permanent impacts on wetlands with at least a 2:1 ratio of acre restored or created to acre filled. Final compensation ratios will be based on site-specific information and determined through coordination with the US Army Corps of Engineers and the Central Valley Regional Water Quality Control Board as part of the permitting processes for the project.

***APM BIO-14: Restore Temporarily Impacted Wetlands and Other Waters***

All wetlands and other waters that are temporarily disturbed as a result of project activities will be restored upon completion of construction.

#### 3.4.4.3 Potential Impacts

Potential project impacts on biological resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and O&M phase.

The impact analysis is based on project information provided in Chapter 2.0, Project Description, and on information gathered during reconnaissance field surveys and the wetland delineation. The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, with new support structures and modifications to existing structures within the existing utility corridor. The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts on biological resources will occur. Accordingly, the impact analysis is focused only on construction activities, as described in Chapter 2.0, Project Description.

Impacts on biological resources from the project may be temporary or permanent. Temporary impacts would occur during construction activities and be short term (i.e., lasting only during the period of construction or subsequent site restoration). The temporary impacts consist of disturbance associated with construction, such as temporary access roads, work areas, installation of temporary snub poles, pull sites, and staging/work areas. Permanent impacts are those that would result in the permanent loss of biological resources from the placement of power poles or other permanent structures. Most of the impacts on biological resources associated with this project will be temporary in nature.

**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 Wildlife or U.S. Fish and Wildlife Service? *Less than Significant***

Construction work associated with the project, as described in Section 2.5, Proposed Project through Section 2.8, Construction, could directly or indirectly (through habitat modification) affect sensitive wildlife and fish species. The following sensitive species could be affected.

### *Special-Status Plant Species*

**Potential temporary and permanent impacts on special-status plants—*Less than Significant***

Suitable habitat for special-status plants is present in the project area. Special-status plants can be damaged or destroyed as a result of vegetation removal or trimming before construction, and by ground disturbance associated with temporary construction activities, such as work areas, staging areas, pull sites, and temporary access roads. Potential permanent impacts on special-status plants could result from placement of the new towers.

Special-status plants also could be indirectly affected by soil compaction, alteration of the hydrological regime, and the introduction and spread of invasive plant species from project vehicle and equipment travel and staging. Impacts may be temporary or permanent, depending on the type of activity.

PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, and APM BIO-5 to avoid and minimize impacts on sensitive plant species. With implementation of these APMs, and because project impacts will be mostly temporary and will avoid exacerbating the factors that contribute to the rarity of these species (e.g., will not increase urbanization, roads, or habitat fragmentation; and will not alter the hydrological regime), project activities will have less-than-significant impacts on special-status plants.

Vegetation removal, ground disturbance, and vehicle use at work areas are among the principal risk factors for the introduction and spread of invasive plant species. Construction of staging areas, temporary access roads, and other ground-disturbing activities may introduce invasive plants into previously uninfested areas and cause previously existing infestations to spread. Invasive plants can negatively affect the vigor and abundance of native species and can modify habitats, which could ultimately cause an area to become unsuitable for common and special-status species. Implementing APM BIO-1, APM BIO-2, APM BIO-3, and APM BIO-5 will avoid, protect, and restore habitats affected by the project and would ensure that the risk that project activities could introduce and spread invasive plants into the project area will be less than significant.

### Special-Status Wildlife Species

*Invertebrates*

**Impacts on vernal pool species—*Less than Significant***

Conservancy fairy shrimp has low potential to occur in the project area, while vernal pool fairy shrimp and vernal pool tadpole shrimp are likely to occur in the vernal pools and seasonal wetlands along the South of Palermo Line south of Cox Lane to approximately Middle Honcut Road, and from North Beale Road south to approximately Bear River. The direct removal, filling, and hydrological interruption of vernal pools, seasonal wetlands, and other suitable habitat or the surrounding uplands (i.e., annual grassland habitat) could have an impact on special-status vernal pool species and their habitat.

The majority of ground-disturbing construction activities such as staging, grading, installation of new pole foundations, and excavation within suitable vernal pool habitat will be performed during the dry season (generally May 1 to October 15) to the extent feasible, thereby minimizing temporary or permanent impacts on suitable habitat. Ground-disturbing construction activities during the wet season (generally October 16 to April 30), generally will include truck traffic to certain tower locations and reconductoring activities at pull sites, helicopter landing zones, and staging area locations. Helicopters will be used to install new poles during the wet season to avoid and minimize ground disturbance to vernal pool species habitat features.

A portion of the project area overlaps with the WPIC levee project (TRLIA 2015), however there are no habitat features for sensitive vernal pool species in the project footprint of impacts that overlap with the WPIC project footprint.

The potential vernal pool species impacts associated with this project are different from most projects that involve filling or trenching through vernal pool species habitat. The removal of existing lattice tower structures with four concrete foundation footprints and replacement with one slightly larger foundation footprint, will result in less than approximately 0.05 acre per structure of permanent impacts on vernal pool habitat. Due to the existing habitat conditions present in the project area, the existing utility O&M practices, and timing of proposed construction activities (i.e., primarily during the dry season), it is anticipated that the vast majority of potential habitat features located in the project area would not be affected and the remainder would continue to provide a similar ecological value to listed vernal pool species after project implementation.

The three types of potential impacts on vernal pool species associated with the project are identified below.

**Permanent Direct.** The project has been designed to avoid or minimize direct adverse impacts on vernal pools to the extent practicable, taking into consideration engineering design requirements for the power line reinforcement and the need to maintain safety during construction. However, permenent impacts cannot be avoided and may directly affect the surrounding vernal pool, per USFWS guidelines. Installation of three new poles located within

suitable vernal pool species habitat may result in permanent direct impacts on approximately 2.3[3] acres of suitable habitat.

**Temporary Direct.** Due to the linear nature of the project and the number of wetland features along the project ROW, a limited number of temporary construction work areas will need to be placed in vernal pools. The majority of temporary direct effects on vernal pool species would occur during the dry season; this work would be short term and will be limited to defined work spaces. Temporary direct impacts from construction activities during the wet season will be limited to necessary landing zones, pull sites, and work areas. Construction activities would result in some surface disturbance, but would not involve excavation. These construction activities would include creating staging areas to construct new poles and towers and driving overland access to tower locations in remote areas, which may temporarily affect approximately 6.0 acres of suitable vernal pool species habitat.

**Indirect Impacts.** Indirect impacts result from disturbances that occur outside of the vernal pool species wetland feature, such as surrounding upland, but are close enough to have a potential indirect effect on the species. PG&E identifies construction activities located within 0 to 50 feet of a vernal pool species habitat as having the potential for indirect impacts on these sensitive species. Indirect impacts may occur from soil erosion or dust generated from construction activities, changes in hydrology or local drainage patterns around suitable habitat that have the potential to degrade vernal pool species habitat, and the introduction of exotic predators that can prey upon vernal pool species. With the implementation of APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, and APM BIO-6, and utilization of BMPs, project activities during the dry season will avoid temporary indirect impacts on vernal pool habitat. Temporary indirect impacts will occur only when construction activities take place during the wet season. Approximately 2.8 acres of suitable habitat are located within 50 feet of proposed work areas and may be temporarily affected by wet-season construction. This work will be short term and will be limited to small, defined work spaces and minimal overland access. Where construction occurs within 50 feet of vernal pool habitat, construction BMPs will be implemented to ensure that construction activities minimize effects on the habitat.

PG&E has designed the project to avoid features that may provide habitat for vernal pool species to the greatest extent possible. The majority of ground-disturbing construction activities will take place during the dry season (generally May 1 to October 15), which will minimize direct impacts or potential indirect impacts on vernal pool habitat features. In addition, PG&E will be using helicopters where feasible to complete work necessary in the wet season, which will further minimize ground disturbance.

To compensate for unavoidable impacts on vernal pool habitat, PG&E will provide off-site vernal pool habitat, which may include acquiring mitigation credits at a USFWS-approved conservation area that supports Conservancy fairy shrimp, vernal pool tadpole shrimp, or vernal pool fairy shrimp pursuant to APM BIO-7.

[3] This acreage includes the entire footprint of any vernal pool that will be touched during construction activities, including pole removal sites, per the USFWS *Programmatic Formal Endangered Species Act Consultation with US Army Corps of Engineers on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans* Within the Jurisdiction of the Sacramento Field Office, California, 1996.

There is one vernal pool species habitat feature located within the project footprint that was included and compensated for as part of the Palermo–East Nicolaus 115 kV Transmission Line Project. Mitigation totaling 0.693 acre was previously provided by PG&E to compensate for permanent impacts to this feature that overlaps with both projects. Therefore, this acreage amount will be subtracted from the compensatory mitigation total when it is finalized.

All preservation or creation of habitat proposed to compensate for impacts on vernal pool habitat would occur off-site at an agency-approved location, such as the Westervelt Ecological Meridian property, which was approved by USFWS as acceptable off-site mitigation for vernal pool fairy shrimp as part of the Section 7 consultation process for the Palermo–East Nicolaus 115 kV Transmission Line Project.

PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, and APM BIO-6 to minimize and avoid impacts on vernal pool fairy shrimp species. PG&E will implement APM BIO-7 to compensate for any unavoidable impacts on vernal pool species habitat. With the implementation of these APMs, seasonal restrictions, and the minimal temporal impacts on suitable vernal pool habitat, PG&E will avoid the loss of individual special-status vernal pool species and will ensure that impacts on special-status vernal pool species and habitat will be less than significant.

**Impacts on VELB—*Less than Significant***

Construction activities will potentially affect elderberry shrubs or clumps of elderberry shrubs that provide suitable habitat for VELB. Elderberry plants in the project area with one or more stems 1 inch or greater in diameter at ground level are considered suitable habitat and may be utilized by the beetle. Any project activity that will require significant trimming or removal of such elderberry shrubs can directly affect VELB and its habitat. Removing riparian vegetation associated with elderberry shrubs may result in overall habitat degradation and indirect impacts on VELB habitat. Elderberry shrubs were identified within the construction area and may be directly affected by construction-related activities. Shrubs or clumps located within 20 feet of the proposed construction work area may be indirectly affected by the project. Indirect impacts could result in loss of suitable VELB habitat.

Potential direct and indirect impacts on VELB and its habitat will be covered through PG&E's existing Programmatic Biological Opinion for VELB (June 11, 2014, 81420-2008-F-0194-R001-3).

The loss of elderberry shrubs is not likely to substantially reduce the availability of suitable habitat in the overall project region. Implementation of APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, and APM BIO-8 will avoid and minimize direct and indirect impacts on VELB and VELB habitat, and APM BIO-8 will also compensate for any unavoidable impacts. Implementation of these APMs will ensure that impacts on VELB and its habitat will be less than significant.

**Impacts on Central Valley spring-run Chinook salmon, Sacramento splittail, and Central Valley steelhead—*Less than Significant***

Construction activities crossing seasonal drainages and perennial rivers will occur; however, no in-water work is being proposed. Accordingly, the project will not result in any direct impacts on special-status fish habitat, including spawning-nursery-rearing habitat. Indirect impacts could occur from trimming riparian trees, which provide in-stream cover, streamside shade to help keep water temperatures cool, potential habitat for insects (i.e., a food source for foraging fish), and natural sources of nutrients.

Impacts on riparian vegetation will be avoided or minimized under APM BIO-1, APM BIO-2, and APM BIO-3, and through the CDFW Lake and Streambed Alteration Agreement permit conditions. By avoiding any in-water work and incorporating BMPs and APMs to protect water quality, the project will not affect Chinook salmon and steelhead critical habitat or habitat for the Sacramento splittail. Accordingly, project activities will have less-than-significant impacts on special-status fish habitat in the project area.

*Amphibian*

**Impacts on California red-legged Frog (CRLF)—*Less than Significant***

Construction activities could result in direct loss of individual CRLF and disruption of movement during the breeding season. Construction activities that affect wetlands, aquatic resources, and upland habitat could result in temporary loss of potentially suitable habitat for the species.

PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, APM BIO-12, to further reduce less-than-significant potential impacts on CRLF and its habitat.

**Impacts on western spadefoot toad —*Less than Significant***

If western spadefoot toads are present within upland habitats in the construction area, construction activities could result in direct loss of individuals and disruption of movement during the breeding season. Impacts on grassland, woodland, vernal pools, wetlands, and intermittent streams in the project area could result in temporary loss of habitat for western spadefoot toad.

PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, APM BIO-6, and APM BIO-12, which will further minimize impacts on western spadefoot toad and will ensure that impacts on western spadefoot and its habitat will be less than significant.

*Reptile*

**Impacts on coast horned lizard—*Less than Significant***

If coast horned lizards are present within upland habitats in the construction area, construction activities could result in direct loss of individuals and disruption of movement during the

breeding season. Coast horned lizards could be injured or killed by project vehicles or construction equipment, and coast horned lizard habitat could be removed or damaged during project construction. Impacts on grassland and woodland habitat with sandy soil in the project area could result in temporary loss of habitat for coast horned lizard.

PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, and APM BIO-4, which will further reduce potential less-than-significant impacts on habitat for coast horned lizards.

**Impacts on giant garter snake (GGS)—*Less Than Significant***

The project crosses through a region that is known to support GGS. In particular, the power lines cross through rice fields and drainages that provide suitable aquatic habitat for this species. Upland habitats (e.g., banks of drainages and grasslands within 200 feet from drainages, including canals and agricultural ditches) provide suitable upland refuges and hibernacula (shelter for hibernation) for GGS. Construction activities (i.e., staging, grading, and excavation) have the potential to cause direct mortality to GGS and crush nests and eggs, reducing local population size, or lowering reproductive success of the species. Construction activities associated with the project could result in removing suitable GGS aquatic and upland habitat. Impacts on suitable aquatic and upland habitat for GGS would be both permanent and temporary, as described below.

**Permanent Impacts.** Permanent direct impacts may be caused by the placement of permanent structures in the project area and may result in direct mortality of GGS, disruption of movement during the breeding season, and loss of suitable aquatic or upland habitat. The installation of new transmission towers or poles may result in permanent direct impacts on up to 0.05 acre of suitable aquatic habitat (e.g., rice fields, freshwater marsh etc.) and approximately 0.095 acre of suitable upland habitat (e.g., grassland habitat or habitat within 200 feet of aquatic habitat). The project has been designed to avoid or minimize direct adverse impacts on GGS habitat to the extent practicable, taking into consideration engineering design requirements for the power line reinforcement and the need to maintain safety during construction.

**Temporary Impacts.** Temporary impacts are caused by project activities that result in temporary removal of aquatic and upland habitat that can be restored post construction. Due to the linear nature of the project and the number of wetland features along the project ROW, a limited number of construction work areas will need to be temporarily placed in suitable aquatic and upland habitat for GGS. Such impacts to aquatic and upland habitat would be temporary and the habitat would be restored upon construction completion. Construction activities in staging areas to assemble new poles and remove old towers may temporarily disturb an approximate total of 71 acres of GGS habitat (3.5 acres aquatic, 22.4 acres rice field, and 44.7 acres upland). Acreage calculations for upland habitat were determined by incorporating a 200-foot-wide buffer zone around suitable aquatic habitat[4]. Most of the project-related impacts on GGS will be temporary,

[4]The width of 200-feet from the edge of each bankside habitat is the distance the USFWS uses to identify suitable giant garter snake upland habitat. Based on radio-telemetry studies, the USFWS defines a giant garter snake habitat unit as 2-acres of surrounding upland habitat for every 1-acre of aquatic habitat. The 2-acre of upland habitat may be defined as 218 linear feet of bankside habitat, which incorporates adjacent uplands to a width of 200 feet from the edge of the bank (USFWS 1999).

resulting from activities within temporary work areas and overland access. Temporary disturbance of suitable aquatic and upland sites in or near the construction footprint will be avoided to the extent feasible, and the loss of aquatic habitat and grassland vegetation would be minimized with the implementation of BMPs and APM (as described below).

The highest risk of injury and direct mortality to GGS is from late fall through early spring, when the snakes are dormant. To minimize potential for direct impacts on GGS habitat to the fullest extent possible, all construction access and work site preparation involving clearing and ground disturbance will take place between May 1 and October 1 to the extent feasible, during the snakes' active season when the potential for direct mortality is reduced because the snakes can actively move and avoid danger. However, some construction work may also take place during the GGS dormant period (October 2 to April 30). Construction activities during the snake dormant period may include some overland truck traffic to tower locations and reconductoring activities from pull sites, helicopter landing zones, and staging area locations. Where new poles will be installed during the dormant period and within GGS upland habitat, poles may be installed with helicopters to avoid and minimize ground disturbance. Implementing APM BIO-9 will further reduce the potential for direct impact during this time period.

Temporary and permanent loss of aquatic and upland habitat, potential loss of individuals, and disrupted movement during the breeding season would be considered a significant impact on the species. Because the project could result in take of GGS, PG&E will complete a Section 7 consultation with USFWS as part of the permitting process with USACE, and will receive a BO and corresponding incidental take statement to cover any potential take of the species. To avoid or minimize potential take and substantial impacts on GGS and its habitat, PG&E will implement the conditions of the future BO and APM BIO-1, AMP BIO-2, APM BIO-3, APM BIO-4, APM BIO-9, and APM BIO-10. Implementing APM BIO-12 may provide additional benefits for GGS. These measures would minimize impacts on GGS and their habitat and ensure that impacts on GGS will be less than significant.

**Impacts on the western pond turtle—*Less than Significant***

Construction activities within suitable upland habitat may directly affect the species by crushing western pond turtles or pond turtle nests containing eggs or young. Indirect impacts could occur if sediments or hazardous materials enter suitable pond turtle aquatic habitat or if increased human presence disrupts normal foraging behaviors or movement during the breeding season, and could reduce local population size and lower reproductive success. PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3, and APM BIO-4 to further reduce less-than-significant potential impacts on habitat for western pond turtles.

*Birds*

**Impacts on special-status nesting birds, nesting raptors, and other migratory birds—*Less than Significant***

Nesting birds may be adversely affected if construction activities occur near active nests during the breeding season. If ground-nesting birds have active nests or have active burrows in and adjacent to the construction ROW, grading and excavation activities could result in removal of

an occupied breeding or wintering breeding site (i.e., burrow), destruction of a ground nest, and loss of adults, young, or eggs, resulting in direct impacts on nesting birds. Direct impacts could also include nest removal or destruction or abandonment of chicks and eggs during vegetation removal or trimming activities to provide construction equipment access for staging areas and work sites; and nest abandonment or premature fledging from construction-related noise and vibration (e.g., from heavy equipment, helicopters, vehicles, and generators). Modification to or removal of existing towers could result in direct impacts on nesting special-status raptors and non-special-status migratory birds that may use towers as nesting habitat. Construction traffic and use of a helicopter for construction activities could result in indirect loss of individual nesting birds or disruption of normal breeding activity. Indirect impacts could include degradation of foraging and nesting habitat through the removal of trees and shrubs. Nesting habitat could be indirectly disturbed by increased traffic, human activity, and noise associated with proposed construction activities. Project activities resulting in abandonment of active nests would violate the federal MBTA and California Fish and Game Code Sections 3503 and 3503.5, and could be considered a significant impact. Implementation of APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, and APM BIO-11 would ensure that the potential take of listed species' eggs or young would not occur, and therefore ensure that impacts on nesting bird species will be less than significant.

*Mammals*

**Potential disturbance of roosting bats—*Less than Significant***

Potential disturbance to roosting bats from the project include removal of roosting habitat by vegetation trimming and increased noise and vibrations associated with construction activities. Vegetation removal (e.g., trimming trees limbs and foliage) may potentially remove or disturb roosting habitat for pallid bat and western mastiff bat. Loss or disturbance of roosting habitat may result in direct impacts on a bat species if the vegetation removal kills roosting bats or removes roosting habitat.

The potential noise and vibration disturbance associated with the project would be temporary and intermittent. Given the short duration of construction activity at any single work location and implementation of noise reduction measures, increased noise levels from construction activity in any single location would not significantly affect roosting bats.

To further reduce potential impacts on roosting habitat (from vegetation trimming activities) PG&E will implement APM BIO-1, APM BIO-2, APM BIO-3 and APM BIO-4 to ensure that roosting habitat would not be disturbed and thereby ensure that impacts on roosting bats will be less than significant.

**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 Wildlife or U.S. Fish and Wildlife Service? *Less than Significant***

Three riparian and other natural communities that CDFW identifies as sensitive are present within the project area: Great Valley Cottonwood Riparian Forest, Great Valley Oak Riparian

Forest, and Northern Hardpan Vernal Pool (see Figure 3.4-1, Sensitive Vegetation Communities).

Riparian habitat and associated freshwater marsh habitat occur in the project area at the Feather River, Yuba River, Bear River, Honcut Creek, and Wilson Creeks. Some minor trimming of riparian vegetation may be necessary to provide construction equipment access and prepare work areas for tower modifications and upgrades.

No riparian trees are anticipated to be removed during project construction. With the implementation of APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-4, and APM BIO-5, as well as the riparian protection measures in the CDFW Lake and Streambed Alteration Agreement to be acquired for the project, the project will not have a substantial adverse impact on riparian habitat. Consequently, this impact is considered less than significant.

Impacts on wetlands and waters are discussed under criterion (c) below.

**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***

**Potential temporary and permanent impacts on waters of the United States, including wetlands—*Less than Significant***

All potentially jurisdictional waters of the United States (wetlands and other waters, "WUS") in the project area were identified in the aquatic resources delineation report prepared for the project (PG&E 2016). Each WUS feature identified in the delineation report is assigned an impact category: Permanent Impact (new structure), Direct Temporary Impact (WUS within work area or temporary road), or No Impact (WUS outside of the project footprint).

The project has been designed to avoid vernal pools and wetlands; replacement structures will be located outside of vernal pools to the greatest extent possible to reduce long term maintenance impacts on wetlands. The project will completely avoid impacts on other waters (i.e., nonwetlands), but some impacts on vernal pools and wetlands are unavoidable. These are described below.

The majority of impacts will be temporary and located in rice fields. The majority of ground-disturbing activities will take place during the dry season (generally May 1 to October 15) to further minimize direct impacts and potential indirect impacts on vernal pool and wetland features. PG&E will implement APM BIO-2, APM BIO-3, APM BIO-12, APM BIO-13 and APM BIO-14 to avoid, minimize and compensate for impacts on vernal pools and wetlands. Implementing these APMs will ensure that impacts on vernal pools and wetlands habitat will be less than significant.

> **Permanent Direct Impact.** Project construction activities may result in less than 0.01 acre of permanent direct impacts on vernal pool wetlands, up to 0.08 acre of permanent impacts on other wetlands, related to the placement of new footings or poles. The project

will not have impacts on other waters. The extent of the permanent impacts on wetlands will vary among the new structure footing sites, but the maximum extent of the permanent impact acreage, per new structure location, is estimated to be a 7.5 foot diameter circle amounting to less than 0.001 acre per footing. The resulting footprint of disturbance post construction will be essentially unchanged compared to the existing conditions. Due to the existing habitat conditions and existing utility O&M practices, the majority of the wetland features would not be affected and the remainder of these features would continue to provide a similar habitat value after project implementation. Where feasible, new structure footings have been relocated to avoid wetlands, and the majority of work will occur in the dry season. The amount of permanent impact on wetland habitat would be very small relative to the entire amount of wetland habitat present in the region. This impact would not likely hydrologically disrupt, result in habitat fragmentation, or result in local loss of breeding habitat for wetland species.

**Temporary Direct Impact.** Project construction activities may result in up to 0.17 acre of temporary direct impacts on vernal pool wetlands. Short-term disturbances from temporary overland access and work areas located within a wetland feature may result in up to 28.9 acres of temporary direct impacts on other (non-vernal pool) wetlands, 26.5 acres of which are cultivated rice fields. No temporary impacts are anticipated on other waters of the U.S. Temporary direct impacts from construction activities during the wet season will be limited to approved landing zones, pull sites, and work areas. Construction activities would involve primarily surface disturbance and would not involve excavation; in addition, helicopters will be used to avoid temporary ground disturbance. The majority of temporary direct effects on wetlands would occur during the dry season. This work will be short term and will be limited to defined work spaces.

In total, the South of Palermo Line project construction may cause approximately 0.09 acres of permanent impacts on wetlands and waters of the U.S. and up to 29.1 acres (26.5 acres of which are cultivated rice fields) of temporary impacts on wetlands and waters of the U.S. The actual impacts to wetlands and waters will be determined in the field during construction. PG&E will determine the actual number of wetlands permanently impacted in consultation with agencies, and will compensate for those impacts based on APM BIO-13.

Removing existing towers at approximately 80 tower sites (including approximately 7 sites in freshwater marsh, approximately 11 sites in seasonal wetlands, and approximately 62 sites in rice field wetlands) will reduce the potential for long term impacts to wetland habitat associated with ongoing maintenance. PG&E will implement the following measures to avoid, protect, minimize, and compensate for these potential impacts: APM BIO-1, APM BIO-2, APM BIO-3, APM BIO-5, APM BIO-6, APM BIO-12, APM BIO-13, and APM BIO-14. APM BIO-14 will ensure restoration of temporarily affected areas of wetland. Compensation for permanent impacts on wetlands will be provided with APM BIO-13. Additionally, APM HYDRO-1 will include implementation of a SWPPP to protect water quality during construction. With implementation of these APMs, project impacts on wetlands and other waters will 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?** ***No Impact***

The project area is adjacent to large tracts of agricultural lands and near important wildlife areas. Wildlife corridors in the project area consist of creeks, drainages, agricultural fields and ditches, and riparian habitat.

The project will not include construction of any elements that will block wildlife movement; therefore, impacts on the movement of wildlife species are not anticipated. Butte Creek, Big Chico Creek, Little Butte Creek, and Dry Creek support migratory spring-run Chinook salmon and steelhead. The lower Yuba River is managed for the protection and migration of wild salmon and steelhead trout. The Feather River provides a migratory corridor for fish species. The project will not include any in-water construction and, therefore, will not interfere with the movement of migratory fish.

The project will not interfere with the movement of any native resident wildlife species, nor impede the use of any wildlife nursery sites. Accordingly, there will be no impact on wildlife connectivity and migration corridors.

**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?** ***No impact***

Implementing the project will require tree trimming to establish temporary access roads, temporary work areas, and staging areas as well as for the maintenance of existing access roads and during the removal of old towers. The tree trimming would be a temporary impact; no trees, other than a few crop/orchard trees, are planned to be removed (i.e., permanently affected) as part of the project.

Butte, Yuba, and Sutter counties' general plans specify local provisions and ordinances protecting biological resources, which include oak woodland and riparian habitat; however, the provisions apply to development projects within county jurisdiction, and do not apply to this project, which is regulated by the CPUC and will not be subject to local land use regulations. In any event, the project is consistent with county general plan policies protecting biological resources and does not include the removal of any Oak trees. Accordingly, the project will not conflict with any local policies or ordinances protecting biological resources and there will be no impact.

**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 would not conflict with an adopted HCP, NCCP, or other conservation plan. The project area is located within the planning areas for the Butte Regional Conservation Plan and the Yuba-Sutter Regional Conservation Plan; however, these plans have not been approved by plan partners and/or by resource agencies. Therefore, project implementation would not conflict with provisions of an approved conservation plan and there will be no impact.

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# 3.5 CULTURAL RESOURCES

## 3.5.1 INTRODUCTION

This section describes existing conditions and potential impacts on cultural and paleontological resources as a result of construction, operation, and maintenance of the project. It presents the methods and results of cultural and paleontological resources studies of the project area. Cultural resources within the project area include 17 identified sites. The analysis concludes that impacts on cultural and paleontological resources will be less than significant. Incorporation of the Applicant-Proposed Measures (APMs) described in Section 3.5.4.2 will further minimize potential less-than-significant impacts on cultural resources. The project's potential effects on cultural and paleontological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.5-1 and discussed in more detail in Section 3.5.4. The following summary concerning cultural resources is derived from the confidential Cultural Resources Survey Report and Paleontological Technical Study, which will be submitted separately to CPUC staff.

**Table 3.5-1: CEQA Checklist for Cultural and Paleontological Resources**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | ☐ | ☐ | ☒ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 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? | ☐ | ☐ | ☐ | ☒ |

## 3.5.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.5.2.1 Regulatory Background

#### *Federal*

*National Historic Preservation Act*

The project will likely require a permit under Section 404 of the Clean Water Act, and therefore, is subject to compliance with Section 106 of the National Historic Preservation Act (54 USC 306108) to address potential impacts to historic properties (resources that are eligible for listing on the National Register of Historic Places [NRHP]).

### *State*

#### *California Register of Historical Resources*

Under Section 21083.2 of CEQA, an important archaeological or historical resource is an object, artifact, structure, or site that is listed on, or eligible for listing on, the California Register of Historical Resources (CRHR). Eligible resources are those that can be clearly shown to meet any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

2. Is associated with the lives of persons important in our past

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value

4. Has yielded, or may be likely to yield, information important in prehistory or history

Automatic listings include properties that are listed on the NRHP. In addition, Points of Historical Interest nominated from January 1998 onward are to be jointly listed as Points of Historical Interest and in the CRHR.

Resources listed in a local historic register or deemed significant in a historical resources survey, as provided under PRC Section 5024.1(g), are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates that they are not. A resource that is not listed on or determined to be ineligible for listing on the CRHR, not included in a local register of historical resources, or not deemed significant in a historical resources survey may nonetheless be historically significant, as determined by the lead agency (PRC Section 21084.1 and Section 21098.1).

A fossil is generally defined as a remnant or trace of an organism of a past geologic age. Most paleontologists in North America use 10,000 years BP (roughly the boundary between the Pleistocene and Holocene). There are currently no criteria under CEQA to determine the significance of a fossil specimen or geological formation. PG&E therefore generally follows the federal definition of significant fossils as unique, rare, or particularly well-preserved; an unusual assemblage of common fossils; being of high scientific interest; or providing important new data concerning several key research interests in the study of evolution (Federal Land Management and Policy Act of 1976).

#### *Assembly Bill 52*

Assembly Bill (AB) 52 established that Tribal Cultural Resources (TCR) must be considered under CEQA and also provided for additional Native American consultation requirements for the Lead Agency. A TCR is a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A TCR is either:

1. On the California Register of Historical Resource or a local historic register;

2. Eligible for the California Register of Historical Resource or a local historic register; or

3. The lead agency determines that the resource meets the register criteria.

A project that has potential to impact a TCR such that it would cause a substantial adverse change constitutes a significant effect on the environment unless mitigation reduces such effects to a less-than-significant level. The Governor's Office of Planning and Research must issue revised CEQA Guidelines to incorporate AB 52 requirements by July 1, 2016. However, compliance with the law is required beginning July 1, 2015 (prior to issuance of guidance).

#### *California Health and Safety Code and Public Resources Code*

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030).

Several provisions of the Public Resources Code also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment.

PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites, defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

### *Local*

Background research indicated that no cultural resources designated for local listing have been documented in the project area. Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary land use regulations.

## 3.5.2.2 Methodology

### *Cultural Resources*

#### *Records Search and Historical Research*

Records searches were conducted at the Northeast Information Center (NEIC; Butte and Sutter Counties) and the North Central Information Center (NCIC; Placer and Yuba Counties) of the California Historical Resources Information System (CHRIS). CHRIS staff searched Information Center records for previous cultural studies and recorded cultural resources within the study area, which consists of the area of potential effects (APE) and a 0.25-mile radius

around it. These initial records searches were conducted on October 30, 2014 (NEIC), and November 11, 2014 (NCIC), and were restricted to the existing tower corridor within the APE (Pacific Legacy 2015).

Project archaeologists completed supplemental records searches on August 21 (NCIC) and 31, 2015 (NEIC), for elements added to the APE: project access roads, power line road crossings, and tower work areas. During these searches, the researchers consulted CHRIS records to identify all previous studies and recorded resources within the study area.

In addition, the following resources were consulted during the four records searches (Pacific Legacy 2015):

- Archeological determinations of eligibility for Sutter County
- Archeological determinations of eligibility for Yuba County
- California Department of Transportation Bridge Inventory for Butte, Sutter, and Yuba Counties
- *California Historical Landmarks* California State Lands Commission Shipwreck Database (Yuba County)
- Directory of Properties in the Historic Property Data File for Butte, Sutter, and Yuba Counties
- *Handbook of North American Indians*, Vol. 8, *California*
- Historic maps and survey plats (U.S. Geological Survey [USGS]) Palermo, Honcut, Sutter, Yuba City, Gilsizer Slough, Olivehurst, Nicolaus, Sheridan, Marysville, Gridley, Knights Landings, and Lincoln *Historic Spots in California*
- National Register of Historic Places Index of Determined Eligible Places
- The California Inventory of Historic Resources
- California Points of Historical Interest
- California Register of Historical Resources

### *Buried Site Sensitivity*

The surface geology of the APE is dominated by Holocene and Early Pleistocene deposits. The most common deposits in the APE are the Modesto and Riverbank Formations, with smaller amounts of stream channel and alluvial deposits. Given that the landforms in the APE vary from Early Pleistocene (~1.9 million to ~22,000 before present [B.P.]) to historical–modern (150 B.P. to present) in age, the potential for buried archaeological resources in such settings is variable (Meyer and Rosenthal 2008: Figure 47), requiring examination of other sources of information, such as soil surveys.

The majority of the APE consists of deposits characterized by San Joaquin and Redding-Corning series soils, which date to the Early Pleistocene. Given their age, these soils have a low probability of containing buried archaeological resources. A portion of the project, specifically the portion west of the Feather River, falls within the Tisdale series soils dating to the Late Holocene (4,000 to 150 B.P). This series is typified by a 40-inch soil depth, and buried soils have not been mapped in the area (Lytle 1988:93–94), though there is a high potential for buried archaeological resources in soils of this age (Meyer and Rosenthal 2008: Figure 47). Where the project crosses streams, the Sycamore-Shanghai series soils dominate. The Sycamore-Shanghai series ranges from the Late Holocene to Modern period in age. A buried A-Horizon[1] has been mapped from 29 to 62 inches below surface within the project area along the South of Palermo Line between Marysville and Linda, and Plumas Lake and Rio Oso (Lytle 1988: 2006:91), increasing the possibility of encountering buried archaeological sites.

In summary, much of the project APE is situated within Early Pleistocene landforms at large distances from modern watercourses (>500 feet), indicating a low potential for buried archaeological resources. In those few areas near modern watercourses (<500 feet) and within Late Holocene to Modern landforms, the potential varies from high to very high.

### *Archaeological Survey*

The cultural resources inventory of the proposed project focused on the APE, which included a 100-foot radius around each of the towers along the South of Palermo Line and the four sub line segments, as well as project access roads, road crossings, tower work areas, landing zones, and pole sites not previously surveyed.

Prior to the survey, any portion of an access road that was fully developed (i.e., paved or substantially graded) was designated as not requiring any further survey work because there will be no ground disturbance in these areas.

Access in certain areas was not available for a variety of reasons, including excess flooding or location in cultivated fields with zero ground visibility, in addition to occasional private property restrictions such as fenced or gated back yards without PG&E locks or cases where the landowner was not present or denied crews permission to enter. The inaccessible locations are identified on survey coverage maps in the confidential project cultural resources inventory report (Pacific Legacy 2015), which will be submitted separately to CPUC staff. Whenever possible, the inaccessible survey locations were photographed from a distance to document conditions. Records search information, buried site sensitivity, and survey results in the vicinity of the inaccessible areas were examined to determine the likelihood for sites to be present. Based on these factors, any unsurveyed areas appear to have low archaeological sensitivity.

### *Native American Coordination*

A search of the Sacred Lands Inventory maintained by the Native American Heritage Commission (NAHC) was requested on October 3, 2014. A response from the NAHC was received on October 14, 2014, stating that no Native American cultural resources were identified

1 An A-Horizon is the uppermost portion of a soil profile or "topsoil" consisting of the exposed mineral soil and underlying root zone, where the majority of biological activity, including human habitation, occurs.

in the immediate project area. The NAHC provided a list of 21 Native American individuals and organizations that may have knowledge of unreported resources or areas of concern. These individuals and organizations were contacted by certified letter on October 30, 2014. Interested stakeholder contacts are discussed in Appendix C. See Section 3.5.3.5 for results of Native American Consultation.

#### *Historical Resources Inventory and Evaluation*

The Historical Resources Inventory and Evaluation focused on transmission facilities within the project area more than 50 years old: the Caribou–Palermo 115kV Transmission Line, Palermo–Pease 115kV Transmission Line, Palermo–Bogue 115kV Transmission Line, Pease–Rio Oso 115kV Transmission Line, Bogue–Rio Oso 115kV Transmission Line, Rio Oso–Nicolaus 115kV Transmission Line, and Rio Oso–West Sacramento 115kV Transmission Line. The relationship of these individual lines to the project alignment is described in Chapter 2, *Project Description*. Because no significant modifications are proposed for the substations associated with the project transmission lines, no historic-era substations were evaluated.

Several segments of the project transmission lines have been previously researched (PG&E 2016). Archival research focused on synthesizing information provided by the previous studies, as well as research in PG&E archives and other local facilities to develop an appropriate historic context for analysis of the alignment. Documents reviewed included historic period maps and plans, periodicals, company literature and maintenance records, and photographic documentation, secondary contextual sources, and material related to the development of hydroelectric capacity in California and development of long-distance transmission infrastructure in the region.

Field methods included review of the alignment as well as photographic and written documentation of representative linear feature points along the alignment. Current photographs were compared to available historic views, engineering drawings, and written descriptions of the properties to assist in the identification of construction chronology.

### ***Paleontological Resources***

PG&E's consultants assessed the paleontological sensitivity of geologic units exposed in the project area through a search of the available geologic and paleontologic maps and literature and a records search of the University of California Museum of Paleontology (UCMP) locality and specimen database (Paleo Solutions 2015)

#### *Existing Information Review*

Paleontological research for this project included a review of existing data from the Palermo–East Nicolaus Project paleontological and monitoring report (Paleo Solutions 2015), the project's paleontological technical study prepared by Paleo Solutions, geologic maps, GIS mapping, literature search, updated institutional records search, and a sensitivity evaluation using the Potential Fossil Yield Classification (PFYC) system. The geology underlying the proposed construction sites was reviewed, as well as any geologic units occurring within a 1-mile radius of the project alignment. The literature reviewed included published and unpublished scientific papers. A paleontological records search was conducted at the University of California Museum

of Paleontology (UCMP) by Dr. Ken Finger. The search included fossil localities within a 0.5-mile radius of the proposed construction sites.

### *Paleontological Sensitivity*

Paleontological sensitivity is a qualitative assessment of paleontological potential made by a professional paleontologist taking into account the paleontological productivity of the stratigraphic units present. The assessment of paleontological productivity is based on prior fossil records, the local geology and geomorphology, and any other local factors that may be germane.

To address what would constitute a significant impact on paleontological resources, PG&E used the PFYC developed by the Bureau of Land Management (BLM) in Informational Memorandum 2008-009 (Bureau of Land Management 2009). In this system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. According to BLM guidelines, sensitivity comprises (1) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, whether large or small, vertebrate, invertebrate, or paleobotanical remains, and (2) the potential importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecological, or stratigraphic data. The classifications range from very low to very high, with associated numerical indicators (i.e., Class 1 to Class 5). The classification was applied to the geologic formation, member, or other distinguishable unit at the most detailed mappable level available. These standards are relevant to non-federal undertakings as well, and they are widely used by paleontologists because they provide for detailed analysis of paleontological sensitivity. Table 3.5-2 outlines the application of these standards.

**Table 3.5-2: Paleontological Sensitivity Ratings Employed**

| Categories of Paleontological Sensitivity | Definition |
|---|---|
| Class 1—Very Low | These geologic units are not likely to contain fossil remains. They include:<br>· Igneous or metamorphic units.<br>· Units Precambrian in age or older.<br>· Artificial or imported fill material. |
| Class 2—Low | These sedimentary geologic units are not likely to contain vertebrate or scientifically significant invertebrate fossils. These units have the following characteristics:<br>· Vertebrate or significant invertebrate or plant fossils not present or very rare.<br>· Units younger than 10,000 years before present.<br>· Recent aeolian deposits.<br>· Sediments that exhibit significant physical and chemical changes. |

| Categories of Paleontological Sensitivity | Definition |
|---|---|
| Class 3—Moderate or Unknown | These are fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and occurrence; or sedimentary units of unknown fossil potential. These units are broken down into sub-classifications and exhibit the following characteristics:<br>***Class 3a—Moderate Potential:***<br>· Marine in origin with sporadic occurrences of vertebrate fossils.<br>· Vertebrate and scientifically significant invertebrate or plant fossils occur intermittently, with low predictability.<br>The potential to impact a significant fossil is relatively low, although there is potential to impact common fossils.<br>***Class 3b—Unknown Potential:***<br>· Exhibits features and conditions that suggest significant fossils could be present, but is poorly studied and/or poorly documented.<br>The potential to impact a significant fossil is unknown. Potential yield cannot be assigned without additional assessment. |
| Class 4—High | These are geologic units with a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known and have been documented, but may vary in occurrence and predictability. Ground-disturbing activities have the potential to adversely affect resources if present. These units are broken down into sub-classifications and exhibit the following characteristics:<br>***Class 4a—High Exposed:***<br>· Unit is exposed with little or no soil or vegetative cover.<br>· Extensive outcrop areas with exposed bedrock.<br>The potential for encountering or disturbing a significant paleontological resource is moderate to high.<br>***Class 4b—High Buried:***<br>· Bedrock has high potential, but has moderating circumstances.<br>· Extensive soil or vegetation cover present; bedrock exposures are limited or not expected to be impacted.<br>· Areas of exposed outcrop are smaller than 2 contiguous acres.<br>· Outcrops forming cliffs of sufficient height and slope so that impacts are minimized by topography.<br>· Other characteristics are present that lower the vulnerability of known and unidentified paleontological resources.<br>The potential for encountering or disturbing a significant paleontological resource is moderate to high, but may be reduced by other environmental factors. |

| Categories of Paleontological Sensitivity | Definition |
|---|---|
| Class 5—Very High | These geologic units consistently and predictably produce vertebrate or scientifically significant invertebrate or plant fossils. Significant fossils are known and can be reasonably expected to occur within the impacted area. Ground-disturbing activities have the potential to adversely affect resources if present. These units are broken down into sub-classifications and exhibit the following characteristics:<br>***Class 5a—Very High Exposed:***<br>· Unit is exposed with little or no soil or vegetative cover.<br>· Extensive outcrop areas with exposed bedrock.<br>· Frequent exposure and collection of fossils.<br>The potential for encountering or disturbing a significant paleontological resource is high.<br>***Class 5b—Very High Buried:***<br>· Bedrock has very high potential, but has moderating circumstances.<br>· Extensive soil or vegetation cover present; bedrock exposures are limited or not expected to be impacted.<br>· Areas of exposed outcrop are smaller than 2 contiguous acres.<br>· Outcrops forming cliffs of sufficient height and slope so that impacts are minimized by topography.<br>· Other characteristics are present that lower the vulnerability of known and unidentified paleontological resources.<br>The potential for encountering or disturbing a significant paleontological resource is high, but may be reduced by other environmental factors. |
| Source: Adapted from the Bureau of Land Management's *Informational Memorandum 2008–009* (Bureau of Land Management 2009) | |

## 3.5.3 ENVIRONMENTAL SETTING

This section discusses the cultural resources setting for the project vicinity. It provides a brief summary of the prehistory, ethnographic information pertaining to the local Native American population, and a general history of the region beginning with Spanish settlement.

### 3.5.3.1 Prehistory

#### *Pleistocene/Holocene Transition: 12,000–8000 B.P.*

Archaeological evidence for human use of the Central Valley during the late Pleistocene and early Holocene epochs is scarce. At the end of the Pleistocene, circa (ca.) 12,000–8000 B.P., parts of the Sierra Nevada adjacent to the Central Valley were covered with large glaciers, and the valley provided a major transportation route for animals and people. This transportation corridor, perhaps rivaled only by maritime coastal travel, was undoubtedly used heavily by early Californians.

Although rare, the archaeological remains of these activities have been identified in the Central Valley (ICF 2009). Research completed in 2009 presents evidence for some use of the Mokelumne River area, under what is now Camanche Reservoir, during the late Pleistocene. These archaeological remains have been grouped into what has been called the Farmington Complex (ICF 2009). Recent archaeological investigations at CA-Sta-69 (in the vicinity of Farmington Complex type site CA-Sta-44), however, indicate that the Farmington Complex

assemblage at the site is contained completely within Holocene-age alluvial terrace deposits, not Pleistocene-age glacial outwash deposits. These findings raise the question of whether reinvestigation of other Farmington Complex assemblages will reveal a Holocene-age assemblage rather than a terminal Pleistocene age, as has been assumed (ICF 2009).

### *Early Horizon: 8000–4000 B.P.*

A generalized subsistence strategy worked well for the inhabitants of the Central Valley for many millennia. During the Early Horizon, beginning at approximately 6000 B.P., change in the subsistence strategy begins to take place. The beginnings of this intensification can be seen in what has been identified as the Windmiller Pattern and is based on the assemblage at the Windmiller site (ICF 2009).

Artifacts and faunal remains at Windmiller sites indicate that the people exploited a diverse range of resources, including seeds, a variety of small game, and fish. The material culture assemblage includes trident fish spears; at least two types of fishhooks; quartz crystals and numerous charm stone styles; and a baked-clay assemblage that includes net sinkers, pecan-shaped fish-line sinkers, and cooking balls. Ground stone items includes mortars and pestles. The bone tool industry appears minimal but includes awls, needles, and flakers.

People with a Windmiller adaptation buried their dead in formal cemeteries, both within and separate from their villages, in a ritual context that included the use of red ochre, often rich grave offerings, and ventral extension with a predominantly western orientation (although other burial positions, such as dorsal extension and flexed as well as cremations, are also known). While the Windmiller pattern is identified with the Sacramento–San Joaquin River Delta (Delta), work at Camanche Reservoir has identified sites with Windmiller assemblages, suggesting that other valley settings were also used by people exhibiting these adaptations (ICF 2009).

### *Middle Horizon: 4000–1500 B.P.*

The adaptive pattern found most frequently during the Middle Horizon is called the Berkeley Pattern and is based on the assemblage of CA-Ala-307. Sites displaying Windmiller Pattern assemblages, however, are also found in the Middle Horizon. The Windmiller Pattern sites in this period seem to occur with more frequency in or near the Delta, while Berkeley Pattern sites tend to be prevalent farther north.

The Berkeley Pattern differs primarily in its greater emphasis on the exploitation of acorns as a staple. This distinction is reflected in the more numerous and varied mortars and pestles. This complex is also noted for its especially well-developed bone industry and such technological innovations as ribbon flaking of chipped stone artifacts. During this era, flexed burials replaced extended burials, and the use of grave goods generally declined (ICF 2009).

### *Late Horizon: 1500–150 B.P.*

The predominant generalized subsistence pattern during the Late Horizon is called the Augustine Pattern. Archaeological sites representing the Augustine Pattern show a high degree of technological specialization. Artifacts in this period include the use of composite materials,

developed reductive technologies such as stone and shell work, and highly specialized adaptive technologies including basketwork and ceramic production.

Other notable elements of the material culture assemblage include flanged tubular smoking pipes, harpoons, ceramic figurines and vessels (Cosumnes Brownware), clam-shell disk beads, and small projectile point types such as the Gunther Barber series. These small projectile points may indicate the use of the bow and arrow. Complex social and economic institutions are also represented by differential access to wealth, the implementation of a shell money system, and the maintenance of extensive exchange networks (ICF 2009).

#### 3.5.3.2 Ethnographic Period

##### *Konkow Maidu*

Ethnographically, the Konkow Maidu occupied the area northwest of their Nisenan neighbors in the foothills east of Chico and Oroville, as well as a portion of the Sacramento Valley (ICF 2009). Konkow is one of three languages comprising the Maiduan language family of the Penutian linguistic stock. Several dialects of Konkow were spoken from the lower extent of the Feather River Canyon to the surrounding hills and in the adjacent parts of the Sacramento Valley (ICF 2009).

The Konkow lived in village communities of three to five villages, in round semi-subterranean houses covered with earth. It is estimated that a typical village consisted of about 35 people during ethnographic times. Family units usually comprised two to five people. A major village with a large assembly and subterranean ceremonial lodge served as the central ceremonial and political focus for affiliated villages in the vicinity. This central village was not necessarily the most populous village, but likely served as the residence of the chief, who lived in the ceremonial lodge. The chief's primary roles were those of advisor and spokesman. The individual villages were self-sufficient, not under the control of a headman (ICF 2009).

In winter, the Konkow settled in widely dispersed patterns along river canyons, usually on ridges high above rivers and generally on small flats on the crest of the ridge, or halfway down the canyon side. A village-community owned and defended a known territory, which served as a communal hunting and fishing ground. Some villages were strategically located atop isolated knolls for attack and defense considerations.

The Konkow followed an annual gathering cycle that made it necessary for them to leave their winter settlements on the river ridges. In the summer, they traveled into the mountains to hunt. In the spring, they ventured into the valley areas to collect grass seeds (ICF 2009).

The Konkow economy was a mixture of hunting, fishing, and gathering. They managed their food resources skillfully, making it possible for them to have a surplus during the non-harvest times. During harvest times, families gathered greens, tubers, roots, seeds, nuts, and berries. Although wild rye was common in their diet and pine nuts were highly valued, acorns were the most important of the harvested foods, particularly from black oak.

The Konkow managed their environment with a method of burning that enhanced favorable ecozones. The Feather River provided a wealth of fish resources, mainly in the seasonal salmon

runs. Lamprey eel were also abundant and favored by the Konkow in ethnographic times. Hunting was also an important source of food. Deer were the main game animal, but others included elk, rabbits, squirrels, and birds such as quail, pigeons, and ducks (ICF 2009).

Because the Konkow had no complex political organization, the shaman was an important figure in their society. With his mysterious powers and spiritual communication, he provided a sense of unity among the village community. He functioned in ceremonies and festivals, and served as a medical doctor. The office of shaman was an inherited one, falling to his sons after a shaman's death (ICF 2009).

The Konkow held an annual mourning ceremony, the Keruk, for the recently deceased, which re-enacted the death of the creator, Kukumat. For this ceremony, a male and female effigy were created, clothed, and burned. Other things such as food, money, and blankets were also given to the god by burning.

These Maidu participated in the Kuksu cult, also practiced by the Patwin, Pomo, northern Costanoans, and the Coast and Sierra Miwok. Kuksu, "the South God," renews the world each year. The ritual was celebrated in round dance houses by dancers with elaborate costumes including large feather headdresses (ICF 2009).

Konkow life was little affected by European contact until the Gold Rush in 1849, which was particularly devastating for them. The Feather River and surrounding foothills were abundant in gold, which lured hordes of miners to the area. The miners brought diseases that were deadly to the native peoples, decimating the population. The miners also destroyed the landscape with their mining techniques, and violently drove the surviving Konkow from their lands.

When the mining craze was over, the miners settled in the area and turned large tracts of land into agricultural fields. Because the miners wanted Konkow land, the Konkow were driven off their traditional lands twice. In 1853, they were rounded up along with other Native American groups and sent to the Nome Lackee reservation in Tehama County. Nome Lackee was not a successful reservation, and most of the families returned to their original lands.

In 1863 the Konkow were again rounded up by the militia and driven in what is now remembered as the "Death March" across the Coast Range to the Round Valley Reservation in northern Mendocino County. Many of these families remain in Round Valley today. Around the turn of the twentieth century several small rancherias were created, finally establishing a legal land base for them and formalizing their tribal status with the federal government. Today the Konkow are very active in cultural preservation in and around the Palermo/Feather River area (ICF 2009).

#### *Valley Nisenan*

The project area also crosses lands occupied and used by the Nisenan, or Southern Maidu. The language of the Nisenan, comprising several dialects, is classified within the Maiduan family of the Penutian linguistic stock. The western boundary of Nisenan territory was the western bank of the Sacramento River. The eastern boundary was the crest of the Sierra Nevada (ICF 2009).

Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages were usually located on low rises along major watercourses. Village size ranged from 3 houses to 40 or 50. Houses were domed structures covered with earth and tule or grass, and measured 10–15 feet in diameter. Brush shelters were used in the summer and at temporary camps during food-gathering rounds.

Larger villages often had semi-subterranean dance houses that were covered in earth and tule or brush, with a central smokehole at the top and an east-facing entrance. Another common village structure was a granary used for storing acorns. A Nisenan village, Holloh, was located 1.5 miles west of the proposed project's crossing of the Bear River (ICF 2009).

The Nisenan occupied permanent settlements from which specific task groups set out to harvest the seasonal bounty of flora and fauna that the rich valley environment provided. The Valley Nisenan economy involved riparian resources, in contrast to the Hill Nisenan, whose resource base consisted primarily of acorn and game procurement. The only domestic plant was native tobacco, but many wild species were closely husbanded.

The acorn crop from blue and black oaks was so carefully managed that its management served as the equivalent of agriculture. Acorns could be stored in anticipation of winter shortfalls in resource abundance. Deer, rabbit, and salmon were the chief sources of animal protein in the aboriginal diet, but many other insect and animal species were taken when available (ICF 2009).

Religion played an important role in Nisenan life. The Nisenan believe that all natural objects were endowed with supernatural powers. Two kinds of shamans existed: curing shamans and religious shamans. Curing shamans had limited contact with the spirit world and diagnosed and healed illnesses. Religious shamans gained control over the spirits through dreams and esoteric experiences. The usual mode of burial was cremation (ICF 2009).

#### 3.5.3.3 Historical Period

##### *Early History*

The history of the project vicinity involves the histories of southeastern Butte County, western Yuba County, and southeastern Sutter County. Gabriel Moraga initiated Spanish expeditions of the region in 1808. Moraga named one of the area's rivers "Rio de las Uvas," which came to be known as the Yuba River. Hudson's Bay Company trappers traveled through the region in the 1830s, followed by the John C. Fremont expedition in 1846. Sutter County received its name from John A. Sutter, who established Sutter's Fort in Sacramento during the early 1840s, and whose Hock Farm and New Helvetia lands included areas of Yuba and Sutter Counties.

The region exploded with mining activity during the Gold Rush, which attracted both American migrants and Chinese immigrants. In 1856 the Sutter County seat was moved north to Yuba City from Nicolaus. Located at the ferry crossing established by German-born Nicolaus Allgeier, the town of Nicolaus grew rapidly, thanks in part to plot sales generated by an advertising campaign. But the town went into decline in the early 1850s, when newcomers realized that the Feather River at that location was not consistently navigable. Butte County was founded in 1850 and Oroville became the county seat in 1856. Yuba County was founded in 1850 with Marysville as its seat (ICF 2009).

During the 1850s and 1860s, the region attracted significant capital investment in construction of increasingly large-scale water conveyance and storage systems for hydraulic mining operations. By 1865, Butte and Yuba Counties had 65 and 150 miles of mining ditches, respectively. By the 1870s, 400 miles of ditch and flume conducted water from the Sierra Nevada to foothill placer mining sites.

While generating wealth, hydraulic mining altered the environment in ways that caused disastrous flooding and made waterways unnavigable. The industry went into decline after 1884, when the U.S. circuit court outlawed mining debris in rivers. Gold excavation in the region was revived with dredge mining operations around Oroville and Honcut after 1900 (ICF 2009).

### *Transportation*

Before 1850, mule trains served as the primary form of transportation in much of Butte, Yuba, and Sutter Counties. The Beckwourth emigrant trail ran through the region from present-day Oroville to Marysville. After 1850, stage lines increasingly linked Marysville to nearby towns such as Parks Bar, Downieville, Auburn, and Nevada City. Formed in 1854, the California Stage Company, which won a U.S. mail contract in 1860, ran stages between Oroville and Quincy (ICF 2009).

Railroads arrived in the region by 1858. That year, the California Central Railroad, which was owned by the Yuba Railroad Company, began operating between Folsom and Marysville. The California Northern Railroad completed an alignment linking Marysville and Oroville in 1864. By the early 1870s, the Central Pacific Railroad Company had acquired these and other railroads in the consolidation campaign undertaken by its owners following completion of the transcontinental railroad in 1869.

The Western Pacific Railroad, incorporated in 1903, constructed a line through the Feather River Canyon in 1906. During the era of railroad development, Marysville became a major hub of regional rail traffic. Spurred in part by railroad shipping, agriculture became an increasingly important component of the region's economy (ICF 2009).

### *The Northern Electric Railway and the Sacramento Northern Railway*

As enthusiasm for commuter-oriented electric rail travel grew, several electric lines were developed in the Sacramento Valley region. The Northern Electric Company was established as an electric interurban railway in 1905. That year, railroad engineer Henry Butters purchased the Chico Electric Railway Company, which opened a line in 1906 from Chico to Oroville. Later that year, services were extended to Marysville, and in 1907 construction began to connect Marysville with Sacramento, a line that would include a stop at East Nicolaus.

That same year the company was renamed the Northern Electric Railway Company. After developing or acquiring several additional lines, the company experienced financial difficulties. In 1918 the Northern Electric Railway was sold to the Sacramento Northern Railway, which incorporated all the electric lines in the Sacramento Valley. In 1921, the company was purchased once more, this time by the Western Pacific Railway Company.

The depression of the 1930s and regional increases in automobile use brought financial difficulties to the company. In 1940, the company began phasing out its service lines, and in 1945 the State Railroad Commission declared electric railways illegal for safety reasons, forcing the company to switch to diesel fuels. The rails were eventually pulled up, and portions have been paved over (ICF 2009).

### *Agriculture and Irrigation*

Settlers raised wheat and vegetables in the Marysville/Yuba City area as early as the 1840s. Small-scale hop farming was introduced to the area in 1859. Domesticated cattle and sheep arrived from the Midwest in the early 1850s and multiplied prodigiously, creating the basis for construction of the Marysville Woolen Mills in 1876. Agriculture made gains in the region during the 1860s, but in Butte County mining activity increased at the expense of agriculture during the next decade.

Not until the 1880s did the agricultural economy increase markedly as a result of two factors. First, the conversion of hydraulic-mining water conduits to irrigation systems, a process dominated by private companies in this region of California, introduced the possibility of transforming otherwise poor growing land into highly productive land. Second, the railroad and, by the late 1880s, the refrigerated rail car, encouraged local farmers' participation in a wider range of markets (ICF 2009).

Fruit production became a major element of the regional economy—and settlement—during the last two decades of the nineteenth century. Citrus colonies were organized in Butte County between 1886 and 1895, the most prominent of which were Thermalito, Palermo, and Rio Bonito (ICF 2009).

### *Palermo Colony*

Economic and settlement patterns in the Palermo vicinity from the 1850s to the late 1880s followed trends typical of foothill Butte County and other areas similarly situated throughout what became the northern California citrus belt. The main industries of the Palermo vicinity between the 1850s and 1870 were grain agriculture and cattle raising.

The increase of settlement of the region constrained ranchers' ability to obtain the vast tracts of land requisite for grazing cattle. Sheep were better suited for smaller scales of land use, and ranchers brought them to the Palermo area and raised them profitably for wool production. Sheep ranchers took increasing control of former cattle-grazing land, building sheep ranching into the dominant industry until February 1888 (ICF 2009).

Two phenomena favorable to the eventual development of Palermo transpired between 1865 and 1882. First, in 1865, the land encompassing present-day Palermo was surveyed and opened for entry. Second, in 1882 the California Northern Railroad (now the Southern Pacific Railroad) constructed a line to the present site of Palermo, which was for a time the line's terminus (ICF 2009). The presence of the railroad linked the Palermo area directly to wider markets and doubtless made the prospect of an agricultural colony viable.

The Palermo Colony was incorporated on January 7, 1888, as a citrus tract. Prior to incorporation, most of Palermo belonged to Daniel Abby, who had purchased the land from the California Northern Railroad, homesteaders, and the federal government. By November 24, 1887, the Oroville-based company of D. K. Perkins and Wise purchased Abby's land and a further 1,000 acres of Wendall Grubs' land, as well as a water feature later called Palermo Ditch (the ditch, built in 1856 to support mining operations, drew water from the South Fork of the Feather River).

D. K. Perkins and Wise formed the Palermo Land and Water Company with the McAffee brothers of San Francisco in 1888. Eventually acquiring an interest in the Palermo holdings, San Francisco publisher George C. Hearst recruited Midwesterners to establish olive and citrus orchards at the colony and built a home there for his wife Phoebe, who named the area after an Italian city she had visited (ICF 2009).

In February 1888, surveyors laid out a town with main avenues, cross avenues, town lots, and villa lots, all located east of the Southern Pacific Railroad. A few houses were built, some town lots cleared, a railroad depot built, and orchard trees planted between February and March that year. Altogether, about 235 acres of land were planted, primarily with oranges. More than 8 miles of roads were graded, forming several streets in present day Palermo: North Villa, Gibraltar, Railroad, Louis, and Irwin Avenues. By April 1888, ditches had been built from "the head dam" near the South Fork of the Feather River to Palermo (some 24 miles) to bring water to the colony (ICF 2009).

In May 1888, the Palermo Land and Water Company subdivided the land west of the Southern Pacific Railroad and graded a few streets, forming a second subdivision in the colony. A blacksmith's shop, business block, planning mill, general store, schoolhouse, and the Palermo Telegraph Line were built at this time. A Wells Fargo & Co. express office and a post office were opened in July and August the same year, respectively. The summer of 1888 witnessed a third subdivision laid out, of which then–U.S. Senator George W. Hearst bought 700 acres and planted orchards. By January 1889, a total of 23 buildings had been erected in Palermo (ICF 2009).

The Palermo Land and Water Company paid to have the streets laid out and a water system built. The water system consisted of irrigation ditches and a distribution pipeline for town, which was operational beginning July 4, 1889. These expenditures proved a worthwhile investment for the Palermo Land and Water Company: by August 1889 the company had sold 2,350 acres of land with receipts totaling $190,000 on $50,000 expended on street and water system construction. The company sold another 1,635 acres by May 1890 (ICF 2009).

A total of 6,000 acres of land had been subdivided by 1890 and 150 miles of irrigation ditches built. Historical sources predating 1920 indicate that the early ditches in Palermo were of earthen construction. At this time, the number of buildings in Palermo, exclusive of outbuildings, reached 54, with 49 families in residence. By 1892, Palermo had a population of 500 people, 75 residences, and a weekly newspaper, *The Progress* (ICF 2009).

In terms of agricultural production, Palermo Colony commenced planting in 1888 with 22,000 orchard trees. Some 1,800 acres of oranges, olives, figs, prunes, pears, peaches, apricots, and grapes had been planted by October 1890. Nearly 50 percent of the orchards consisted of oranges. By 1900, Palermo constituted a fruit-producing community, but operated through the agency of numerous individual sellers rather than as a cohesive colony under the Palermo Land and Water Company. The Palermo Land and Water Company continued to operate as a corporation—principally selling water to irrigators—until 1945, at which time it dissolved, after having sold public utility property and water rights to entities such as the Oroville-Wyandotte Irrigation District as early as 1929 (ICF 2009).

#### *Settlement—Marysville*

Euro-Americans settled present-day Yuba County intensively during the California Gold Rush. Beginning in 1849, prospectors and entrepreneurs in search of riches overran the Yuba River and other streams of the Sierra Nevada. Placer miners initially established claims and settlements on watercourses, then gradually worked back from the flats adjacent to streams to ridges and hillsides. The flood of 1850 encouraged miners to work areas located above the high water mark of the Yuba River. By 1857, hydraulic mining began to replace placer methods. Debris from hydraulic operations destroyed or buried many of the older mining camps (ICF 2009).

Agriculture and stock raising were the primary industries in the present-day Yuba County region during the historic period. Regional ranching originated on the New Helvetia and Johnson's ranchos in the early 1840s. The Gold Rush precipitated growth in agriculture and ranching, as ranchers and farmers realized handsome returns from supplying food and other goods to miners. Frequent floods, however, plagued the residents of the Feather–Bear River floodplain and posed a significant threat to the viability of agricultural interests and further settlement of Yuba County.

Initial efforts at flood control were usually uncoordinated, consisting of small levees and drains constructed by individual landowners. These efforts proved insufficient to protect cultivated land, and much land east of the Feather River remained marshland that was unsuitable for agriculture (ICF 2009).

In 1861, the state legislature created the State Board of Swampland Commissioners to reclaim swamp and overflow lands. The Board established 32 districts that attempted to enclose large areas with natural levees. Lack of cooperation among landowners in the districts led to chronic financial crisis. When the legislature terminated the State Board of Swampland Commissioners in 1866, responsibility for swamp and overflow land fell to the individual counties.

Many counties offered incentives to landowners for reclaiming agriculturally unproductive land. If a landowner could certify that they had spent at least 2 dollars per acre in reclamation, the county would refund the purchase price of the property to the owner. Speculators took advantage of this program and a period of opportunistic building followed (ICF 2009).

In 1908, residents of Yuba County formed Reclamation District 784 (RD 784), partially in response to the flood of 1907. At the time of its formation, RD 784 encompassed 22,762 acres between Marysville and Rio Oso, much of which was owned by the Farm Land Investment

Company. RD 784 built substantial levee and drainage systems to restrain floodwaters from the Bear and Feather Rivers and incorporated levees built by the Farm Land Investment Company and other landowners.

In 1911, the newly established State Reclamation Board took jurisdiction over reclamation districts, including RD 784. That year, with approval from the state, the Sacramento Flood Control Plan was implemented. The plan proposed an ambitious program of construction of levees, weirs, and bypasses along the river.

In 1920, RD 784 voters approved a plan to improve levees along the Yuba, Bear, and Feather Rivers and to improve drainage in the vicinity of Messick Lake, Plumas Lake, and other backwater marshes along the Feather River. The U.S. Army Corps of Engineers assisted RD 784 with the construction of a levee system at the eastern boundary of the district. Reclamation efforts in RD 784 promoted settlement and development of the land between Rio Oso and Marysville (ICF 2009).

A large portion of Yuba County was originally part of John A. Sutter's New Helvetia land grant established in 1841. In 1842, Sutter leased the land that would include Marysville to Theodor Cordua, a settler from Mecklenburg, Germany. Cordua raised livestock on the land and in 1843 built an adobe residence and trading post at what is now the southern end of D Street. Although Cordua called his settlement "New Mecklenburg," it was more commonly known as "Cordua's Ranch." Because of its location on the California–Oregon Trail through the Sacramento Valley, it soon became an important waystation for emigrants and hunters (ICF 2009).

In 1848, Charles Covillaud, an immigrant from France and a former employee of Cordua, was one of the first in California to strike it rich in the gold fields. That same year he purchased half of Cordua's holdings with his new-found wealth. The following year, Michael C. Nye and William Foster, brothers-in-law of Covillaud's wife Mary Murphy, purchased the other half.

The settlement then became known for a time as Nye's Ranch. In September 1849, Nye and Foster sold their interest to Covillaud. The next month, Covillaud sold three-fourths of the rancho to Jose Ramirez, John Sampson, and Theodore Sicard. The prosperity of the newly founded nearby towns of Yuba City, Vernon, and Linda inspired the partners to survey a town at the site of Nye's Ranch and sell lots. In 1850, they hired French surveyor Augustus Le Plongeon to create a master plan for a town. Le Plongeon's original plan for the town apparently featured streets radiating out from a central hub. This sophisticated plan was scrapped in favor of a typical grid plan embellished with several large parks and plazas. It also included a broad plaza or embarcadero on the Feather River and a broad boulevard (E Street) that extended north from the river for 20 blocks to the city limits (ICF 2009).

Nye's Ranch soon became the head of navigation on the Feather River and the point of debarkation for riverboats from San Francisco and Sacramento carrying miners on their way to northern mines. Pack trains loaded with supplies headed out from the town up the canyons to Downieville and other mountain mining towns. The settlement's ideal location soon led to phenomenal growth and economic superiority over other towns in the region.

By 1850, the permanent population reached about 500. During the winter of that year, the town's leaders formed a committee to draw up official incorporation papers to present to the new state legislature that was set to convene in January 1851. The committee also discussed a variety of names for the new city, including Yubaville, Sicardville, Scardoro, and Circumdoro, before they settled on Marysville, in honor of Mary Murphy Covillaud. In January 1851, the new California legislature approved the charter for the City of Maryville, and the official incorporation occurred the following month.

Over the next decade, Marysville grew rapidly and the population increased steadily. Between 1851 and 1855, nearly 140 brick buildings were erected in the commercial area of town. By 1853, the city was the third largest in the state. Gold remained the center of the economy and in 1857 alone, more than $10 million in gold was shipped from Marysville's banks to the U.S. mint in San Francisco. The population reached nearly 4,000 permanent residents by the end of the decade (ICF 2009).

For the remainder of the nineteenth century, as gold production declined, Marysville's economic base shifted to agriculture. As was true in most regions of the state, wheat became the most profitable and therefore most popular crop during the 1860s and 1870s. The arrival of the Southern Pacific Railroad in the mid-1860s diverted traffic from the river and made transportation of goods to market easier and more reliable.

During this time, the character of Marysville's population changed, with women and children replacing single men. Although the city's population rose to nearly 5,000 in 1870, repeated flooding and the depression that followed the collapse of the international wheat market resulted in a slow decrease in population during the 1880s and 1890s (ICF 2009).

The construction of large-scale irrigation projects created a boom in Marysville's economy during the early part of the twentieth century. Dry-farmed wheat gave way to irrigated orchard crops as farmers subdivided their large former wheat tracts into 20- to 40-acre parcels on which to grow a variety of fruits, including peaches, prunes, and grapes. Other profitable crops included beans and rice. By the 1920s, Marysville was once more the vital economic hub for the region. The Western Pacific and Sacramento Northern railroads established links to serve Marysville. Several large corporations, including PG&E and Standard Oil, established regional headquarters in the city.

The revitalized economy led to a 65 percent increase in Marysville's population between 1900 and 1930. It was also during this period of expansion that many of Marysville's most recognizable architectural landmarks were constructed. During the late 1920s, more than 20 major new buildings, valued at well over one million dollars, were erected in the city. Two of the most notable are the seven-story Hart Building and the Marysville Hotel (ICF 2009).

### *Hydroelectricity and Transmission Development*

Hydraulic mining left a legacy of water conveyance infrastructure readily adaptable to both irrigation and development of hydroelectric power-generating facilities. From 1879 through the 1890s, numerous mining and milling operations in the Sierra Nevada developed small hydroelectric generators to power lighting and equipment. California's population centers to the

west were resource poor in terms of wood and coal, the combustible materials utilized in the steam-generating plants that powered the first street lighting systems. Although Sierra Nevada watersheds offered a potentially renewable source of energy production, early transmission technology was not capable of conducting electricity from the state's eastern mountains to its western population centers (ICF 2009).

Necessity drove invention when it came to the potential promise of hydroelectricity in California and the immediate problem of long-range electricity transmission. Promoted in the east by Edison Electric Light Company, direct current (DC) could not be transmitted more than 5 miles. Single-phase alternating current (AC), by comparison, could be transmitted over longer distances to power lights but not motors. However, the development of multiphase AC technology by Nicola Tesla, George Westinghouse, and the General Electric Company created new possibilities for long-distance transmission.

In 1891, engineer Almerian Decker migrated from Cleveland, Ohio, to southern California for health reasons, bringing with him knowledge of multi-phase AC technology. After building several long distance single-phase AC transmission systems, Decker helped develop the three-phase AC transmission technology used by the Mill Creek hydroelectric plant in southern California, which began operations in 1893. Two years later, General Electric's James Lighthipe used this technology to begin transmitting 11,000 volts over a distance of 21 miles from the new Folsom Powerhouse on the American River to Sacramento. This important event marked the arrival of long-distance hydroelectricity transmission in northern California. Over the next 3 decades, increasingly larger hydroelectric facilities, with increasingly lengthy and powerful transmission systems, proliferated throughout the Sierra Nevada and adjacent foothills (ICF 2009).

#### *Hydroelectric Development in the Feather River Canyon and North Valley*

The Feather River's steep canyon interlaced with large valleys made the North Fork an excellent candidate for hydroelectric power generation and water storage. The Great Western Power Company (Great Western) (1906–1930), saw the hydroelectric potential of the Feather River's North Fork and became an early leader in the area. The company laid out a plan to develop multiple powerhouses along the North Fork, generating power for the populous Bay Area. The first powerhouse, Big Bend, was located in the northern portion of Butte County (currently inundated by Lake Oroville). By rehabilitating and enlarging an existing tunnel previously used for mining purposes, the company was able to construct Big Bend Powerhouse at a fraction of the cost and time of new construction. In addition to Big Bend Powerhouse, Great Western developed an advanced transmission and distribution system. The company constructed two substations, one in Sacramento at Brighton and the other in Concord in the East Bay. The Brighton Substation also offered service to local mining companies operating near Folsom. The ultimate terminus for Great Western's energy supply was a distribution substation in Oakland. The powerhouse and 165-mile 100 kV transmission line (called the Las Plumas line) were completed in 1908, linking the mountains to Oakland and providing a surge of energy for the Bay. By 1920, the original Great Western transmission line included 1,044 standard towers, 42 transposition towers, 78 angle towers, 4 anchor towers, and 17 special towers (PG&E 2016).

Great Western initially sold power to PG&E, but expanded its own San Francisco market in 1911 by purchasing City Electric Company. In 1912 the company began selling power to San Francisco residents that was transmitted from Oakland across the Bay by underwater cable. This additional market extended the length of its Big Bend hydroelectric transmission facilities to 165 miles (PG&E 2016). At an unknown time after its 1930 acquisition of Great Western, PG&E redesignated the Las Plumas line the Big Bend–Oakland line. PG&E continues to own and use this transmission line and tower alignment, which was once again redesignated the Palermo–East Nicolaus 115kV double-circuit line at an unknown time.

*Caribou Hydroelectric Development and the Caribou-Valona Transmission Line*

Work on the Caribou hydroelectric project commenced in 1919 on the first of several planned powerhouses (Caribou Powerhouse) on the North Fork of the Feather River, with noted contractor Stone and Webster retained to develop the powerhouse, associated infrastructure, and transmission line. The powerhouse was put into service May 6, 1921, and generated 11,000 volts through two 22,000 kilowatt (kW) generating units, with each unit consisting of two Allis-Chalmers overhung impulse water wheels operating at a head of 1,008 feet and General Electric Company generators (PG&E 2016).

The project's transmission line was designed by Great Western Power Company's J. A. Koontz and constructed by Stone and Webster. In its entirety, the line extended from the Caribou powerhouse to the Valona Substation in Oakland, a 186-mile alignment connecting the generating capacity of the Feather River to a rapidly expanding Bay Area. The line was tied into several substations along that route, including Las Plumas (later Big Bend) Powerhouse, Arboga Substation, and Brighton Substation, before terminating at Valona Substation.

The development of the Caribou–Valona Transmission line was an arduous component of system construction—particularly the first 50 miles of line traversing the steep canyon terrain of the Feather River. Construction access was facilitated by the Western Pacific Railway Line running up the river, with rope conveyors or horse teams hauling the tower components and line from the track in sections. As originally developed, the alignment had 1,368 towers of two basic types, appropriate to the surrounding geography and locational context. The rugged, approximately 50-mile mountainous Feather River Canyon section consisted of 382 Mountain towers (PG&E 2016). The two styles of Mountain towers, classified as SA and SB, were very similar in design. These robust steel lattice towers were built to sustain the weight of snow and freezing conditions, with a wide base of 16 by 16 feet and a squat stature of 55 feet. The towers were materially and structurally reminiscent of those designed on other Stone and Webster Sierra transmission projects, including that undertaken in 1913 for Big Creek Hydroelectric System's 150 kV line. The bolted steel towers were generally A-shaped with horizontal planes of insulators. Because of the rugged terrain, the towers were often placed in holes drilled in rock and grouted in place.

As the topography transitioned to the Valley floor at the present site of Lake Oroville, the tower type changed, with the 136 miles from the hills to the Valona Substation consisting of 984 Valley towers. There were six different classifications of Valley towers (L, A, B, X, K, and R [river]) (PG&E 2016). These towers were generally of one standard type with minor modifications to meet varying terrain or engineering needs, such as when greater height was needed when crossing a waterway in the delta, or when special tensioning was required. Two

"special" towers were also designed to cross the Carquinez Strait (PG&E 2016). The standard Valley tower was 16 by 16 feet at the base with a tapered form and 65-foot height. They were taller than the Mountain towers, allowing a greater distance between towers and greater economy in tower construction. The Valley section was greatly informed by previous long-distance transmission development, particularly as it related to the proper placement of dead-end towers and the proper clearance for road and right-of-way crossing.

While the line was designed to operate at 165 kV, at initial operation in 1921 it transmitted at a reduced voltage of 120 kV and remained that way until late 1922 when the system successfully ran at 165 kV. The lowered voltage contributed to a delay in the installation of synchronous condensors at the Valona Substation, which were needed to downgrade the higher power for distribution. Although the voltage of the 165 kV system was lower than that under simultaneous investigation by leading practitioners in the field, the 165 kV Caribou–Valona voltage held the distinction of being the highest in commercial operation for approximately 6 months until May 1923, when Southern California Edison's Big Creek successfully ran at 220 kV, followed quickly by PG&E's Pit #1 hydroelectric and transmission development (PG&E 2016).

### *Continuing Growth and Industry Consolidation*

Following completion of Caribou Powerhouse, Great Western continued to expand in the region. The company completed the Butt Valley Dam in 1924 and expanded the Big Meadows dam in 1925 to provide increased storage capacity. In 1925, Great Western bought a controlling interest in the Feather River Power Company, which was constructing the Bucks Creek hydroelectric system, and in 1928 bought the struggling company outright. Despite this period of notable growth, by 1930 Great Western itself fell victim to ongoing consolidation in the utility market, with PG&E acquiring all of its holdings, including Caribou Powerhouse and the Caribou–Valona Transmission line, in a period of massive market growth and statewide expansion (PG&E 2016).

Beginning in the 1930s, PG&E began upgrading its newly acquired systems. Many of the upgrades addressed greater system-wide efficiency and integration of predecessor company systems, including those of Great Western. In 1940, PG&E began a maintenance program along the Caribou alignment, removing inoperative and unnecessary single pole disconnecting switches, and replacing cables and insulators. In 1944, the Valona substation—the original Caribou line terminus—was decommissioned as the equipment was no longer adequate for transmitting electricity at varying voltages. The Caribou line was then extended to the Golden Gate Substation in El Cerrito and renamed the Caribou–Golden Gate transmission line (PG&E 2016).

### *Post-War Growth and Development*

While economic expansion remained dampened during the Depression, California experienced a sustained Post–World War II growth in industrial, manufacturing, and agricultural sectors as well as in population that predicated a substantial expansion of the state's utility system. To meet the surge in demand, from 1946 to 1952 PG&E invested nearly a billion dollars in new system facilities, adding large hydroelectric projects, steam generation plants, and intricate transmission networks across the state. The system upgrade included multiple fuel-fired steam plants that produced far more power than predecessor facilities. This increased output required more substations, transmission lines, and local distribution lines to adequately deliver the electricity.

As of January 1, 1952, PG&E was maintaining 58,000 miles of electrical lines. At the same time, the company systematically constructed scores of new substations and upgraded equipment on old facilities (PG&E 2016).

As part of the upgrade and expansion, the original 186-mile 165 kV Caribou Transmission Line was segmented and downgraded as part of a Northern California system overhaul. The overhaul stemmed from the development of Oroville Dam, a central component of the California State Water Project. Construction of Oroville Dam began in 1957 and was completed a decade later, with a storage capacity of 750,000 acre-feet. While the dam was a boon to the state, it caused the inundation of the site of PG&E's Big Bend Powerhouse, a key energy generator for the utility (PG&E 2016).

In response to this loss of capacity, PG&E retooled portions of its Feather River generation and transmission system, including the Caribou line. Because the line would no longer be serving the dismantled Big Bend and was operationally subservient to higher voltage transmission lines serving the Bay Area, PG&E opted to downgrade the line to 115 kV, rerouting the alignment to a newly enlarged Palermo Substation, which disseminated electricity along a corridor that terminated at the Rio Oso Substation in Sutter County (PG&E 2016). In 1965, the Caribou line was downgraded and the original route to Oakland, and subsequently El Cerrito, was abandoned. The remaining line segments in these areas are representative of multiple eras of development, with features and an alignment that contain vestiges of the 1920s era as repurposed to meet late twentieth century energy needs.

#### 3.5.3.4 Record Search Results

The results of the 2014 and 2015 record searches indicate that a total of 78 cultural resources studies were conducted within the study area, of which 48 were conducted within the APE. The 2014 record searches indicate that 69 of the previous studies fall within 0.25 mile of the original tower corridor APE. The 2015 record searches identified 31 previous studies within 0.25 mile of the additional APE locations, 8 of which were not included in the 2014 record search. In addition, an inventory report was completed in 2008 for the Palermo–East Nicolaus 115 kV Transmission Line Project (Pacific Legacy 2015), which falls within the project corridor APE. The information centers have not yet assigned study numbers for this report.

The combined 2014 and 2015 record searches indicate that a total of 26 previously recorded cultural resources fall within 0.25 mile of the study area. Of these cultural resources, 10 are directly within the project APE:

- P-51-000150/CA-SUT-150H (Feather River Levee Segment)
- P-51-000222/CA-SUT-222H (Palermo–East Nicolaus Transmission Line)
- P-51-000223/CA-SUT-223H (Palermo–Rio Oso No. 2 Transmission Line)
- P-51-000224 (Rio Oso Substation)
- P-58-001284/CA-YUB-1240H (Southern Pacific Railroad segment)
- P-58-001372 (Western Pacific Railroad Segment)
- P-58-001369/CA-YUB-1443H (Levee)
- P-58-001618/CA-YUB-1441H (Browns Valley Grade Levee)
- P-04-001694/CA-BUT-1694H (Southern Pacific Railroad, California Northern Railroad)

- P-51-000081/CA-SUT-81H (Rio Oso Company brick kiln site)

In addition, three new resources were identified in the 2008 inventory report for the Palermo–East Nicolaus 115 kV Transmission Line Project (Pacific Legacy 2015), which is within the project APE. These sites have not yet received permanent numbers from the information centers:

- Nicolaus-ICF J&S-01-H (Historic ranch complex)
- Palermo-ICF J&S-01-H (Historic period concrete ditch)
- Palermo Substation

#### 3.5.3.5 Results of Native American Coordination

Of the 21 Native American individuals and organizations identified by NAHC and contacted by PG&E in October 2014, five have provided input on the project. Mike DeSpain of the Mechoopda Indian Tribe of Chico Rancheria telephoned PG&E's cultural resources consultant on November 7, 2014, and stated that the project was not of concern to the Mechoopda Indian Tribe of Chico Rancheria. He indicated that the Moretown Rancheria of Maidu Indians, the United Auburn Indian Community of the Auburn Rancheria, and the Colusa Cachil Dehe Band of Wintun Indians should be contacted. The Moretown and Auburn Rancherias had been included in outreach efforts in 2014; however, Colusa had not been included in the list of Native American contacts provided by NAHC. Mr. DeSpain stated that the Pease Transmission Line portion of the project would most likely have been in the Colusa Rancheria's traditional territory.

Ren Reynolds of the Butte Tribal Council contacted PG&E's cultural resources consultant on November 12, 2014, by e-mail and requested the presence of a Tribal Site Monitor for the project, but did not identify any specific resources or areas of concern.

PG&E followed up with the tribes identified above via phone on April 12, 2016, except for the Mechoopda Tribe of Chico Rancheria, as they had already expressed no concerns about the project. PG&E reached three individuals, and left voice messages with the remaining contacts where possible. Of those reached by PG&E, none expressed specific concerns about the project. Mr. James Edwards of Berry Creek Rancheria of Maidu Indians stated that the tribe has no concerns and suggested PG&E contact Moretown Rancheria. PG&E spoke with the Tribal Administrator for the Enterprise Rancheria, who requested that PG&E resend the project information. The information was sent via email on April 12, 2016. Mr. Franklin Reno, Tribal Historic Preservation Officer for the Enterprise Rancheria requested additional information via email on April 12, 2016, which PG&E provided that information the same day. Mr. Grayson Coney of the T'si-Akim Maidu stated that the tribe had no specific concerns about the project, and requested that they be contacted should any resources be encountered during construction. He also indicated that follow up calls to the other T'si-Akim Maidu tribal members on the NAHC list were not necessary. PG&E also left a message with the Tribal Administrator of the Cahil Dehe Band of Wintun of the Colusa Indian Community Council on April 12, 2016. PG&E will continue to follow up on these communications in coordination with the CPUC. Appendix C contains a Native American Contact Log with additional detail regarding these communications.

### 3.5.3.6 Results of Field Inventory

The field work inventory discussed below included identification of four previously undocumented resources, ten previously documented potential resources (described in Section 3.5.3.4 above), and three isolated finds. Seven of the ten previously documented resources were relocated within the APE (the recorded site identified in the field) during the field survey, but three were not, as described below. Site types identified within the APE include historic period debris scatters, an irrigation complex (ditches), roads, levees, railroads, agricultural and ranching complexes, and power conveyance facilities (transmission lines and substations).

#### *Previously Undocumented Resources*

##### *PL-Palermo-02H*

PL-Palermo-02H is a historic period can scatter consisting of seven cans (six flat top beverage cans, church key opened, dating between 1935 and ca. 1960s [Pacific Legacy 2016]), an "MJB" marked coffee can, and a dense scatter of modern glass in an area measuring 30 feet (N/S) by 30 feet (E/W). The site is located in an open transmission line corridor with a dirt access road. The site is in fair condition with impacts from access road and transmission line corridor maintenance and modern trash, which includes a glass scatter, ceramic insulator sherds, and two wooden posts. The wooden posts flank the road and both have wire nails and two-wire, two-prong barbed wire. The site was deemed ineligible for listing on the NRHP or CRHR (Pacific Legacy 2016).

##### *PL-Palermo-03H*

PL-Palermo-03H is a debris scatter containing historic period and modern artifacts. The debris scatter measures 87 feet (N/S) by 37 feet (E/W) and consists of milled lumber, bricks, concrete fragments, amber beer bottle threaded finish fragments, asphalt shingle fragments, plastic bottles, four mid-1960s aluminum pull tab beer cans (one is Olympia brand) and at least four aluminum/steel-sided cans dating from the 1950s to 1984 (Pacific Legacy 2016). The debris scatter is on the South of Palermo Line segment in an open transmission line corridor in a largely agricultural setting with some residences. Site condition is fair, with impacts from access road and transmission line corridor maintenance and deposition of modern trash. The site was deemed ineligible for listing on the NRHP or CRHR (Pacific Legacy 2016).

##### *PL-Palermo-011H*

PL-Palermo-011H is a historic-period agricultural complex consisting of three concrete features. Feature 1 is a low rectangular concrete structural footing with a parallel row of postholes on the west side and a row of concrete block piers on the east. Feature 2 is a rectangular board-molded concrete trough. Feature 3 is a large concrete pad on which Features 1 and 2 were built. The site measures 300 feet (N/S) by 295 feet (E/W). The site is surrounded by a low earthen berm that separates it from adjacent rice fields, and there is a barbed wire fence and gate on the north side. The site is situated within a proposed PG&E work area on the South of Palermo Line Segment. The site condition is fair, with impacts from vegetation growth, vehicular traffic, storage of farm machinery, pedestrian traffic, and alluvial erosion. Based on USGS topographic quadrangles and a 1947 aerial photograph, the site was likely constructed in the late 1940s (Pacific Legacy 2015).

### Old Marysville Road

The Old Marysville Road is a north-south oriented historic-period road approximately 1.1 miles long and consisting of two segments. The northern segment is north of Plumas Arboga Road and the southern segment is south of Plumas Arboga Road. The Old Marysville Road is parallel to the Pease–Rio Oso Transmission Line south of Arboga Road (South of Palermo Line). The northern segment is approximately 0.5 mile (2,576 feet) long and is divided into two portions. The northern portion of the northern segment is approximately 1,200 feet long and consists of a 12-foot-wide graveled dirt road. It extends south from a dead-end barrier consisting of a T-post and pig-wire fence. North of the fence the road appears abandoned, and in the distance SR 70 appears to have been built over it.

The southern portion of the northern segment is approximately 1,400 feet long, extending south from the northern portion to Plumas Arboga Road, and is composed of an improved gravel road that becomes a paved road as it approaches Plumas Arboga Road to the south. This portion measures 22 feet wide, is better maintained, and no longer retains its historic-period character. Four residences are present along the west side of this portion of the road.

The southern segment of the road, extending south from Plumas Arboga Road, measures 3,267 feet long and consists of a paved road that becomes a dirt two-track road as it continues south, eventually ending at the Southern Pacific Railroad line. It measures 12 feet wide in the paved area and is better maintained, likely because of two residences on the west side of the road just south of the PG&E Plumas Substation on Plumas Arboga Road. Beyond these residences to the south, the road narrows to approximately 9–10 feet.

### Previously Documented Resources

#### P-040-001694/CA-BUT-1694 (Southern Pacific Railroad/California Northern Railroad)

This historic-period railroad grade segment was first recorded by Williams, Medin, and Silva in 2000 (Pacific Legacy 2015). The resource is a remnant of the abandoned Southern Pacific Railroad line that connected Marysville and Oroville. The site consists of four recorded segments of the overall railroad grade and two associated features: a small wooden trestle and a wood box culvert. This line has been abandoned for many years and the rails, ties, and other structural equipment have been removed. The only artifacts present are widely scattered railroad spikes. Segment integrity is variable, with some segments obliterated by later activities. The integrity of the recorded segment was described as "fair to poor." P-04-1694 had not been evaluated for listing in the NRHP as of 2012 (Pacific Legacy 2015).

The railroad grade resource segment was not relocated during survey because it was determined to be in a paved access road outside the survey area.

#### P-51-000081/CA-SUT-081H (Brick Kiln Site).

The historic-period brick kiln site was first recorded by J. Berg in 1994 and updated by Roark and Fransen in 2008 (Pacific Legacy 2015). The site consists of the remains of the Rio Oso Brick Company kiln, which operated in 1922. The recorded remains included a light scatter of waste (highly vitrified and deformed) brick fragments that extend into the edge of a cattle pasture near the Western Pacific Railroad grade (Pacific Legacy 2015). In 2008, ICF archaeologists

attempted to relocate the site scatter during pedestrian surveys and found no traces present (Pacific Legacy 2015). The site was recorded within and adjacent to a South of Palermo access road (South of Palermo Line). Relocation of the site was again attempted in a 2015 survey. As in 2008, no surface indications of the brick kiln remnants were observed at the site location.

### *P-51-000150/CA-SUT-150H (Feather River Levee)*

This segment of the historic-period Feather River Levee was first recorded by Beason and Freeman in 2007 and rerecorded by Kim and Haley in 2013 (Pacific Legacy 2015). It is approximately 41 miles long and is west of the Feather River in both Butte and Sutter Counties. The levee segment is earthen, with a crown that ranges between 60 and 65 feet wide and is covered in loose gravel. The height of the levee varies from 20 to 30 feet. Orchards and row crops flank the structure. The levee segment passes through one urbanized area, Yuba City. In this region, the levee serves as a barricade between the river on the east and the city on the west. It runs behind the city's historic residential and commercial core (Pacific Legacy 2015).

Kim and Haley found that the levee retains a high degree of integrity (Pacific Legacy 2015). The subject segment of the resource was reexamined on November 11, 2014, and the condition of the resource was found to be unchanged from that reported by Kim and Haley. The APE crosses the resource at Palermo–Pease/Pease–Rio Oso Transmission Line near an existing structure north of Odie Way (Pease Sub Line Segment).

The construction of the Feather River Levee dates between 1868 and 1910 and was the first river management and flood control mechanism in the region that protected the growing populations from flooding (Pacific Legacy 2015). Kim and Haley recommended that this segment of the Feather River Levee appears to be eligible for inclusion in the NRHP under Criterion A and in the CRHR under Criterion 1 for its association with advances in flood control in northern California. Specifically, the creation and development of the Feather River Levee in the area of Butte and Sutter Counties led to the expansion of agriculture, as well as the formation and settlement of local cities and towns, including Yuba City and Marysville. Additionally, using the criteria listed in Section 15064.5 (a)(3) of the CEQA Guidelines and outlined in Section 5024.1 of the Public Resources Code, the levee segment appears to be a historical resource for the purposes of CEQA review (Pacific Legacy 2015).

### *P-51-000222/CA-SUT-222H (Palermo-East Nicolaus Transmission Line)*

Bowen and Yates first recorded this historic-period Palermo–East Nicolaus Transmission Line, built in 1908 by the Great Western Power company, in 2008 (Pacific Legacy 2015). This resource is a double-circuit transmission line supported by steel lattice towers, and extends approximately 38 miles on a predominantly north–south alignment between PG&E's Palermo and East Nicolaus substations. The tower alignment of this line parallels the single-circuit line from Palermo south to Trowbridge. Most of this resource falls within the APE as it parallels, to the east, the segments of the Palermo-Pease and Pease–Rio Oso Transmission Lines that are part of the South of Palermo Line.

The length of the resource was reexamined from October 27 to November 14, 2014, and found the historic condition of the resource to be poor (Pacific Legacy 2015). Bowen and Yates suggest that the Palermo–East Nicolaus Transmission Line does not appear to be a historic

property for the purposes of Section 106 or a historical resource for the purposes of CEQA. The California State Historic Preservation Officer (SHPO) concurred with this determination in a letter dated April 4, 2011 (Pacific Legacy 2015).

### *P-51-000223/CA-SUT-223H (Palermo–Rio Oso No. 2 Transmission Line)*

Bowen and Yates recorded this resource in 2008 and refer to it as the historic Palermo–Rio Oso No. 2 Transmission Line, built in 1919 by Great Western (Pacific Legacy 2015). It is a single-circuit 115 kV transmission line supported by steel lattice towers, and extends 38 miles on a predominantly north-south alignment. It was built on the towers of the historic Caribou–Golden Gate Transmission Line (ca. 1921). This resource comprises the segments of the Palermo–Pease and Pease–Rio Oso Transmission Lines that are part of the South of Palermo Line and is entirely within the APE.

The length of the resource was reexamined from October 27 to November 14, 2014, and the historic condition of the resource was found to be poor, unchanged from the condition reported by Bowen and Yates (Pacific Legacy 2015). Bowen and Yates determined that P-51-000223/CA-SUT-223H does not appear to be a historic property for the purposes of Section 106 or a historical resource for the purposes of CEQA. The California SHPO concurred with this determination in a letter dated April 4, 2011 (Pacific Legacy 2015).

### *P-51-000224 (Rio Oso Substation)*

PG&E constructed the historic-period Rio Oso Substation in 1952. PAR Environmental Services, Inc. first recorded it in 2008. The substation is surrounded by switch yard structures, including a control building, a shop, and a storage building. At the time of the recording, the structures were all in good condition and in operation providing electric power for PG&E. The control building, PG&E Building #5937, is 49 feet, 6 inches long by 36 feet, 2 inches wide. It is constructed of reinforced concrete blocks with support pilasters on the interior side of each wall. The main entrance is on the south facade and originally consisted of a set of metal doors that opened to a concrete stoop accessed by two concrete risers with pipe rail handrails. Today the doors have been removed and the door jamb modified to accommodate one single hollow metal door. A single metal door is centrally placed on the rear (north) wall and accessed by a narrow stoop with two concrete risers. Fenestration includes symmetrically placed windows on each elevation. Those of the east elevation have two windows on either side of the entry. There are identically placed windows on the north and south elevations, as well as two on the west elevation. All windows are two-over-four metal sash windows.

This resource was reexamined on November 13, 2014, and the historic condition of the resource was found to be unchanged from that reported by PAR Environmental Services, Inc. (Pacific Legacy 2015). This resource is within the APE and marks the southeastern extent of the project and the eastern extent of the Rio Oso Sub Line Segment Loop.

In its evaluation of Rio Oso Substation, PAR Environmental Services described Rio Oso Substation as a utilitarian structure that lacks architectural detail. Located outside of a town, it was not intended for public view. Accordingly, it is a common structure that lacks historical significance. It did not play an important role in local history, as it did not indicate the beginning of electric service to the community, and its construction was not noted in local historical

accounts or contemporary newspapers. It is not associated with any person significant in state or local history, nor does it represent the work of a master or a unique type of construction. It lacks integrity of its original materials, most notably original equipment, and its setting and feeling have been altered by the replacement of original switchyard structures. Consequently, Rio Oso Substation does not appear eligible for listing in the NRHP or the CRHR. It is not considered a historical resource for the purposes of CEQA review (Pacific Legacy 2015).

### *P-58-001284/CA-YUB-1240H (Southern Pacific Railroad Grade)*

The Southern Pacific Railroad grade is a historic-period railroad line segment that was first recorded by Williams, Medin, and Silva in 2000 and updated by Berg and Nolte in 2008 (Pacific Legacy 2015). The resource is a remnant of a line that connected Oroville to Marysville. The line was completed in 1864 as part of the California Northern Railroad. By 1867, this company was absorbed by the Marysville Railroad Company and 2 years later by Yuba Railroad. In 1870, the railroad system was acquired by Central Pacific Railroad, which later became Southern Pacific Railroad.

This line has been abandoned for many years and the rails, ties, and other structural equipment have been removed. The only artifacts present are widely scattered railroad spikes. Segment integrity is variable, with some segments obliterated by later activities. The integrity of the recorded segment was described as "fair to poor" (Pacific Legacy 2015). P-58-1284 was determined ineligible for listing in the NRHP by a consensus determination through a previous Section 106 consultation in 2011 (Pacific Legacy 2015).

The raised railroad grade segment to the north of where the APE crosses the grade alignment was visually relocated in 2014. Current rice farming activities and/or PG&E tower construction appear to have obliterated or severely disturbed the grade in the vicinity of the APE corridor.

### *P-58-001372 (Western Pacific Railroad Segment)*

The Western Pacific Railroad is a historic-period railroad that was first recorded by Atchley and Fryman in 2000, and updated by Ashkar and Fish in 2004 and Deis in 2007 (Pacific Legacy 2015). It was constructed from 1903 to 1909 from Oakland, California to Salt Lake City, Utah. The Union Pacific Railroad Company acquired the Western Pacific in 1980 and improved the rail track so that larger locomotives and heavier freight cars could be hauled at higher speeds. The recorded segment of the Western Pacific retains its integrity of location, setting, essential design, workmanship, and material, and feeling and association. Materials including rails, tie plates, and ties have been replaced in kind since the original construction as standard maintenance operations. The present rails date between 1950 and 1982. The railroad embankment is covered with large quarried crushed slate, over a bed of smaller crushed aggregate. In association is a deteriorated "ice house" or roofed landing/platform that appears to date to the 1950s.

A 1,226-foot segment south of the originally recorded railroad segment was added during a 2014 pedestrian survey. It is in the same alignment, but there is an unrecorded gap of approximately 0.5 mile between the segments of this currently active railroad. The new segment recorded on November 12, 2014, was found to be in good condition. This resource is within the APE along

the western portions of existing structures of the Pease–Rio Oso Transmission Line (South of Palermo Line).

Jones & Stokes in 2001 recommended the Western Pacific Railroad eligible for listing in the NRHP (Pacific Legacy 2015). The SHPO concurred with the recommendation on June 20, 2001 (Pacific Legacy 2015). As an NRHP-eligible property, P-58-1372 is also considered a historical resource for the purposes of CEQA. The railroad is considered significant under Criterion A/1 because of its association with California's industrial transportation expansion and the central role it played in the economic development of the Central Valley (Pacific Legacy 2015). The SHPO again concurred with this determination in a letter dated April 4, 2011, for the Palermo–East Nicolaus 115 kV Transmission Line Project, although they only cite NRHP Criterion D (Pacific Legacy 2015).

#### *P-58-001369/CA-YUB-1443H (Levee)*

P-58-001369/CA-YUB-1443H is part of an earthen levee system identified on topographic quadrangle maps only as "private levee." Other segments of this levee system were previously recorded as P-58-1369 (CA-YUB-1443H) (Pacific Legacy 2015). Based on historical USGS quadrangles, the levee segment was likely constructed between 1910 and 1949 (Pacific Legacy 2015). This levee segment is part of a proposed PG&E access road for a portion of the Palermo-Pease Transmission Line (South Palermo Line).

The levee is situated within the Honcut Creek/Feather River floodplain. The newly recorded segment is located south of Honcut Creek between SR 70 to the west and the raised Union Pacific Railroad grade to the east. The levee is constructed of dirt, gravel, sand, and clay. The levee segment measures 4,175 feet long by 58 feet wide (base) by 6–10 feet tall. The crown of the levee is 10 feet wide and supports a graveled two-track road. At the eastern end of the segment is a ramped intersection with two ranch roads to the north and south. A ditch 20 feet to the south may be associated with the levee and/or the orchard. The ditch measures approximately 16 feet wide by 4 feet deep.

The site's historic condition is fair. The levee has been affected by the addition of the ranch roads, construction of SR 70, and levee maintenance. This resource has not been evaluated for inclusion in either the NRHP or the CRHR.

#### *P-58-001618/CA-YUB-1441H (The Browns Valley Grade Levee)*

Kraft and White in 2002 recorded a 4.2-mile stretch of Browns Valley Grade Levee, from the intersection with the Marysville City Levee on the west to Hallwood Boulevard on the east (Pacific Legacy 2015). A portion of this resource is within the APE, centering on an existing structure south of Levee Road of the Pease–Rio Oso Transmission Line (South of Palermo Line). The levee is constructed of dirt, gravel, sand, and clay. The crown of the levee is paved for 0.5 mile to the entrance of a dump. The levee crown past the dump is graveled until it reaches Walnut Avenue. North of Walnut Avenue to Hollywood Boulevard the levee appears unmaintained. The crown is not graveled and there are very tall grasses growing along the crown and side slopes. A variety of trees grow along the side slopes as well. Mike Smith, a Consulting Engineer for the Marysville Levee and Reclamation District 784, has said that the unmaintained section is left in place as an escape route for the residents of Marysville (Pacific

Legacy 2015). Along its length, the levee varies in height from 15 to 20 feet and widths at the toe vary from 43 to 85 feet.

The levee was first constructed in 1868 by landowners around the community of Marysville. It was reconstructed several times after high water breached the levee in 1876, 1878, 1879, 1880, 1884, 1907, and 1940. Early reconstruction included mending breaks, raising the levee height, and constructing sawbuck spurs. More recent reconstruction included raising the levee height (Pacific Legacy 2015).

A segment of the resource was reexamined on November 5, 2014, and the historic condition of the resource was found to be fair, exhibiting the kind of maintenance and changes described by Kraft and White in 2002 (Pacific Legacy 2015). Kraft and White recommended that P-58-001618 was ineligible for listing on the NRHP because it lacked historical significance "outside the context of the pattern of a levees [sic] role in flood control for Yuba County" (Pacific Legacy 2015). In addition, Kraft and White noted that numerous repairs, widening, and levee-raising have compromised the integrity of the levee, particularly materials and workmanship (Pacific Legacy 2015). P-58-1618 was determined ineligible for listing in the NRHP by a consensus determination through a previous Section 106 consultation (Pacific Legacy 2015). SHPO again concurred with the determination that the site is not eligible for inclusion in the NRHP or CRHR in a letter dated April 4, 2011, for the Palermo–East Nicolaus 115k kV Transmission Line Project (Pacific Legacy 2015).

#### *Nicolaus-ICF J&S-01-H (Historic Ranch Complex)*

This site comprises the remains of a historic-period ranch that was first recorded by Roark et al. in 2006 (Pacific Legacy 2015). The site measures 840 feet (N/S) by 240 feet (E/W). It consists of five features: concrete pump house remnants (Feature A); a concrete-lined well and concrete box, the latter not in situ (Feature B); a corral and concrete slab (Feature C); an earthen dam and road over Ping Slough (Feature D); and a dirt road (Feature E). Non-feature constituents consist of discarded tires (some associated with Features A and B), three discarded concrete culvert pipes, and a trailer frame. The complex is located south of Kempton Road along the Pease–Rio Oso Transmission Line (South of Palermo Line), and between the Ping Slough and the Western Pacific Railroad (P-58-001372) and the earthen dam to the south. The site was reexamined on November 25, 2014, and measurements were taken to complete the record. Overall, much of the site and features are consistent with the original recording, with the exception of condition, as all wooden features and posts are burned or charred from recent fires. This change of condition was recorded in the updated feature descriptions. A concrete water gate box with a monitoring well was also observed approximately 60 feet south of the dam along the eastern edge of the slough and outside of the site and project boundary.

Roark et al. in 2006 located the resource in an area called Nicolaus Township in the middle- to late-nineteenth century (Pacific Legacy 2015). The earliest recorded use of the site vicinity dates to between 1850 and 1860. An 1860 survey plat depicts "Smith's House" at an approximate location that could fall within the APE at the location of Nicolaus-ICF J&S-01-H. "Smith" is identifiable as W. H. Smith on later historic maps and in a local Sutter County history (Pacific Legacy 2015).

The Nicolaus-ICF J&S-01-H site is the remnant of a historic-period ranch of indeterminate age. No temporally diagnostic construction methods or materials are evident at the site, and historic maps do not depict structures at the location of the ranch site, thwarting efforts to place the resource in time. SHPO concurred with the determination that the site is not eligible for the NRHP or CRHR in a letter dated April 4, 2011, for the Palermo–East Nicolaus 115 kV Transmission Line Project (Pacific Legacy 2015).

### *Palermo-ICF-J&S-01-H (Historic Period Irrigation Complex)*

Palermo-ICF J&S-01-H was recorded in 2008 as a historic-period minor irrigation or drainage system (Pacific Legacy 2015). The resource consists of one main concrete-lined, north-south (353°/173°) oriented irrigation/drainage ditch approximately 3,000 feet long, along with two lateral ditches. One lateral extends west from the main ditch (just south of parallel to East Palermo Street) and the other trends northeast–southwest from the northern terminus of the main ditch.

The resource was reexamined on November 28, 2014, and the historic condition of the resource was found to be relatively unchanged from that reported by Roark and Fransen in 2008 (Pacific Legacy 2015). The resource was updated with approximately 1,000 feet of additional ditch to the south of the main line, approximately 42 feet to the west, and a new northeast–southwest trending ditch at the north end of the main line. The resource is within the APE of the Palermo–Pease Transmission Line (South of Palermo Line). The main ditch is approximately 3,000 feet long and terminates at South Villa Avenue and follows the transmission line from an area north of an existing structure north of North Villa Road to an area south of an existing structure south of Palermo Road. Beyond an existing structure near South Villa Road (the last 450 feet), the ditch is demolished and concrete ditch lining fragments are scattered throughout the area, mainly along the alignment of the intact ditch to the north.

Intact portions of the ditch were measured, updating the dimensions for the main ditch. The first lateral ditch extends to the west for 142 feet. It continues west toward the Southern Pacific Railroad line beyond the project area. The second lateral ditch was recorded for 278 feet and trends northeast–southwest intersecting with the northern terminus of the main ditch. It trends for 100 feet at 77° to the northeast and continues northeast out of the project area. It trends for 45 feet at 235° to the southwest then continues for 133 feet at 224° to the southwest, continuing beyond the project area.

The resource is located in an agricultural setting along the transmission line corridor and parallels the Southern Pacific Railroad line to its west. The southern area (north of South Villa Avenue) has been heavily disturbed by equipment, possibly associated with the 2008 construction of the Palermo–East Nicolaus Transmission Line running parallel and to the east.

At least two sections of the main ditch were repaired with modern concrete. Graffiti observed scratched into one section of new concrete was dated 2008, and these repairs may be also be associated with the construction of the newer transmission line, evidenced by one section that juts away from the original alignment to circumvent a new transmission tower near North Villa Avenue. Debris in the area includes a nearly continuous scatter of recent, temporally nondiagnostic glass along portions of the main ditch. Solitary fragments of amethyst, cobalt

blue, and milk glass were also observed, along with a bottle base with a Glass Containers, Inc. maker's mark that dates to after 1967 (Pacific Legacy 2015).

The two ditches are irrigation features associated with the Palermo Colony, which was incorporated on January 7, 1888 (Pacific Legacy 2015). Roark and Fransen in 2008 evaluated the site under the NRHP and CRHR significance criteria, with a period of significance from January 7, 1888, to 1900 (the effective start and end dates for the Palermo Colony) (Pacific Legacy 2015). The first portion of the Palermo Colony to be subdivided and developed was a 235-acre tract of land east of and partially abutting the Southern Pacific Railroad. A network of ditches had been built to irrigate this land by April 1888. Palermo-ICF J &S-O 1-H is clearly part of this network of ditches.

The extant ditches, Palermo-ICF J&S-01-H, however, are concrete structures built over the original earthen ditches after 1900 and do not date to the Palermo Colony's period of significance. Palermo-ICF J&S-01-H lacks integrity of materials, design, and workmanship because the earthen ditches have been replaced with concrete ones. Furthermore, the lack of citrus orchards in the vicinity of the ditches compromises the resource's integrity of setting, association, and feeling. The ditches retain their original location. Retaining only one of seven aspects of integrity, Palermo-ICF J&S-0 1-H does not convey the significance of Palermo Colony. Roark and Fransen in 2008 recommended that this resource did not constitute a historic property under Section 106 or a historical resource for the purposes of CEQA (Pacific Legacy 2015). SHPO concurred with the determination that the site is not eligible for inclusion in the NRHP or CRHR in a letter dated April 4, 2011, for the Palermo–East Nicolaus 115 kV Transmission Line Project (Pacific Legacy 2015).

#### *Palermo Substation*

PG&E'S historic-period Palermo Substation, constructed ca. 1960, is located in a rural area of the Sierra Nevada foothills northwest of Palermo in Butte County. Transmission towers and lines lead into the substation from multiple directions. Transformers, busing, and other equipment rest on concrete footings in the predominantly gravel-covered yard of the substation grounds. Such equipment is situated mainly to the east and west of the main substation building. The substation building is a rectangular, dark green, single-story structure of concrete masonry unit construction. Its roof is flat with an approximately 6-inch eave. The building's west elevation has three windows. The building's south façade has two aluminum slide windows and one metal personnel door. This is the original substation building and is still in use; however, the electrical equipment has likely been subject to continuous maintenance, upgrade, and replacement since the early 1960s.

This resource was reexamined on November 5, 2014, and the historic condition of the resource was found to be unchanged from that reported by Bowen and Yates in 2008 (Pacific Legacy 2015). The substation was also recorded in 2006 by Roark, Fransen, and Syda (Pacific Legacy 2015). This resource is within the APE and marks the northeastern end of the project area and the northeastern end of the Palermo Sub Line Segment.

Bowen and Yates in 2008 stated that Palermo Substation, including both its building and continuously modified electrical equipment, does not appear to be a significant historical

resource (Pacific Legacy 2015). PG&E's Palermo Substation is not associated with events that have made a significant contribution to the history of the local area, region, state, or nation (Criterion A/1). The property does not appear to be associated with a person who made significant contributions to local, state, or national history (Criterion B/2). The substation buildings and electrical equipment do not embody characteristics of a type, period, region, or method of construction. They are not the works of a master, nor do they possess high engineering value (Criterion C/3). Although buildings can provide information about historical methods of construction (Criterion D/4), Palermo Substation does not stand to yield important historical information and therefore does not stand to serve as a primary source in this regard (Pacific Legacy 2015). SHPO concurred with the determination that the site is not eligible for inclusion in the NRHP or CRHR in a letter dated April 4, 2011, for the Palermo–East Nicolaus 115 kV Transmission Line Project (Pacific Legacy 2015).

### *Isolated Finds*

#### *Isolate PL-Palermo-01H*

Isolate PL-Palermo-01H is a historic-period debris scatter consisting solely of three cans: a cone-top beer can (1935 to ca.1960), a sanitary can (1904 to modern period), and one coffee can fragment modified with holes to form a sieve. The can cluster is located in an area of very sparse historic-to-modern period debris sheet that is dispersed across a 100-foot radius south of Upper Palermo Road of the Palermo Sub Line Segment. The three cans are the only cluster of artifacts. The other observed objects lack the density or the integrity to be recorded as a site. They also lack proximity to the isolate to be included in PL-Palermo-01H. Artifacts dispersed throughout the area include bottle bases (one stamped with the Glass Containers Corp. maker's mark dated 1945 to 1967), one piece of solarized amethyst glass shard (late 1870s to ca.1930), a metal barrel hoop, and one piece of nondiagnostic ceramic whiteware (Pacific Legacy 2015).

#### *Isolate PL-Palermo-ISO-01*

Isolate PL-Palermo-ISO-01 is a single tan/yellow granitic, battered cobble. It measures 4.3 by 3.5 by 1.6 inches. It is battered on one side. It does not show signs of reshaping and appears to be a river-worn cobble used opportunistically. It is possible that the battering occurred naturally; however, no other cobbles were noted in the surrounding area. The cobble is situated in the corner of a cleared agricultural field on a slight rise near a drainage within the Wyandotte Creek floodplain. The rise is likely natural but has been shaped and improved during construction of a structure of the Palermo–Pease Transmission Line (South of Palermo Line).

#### *Isolate PL-Rio Oso-01*

Isolate PL-Rio Oso-01 is a single tan/yellow granitic groundstone mano, most likely prehistoric, with large (0.4 inch in diameter), well-rounded brown inclusions. It measures 4.5 by 3.1 by 2.2 inches, and has one side that is flat, smooth, and polished, showing evidence of use. The polished side appears pecked and shaped along its margins. One end appears battered and has a small chunk of material missing. It is located in an open agricultural field near an existing structure of the Bogue–Rio Oso/East Nicolaus–Rio Oso Line (Rio Oso Sub Line Segment loop) and has likely been displaced, as no other materials or darkened soils are present.

### 3.5.3.7 Results of Historical Resources Inventory and Evaluation

#### *Caribou–Palermo 115 kV Transmission Line*

The Caribou–Palermo 115 kV Transmission Line comprises an approximate 56-mile span between the PG&E Caribou Powerhouse in Plumas County California and the PG&E Palermo Substation in Butte County, California. The Caribou–Palermo Transmission 115 kV Line follows the same alignment and has subsumed the original single circuit towers associated with the Caribou–Valona Line built in 1921, with a few modifications.

The Caribou–Palermo transmission line does not qualify as a historical resource under Criterion A/1 as its only historical associations are with the original Caribou–Valona (later Caribou–Golden Gate) 165 kV transmission line, which lacks both significance and integrity as a cohesive representative of early twentieth century transmission development. While the line, in its original configuration, was the first to run at 165 kV (15 kV higher than previously established lines) it held this record for only 6 months before being surpassed by common application of 220 kV. Increases in voltage were rapid during the period, with tests as early as 1913 indicating that voltages higher than 200 kV were imminently tenable. Consequently, the 165 kV development is largely representative of the continuing and incremental march toward high voltage transmission rather than a technological or operational superlative in its own right. SHPO concurred with this conclusion during evaluation of other segments of the same historic alignment for the Palermo–East Nicolaus 115 kV Transmission Line Project (see discussion of Palermo–Pease and Pease–Rio Oso lines below) (PG&E 2016). Additionally, the Caribou system no longer services the area for which it was designed, nor operates at the initially established voltage, thereby severing important historic period associations related to long distance Bay Area transmission.

The line is also not eligible under Criterion B/2 because it is not associated with the lives of persons significant in our past. While the theories underlying the development of the 165 kV alignment were influenced and enabled by applied research undertaken and disseminated by noted pioneering electrical engineer Professor Harris J. Ryan of Stanford, Ryan did not play a direct role in the project, and the line is not representative of the most significant or noted aspects of his career. It is not eligible under Criterion C/3 because it does not have distinct characteristics, was not designed by a master, and does not possess high or artistic value. While the original towers were designed to accommodate the rugged terrain and variable weather conditions of the Sierra Nevada as well as adapt to the needs of the Valley landscape, all towers were largely standardized in design, addressing the environmental constraints using established engineering models and methods. Finally, the line does not provide important information to our understanding of the past under Criterion D/4. No additional information was uncovered that indicates that the conversion of the Caribou–Palermo segment to 115 kV in the 1960s or subsequent modifications are historically significant under any CRHR criteria.

#### *Palermo–Pease 115 kV Transmission Line*

The Palermo–Pease 115kV Transmission Line comprises an approximate 26.5-mile span between Palermo Substation in Butte County and Pease Substation in Yuba City. The Palermo–Pease Transmission 115 kV Line is comprised of three segments: 145 single-circuit towers associated with the Caribou–Valona Line built in 1921; the double-circuit spur connecting to

Palermo Substation built in 1960; and the double-circuit spur connecting to Pease Substation built in 1960.

As described above, the historic era Caribou–Valona transmission line as a whole or in part does not appear to qualify as a historic property or historical resource; therefore, the portion of the Palermo–Pease 115 kV line that includes the historic alignment also does not qualify for the reasons listed above. In addition, the historic portion of the line was found not eligible for inclusion in the NRHP or CRHR under the name Palermo–Rio Oso #2 in 2011 as part of a Section 106 concurrence process.

The 1960s segments, while more 50 years of age, do not represent innovation in electrical engineering technology, having been built to carry electricity at 115 kV when utility providers were already building higher voltage lines and systems achieving upwards of 500 kV. These line segments were not the cause of growth, new development, or industrialization of the communities in the vicinity of the line, nor were they important examples of engineering and design, and therefore are not eligible under Criteria A/1 or C/3. The 1960s segments are also not eligible under Criterion B/2 as they are not associated with important persons in local, regional, state or national history. Further study of the line would also not yield additional information that could be considered important in local, regional, state, or national history, so the line is not eligible under Criterion D/4.

#### *Pease–Rio Oso 115 kV Transmission Line*

The Pease–Rio Oso 115 kV Transmission Line comprises an approximate 27.4-mile span between Pease Substation in Yuba City and Rio Oso Substation in Yuba County. The Pease–Rio Oso 115 kV line contains 141 structures within the original Caribou–Valona alignment that date to the original construction in 1921, with a few modifications. The segments of the line that extend outside the historic alignment to the Pease and Rio Oso Substations were installed in 1960 and 1957, respectively.

As described above, the Caribou–Valona transmission line does not appear to qualify as a historic property or historical resource; therefore, the portion of the Pease–Rio Oso 115 kV line that includes the historic alignment also does not qualify for the reasons listed above. In addition, the historic portion of the line was found not eligible for inclusion in the NRHP or CRHR under the name Palermo–Rio Oso #2 in 2011 as part of a Section 106 concurrence process.

The 1957 and 1960 segments, while more than 50 years of age, do not represent innovation in electrical engineering technology, having been built to carry electricity at 115 kV when utility providers were already building higher voltage lines and systems achieving upwards of 500 kV. These line segments were not the cause of growth, new development, or industrialization of the communities in the vicinity of the line, nor were they important examples of engineering and design, and are therefore not eligible under Criteria A/1 or C/3. The 1960s segments are also not eligible under Criterion B/2 as they are not associated with important persons in local, regional, state or national history. Further study of the line would also not yield additional information that could be considered important in local, regional, state, or national history, and accordingly, the line is not eligible under Criterion D/4.

### Palermo–Bogue 115 kV Transmission Line

The Palermo–Bogue 115kV Transmission Line comprises an approximately 35.7-mile span between Palermo Substation in Butte County and Bogue Substation in Yuba City. A portion of the Palermo–Bogue 115 kV Transmission Line follows the alignment of the historic-era Las Plumas Transmission Line (c. 1908). The segments of line extending from the historic alignment to the Palermo and Bogue Substations were installed in 1960 and 1971, respectively.

The Las Plumas line was found not eligible for inclusion in the NRHP or CRHR in 2011 as part of a Section 106 concurrence process, and all the towers of the Las Plumas alignment, including those supporting the Palermo–Bogue circuit, have been replaced with modern facilities.

The 1960s segment, while more than 50 years of age, do not represent innovation in electrical engineering technology, having been built to carry electricity at 115 kV when utility providers were already building higher voltage lines and systems achieving upwards of 500 kV. It was not the cause of growth, new development, or industrialization of the communities in the vicinity of the line, nor were they important examples of engineering and design, and is therefore not eligible under Criteria A/1 or C/3. The 1960 segment is also not eligible under Criterion B/2 as it is not associated with important persons in local, regional, state or national history. Further study of the line would also not yield additional information that could be considered important in local, regional, state, or national history, so the line is not eligible under Criterion D/4. The 1971 segment is less than 50 years old and therefore not eligible for consideration as a historic property or historical resource; however, there is little evidence to suggest that it would be found eligible under any criteria once the segment reaches the 50-year threshold.

### Bogue–Rio Oso 115 kV Transmission Line

The Bogue–Rio Oso 115 kV Transmission Line comprises an approximate 21.2-mile span between Bogue Substation in Yuba City and Rio Oso Substation in Yuba County. A portion of the Bogue–Rio Oso 115kV Transmission line follows the alignment of the historic era Las Plumas Transmission Line (c. 1908). The segments of line extending from the historic alignment to the Bogue and Rio Oso Substations were installed in 1971 and 1957, respectively.

The Las Plumas line was found not eligible for inclusion in the NRHP or CRHR in 2011 as part of a Section 106 concurrence process, and all the towers of the Las Plumas alignment, including those supporting the Bogue–Rio Oso circuit, have been replaced with modern facilities.

The 1957 segment, while more than 50 years of age, does not represent innovation in electrical engineering technology, having been built to carry electricity at 115 kV when utility providers were already building higher voltage lines and systems achieving upwards of 500 kV. It was not the cause of growth, new development, or industrialization of the communities in the vicinity of the line, nor was the line an important example of engineering and design, and is therefore not eligible under Criteria A/1 or C/3. The 1957 segment is also not eligible under Criterion B/2 as it is not associated with important persons in local, regional, state or national history. Further study of the line would not yield additional information that could be considered important in local, regional, state, or national history, so the line is not eligible under Criterion D/4. The 1971 segment is less than 50 years old and therefore not eligible for consideration as a historic

property or historical resource; however, there is little evidence to suggest that it would be found eligible under any criteria once the segment reaches the 50-year threshold.

#### *Rio Oso–Nicolaus 115 kV Transmission Line*

The Rio Oso–Nicolaus 115 kV Transmission Line comprises an approximate 5.37-mile span between the PG&E Rio Oso Substation in Yuba County and the PG&E East Nicolaus Substation in Sutter County. Portions of the Rio Oso–Nicolaus circuit share towers with the Bogue–Rio Oso circuit and date to 1957. These segments do not qualify as historic resources for the reasons listed above. The remaining portions of the circuit were constructed in 1980 and do not meet the age eligibility threshold for inclusion on the NRHP and CRHR; however, there is little evidence to suggest that it would be found eligible under any criteria once the segment reaches the 50-year threshold.

#### *Rio Oso–West Sacramento 115 kV Transmission Line*

The Rio Oso–West Sacramento 115 kV Transmission Line comprises an approximate 38.23-mile span between the PG&E Rio Oso Substation in Yuba County and the PG&E West Sacramento Substation in West Sacramento. The Rio Oso–West Sacramento 115 kV Transmission Line was constructed in 1963. While more than 50 years of age, the line does not represent innovation in electrical engineering technology, having been built to carry electricity at 115 kV when utility providers were already building higher voltage lines and systems achieving upwards of 500 kV. These line segments were not the cause of growth, new development, or industrialization of the communities in the vicinity of the line, nor were they important examples of engineering and design, and are therefore not eligible under Criterion A/1 or C/3. The line is also not eligible under Criterion B/2 as it is not associated with important persons in local, regional, state or national history. Further study of the line would also not yield additional information that could be considered important in local, regional, state, or national history, and accordingly, the line is not eligible under Criterion D/4.

### 3.5.3.8 Paleontological Resources

#### *Geology and Existing Conditions*

The project area is located along the western Sierra foothills and the Great Valley geomorphic provinces of California. The Great Valley is an alluvial plain approximately 50 miles wide and 400 miles long in the central portion of California. The Great Valley's northern portion is the Sacramento Valley, drained by the Sacramento River, and its southern portion is the San Joaquin Valley, drained by the San Joaquin River. The geology of the Great Valley and westernmost Sierra foothills is typified by thick sequences of alluvial sediments derived primarily from erosion of the Sierra Nevada to the east and, to a lesser extent, erosion of the Klamath Mountains and Cascade Range to the north.

These sediments were transported downstream and subsequently laid down as a river channel, floodplain deposits, and alluvial fans. The Sutter Buttes, located west of the project area, are composed of a volcanic plug that penetrated the alluvial basin sediments during the Pliocene. The project area and five line segments (South of Palermo Line, Palermo Sub Line Segment, Pease Sub Line Segment, Bogue Sub Line Segment, Rio Oso Sub Line Segment Loop) are underlain by the Modesto, Riverbank, and Laguna Formations.

### Geologic Units and Locality Search Results

Most of the project area is underlain by geological units with paleontologically sensitive ratings ranging from PFYC 1 to PFYC 3. The Project Area is primarily underlain by Quaternary (Holocene) alluvium (Qa) and basin (Qb) deposits (21.45% of Project Area) and Pleistocene Riverbank (Qr) (51.80%) and Modesto (Qm) (20.47%) formations with lesser amounts of Jurassic volcanics (Jv) (1.29%), Pliocene tuffs of Oroville (QPto) (3.30%), Pliocene Laguna Formation (Pl) (1.24%), and modern dredge or mine tailings (t) (0.45%).

#### Jurassic Volcanics

The Jurassic (201–145 million years old) volcanics of the project area consist of pyroclastic rocks and flows (Paleo Solutions 2015). No fossils are recorded from these deposits (Finger 2015). This material is considered to have no potential to contain fossils (PFYC 1).

#### Tuffs of Oroville

Pliocene (5.3–2.6 million years old) volcanoclastic deposits and tuff are 20–40 feet thick (Paleo Solutions 2015). No fossils are recorded from these deposits (Paleo Solutions 2015). However, this material does occasionally preserve fossils and is assigned PFYC 2 (low potential).

#### Laguna Formation

The Pliocene (5.3–2.6 million years old) Laguna Formation consists of beds of alluvial gravel, sand, and silt. Pebbles and cobbles of quartz and metamorphic rock fragments dominate the gravels, and finer sediments are arkosic. Generally, the sediments coarsen upward and are moderately to well compacted (Paleo Solutions 2015). No fossils are recorded from the Laguna Formation in the project area (Paleo Solutions 2015); however, this may be attributable to lack of paleontological investigation in the area, rather than absence of fossils. The fine-grained beds exhibit conditions in which significant fossils could be preserved. Accordingly, the Laguna Formation is assigned moderate sensitivity for paleontological resources (PFYC 3).

#### Modesto Formation

The Modesto Formation consists of late Pleistocene (126,000–11,700 years old) fluvial sands and gravels, with silty sand and sandy mud overbank deposits forming a thin veneer over the older Riverbank Formation (Paleo Solutions 2015). This formation includes coeval but disconnected wind-blown and alluvial fan deposits (Paleo Solutions 2015). The Modesto has been divided into informal upper and lower members. Both members consist of materials typical of river deposits; however, unlike the upper member, the lower member contains soils of the pedogenic unit B horizon (Paleo Solutions 2015). The UCMP records search identified no recorded fossil localities within or adjacent to the project area (Paleo Solutions 2015). However, the literature review revealed that significant vertebrate fossils have been recovered in Butte and Sutter Counties from Pleistocene alluvial deposits similar to the Modesto Formation. Recovered fossils include horse, bison, bird, and mammoth (Paleo Solutions 2015). These formations also produced significant collections of vertebrate and plant fossils elsewhere in the Central Valley of California. The dearth of fossil records from the Modesto Formation in the project area may be due to lack of paleontological investigations, rather than an absence of fossils. Accordingly, the

Modesto Formation is assigned moderate sensitivity for paleontological resources (PFYC Class 3).

#### *Riverbank Formation*

The Riverbank Formation was formed during the middle Pleistocene (781,000–126,000 years ago). It consists of arkosic alluvial terraces and fans composed of weathered, reddish gravel, sand, silt and clay. The Riverbank Formation is very similar lithologically to the Modesto Formation, but has a greater degree of soil development. In the project vicinity, the Riverbank Formation is broken into informal upper and lower members (Paleo Solutions 2015). The Riverbank Formation is interpreted as glacial outwash from the Sierra Nevada (Paleo Solutions 2015). As noted for the Modesto Formation, the literature review revealed that significant vertebrate fossils have been recovered in Butte and Sutter Counties from Pleistocene alluvial deposits similar to the Riverbank Formation. Furthermore, several locations of the Riverbank Formation in the Sacramento and northern Central Valley area have yielded significant specimens of mammals; several types of plants (Paleo Solutions 2015); and reptiles, amphibians, fish, and birds. The few fossils recorded from the Riverbank Formation in the project area may therefore be due to lack of paleontological investigation rather than absence of fossils. Accordingly, the Riverbank Formation is assigned moderate sensitivity for paleontological resources (PFYC Class 3).

#### *Holocene Alluvium and Basin Deposits*

In the project area, Quaternary (Holocene) (11,700 years old or less) alluvial and basin deposits consist of unconsolidated gravels, sands, silts, and clays deposited in alluvial fan and valley fill or basin environments (Paleo Solutions 2015) by modern streams and rivers. Holocene deposits cover large portions of the Central Valley and foothills area and are typified as coalescing fan-like deposits of sediments. Holocene deposits grade laterally and incise into older Pleistocene deposits, particularly in the project area, in such a way that the contact can be difficult to draw in certain locations. Holocene deposits consist of dark brown silty clay and unconsolidated sand. The Holocene alluvial deposits exposed at the ground surface in the study area generally contain only the remains of extant, modern taxa, which are not considered unique paleontological resources. Accordingly, these deposits have low sensitivity for paleontological resources (PFYC 2). However, such deposits often overlay deeper, previously undisturbed, older Pleistocene alluvium or other potentially fossil-bearing sedimentary deposits or bedrock units where the probability of finding significant vertebrate fossil remains increases.

#### *Dredge or Mine Tailings*

Dredge or mine tailings are the waste material from modern mining activities, and consist of a mud-like slurry. Fossils found in disturbed sediments such as dredge or mine tailings, artificial fill used in construction, and agricultural soils have lost their native provenance and therefore have marginal scientific value. Accordingly, dredge and mine tailings are generally considered to have low to no potential (PFYC 2 or 1) to produce significant paleontological resources.

### 3.5.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to cultural and paleontological resources derived from Appendix G of the CEQA Guidelines, provide APMs to

reduce impacts, and assess potential project-related construction and operational impacts on cultural and paleontological resources.

### 3.5.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Definitions for what constitutes a significant or unique cultural or paleontological resource are described in Section 3.5.2.1. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts to cultural and paleontological resources were evaluated for each of the criteria listed in Table 3.5-1, as discussed in Section 3.5.4.3.

### 3.5.4.2 Applicant-Proposed Measures

***APM-CR-1: Workers Environmental Awareness Training***

PG&E will provide environmental awareness training on archeological and paleontological resources protection. This training may be administered by the principal cultural resources specialist as a stand-alone training or included as part of the overall environmental awareness training as required by the project and will at minimum include: types of cultural resources or fossils that could occur at the project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource, human remain, or fossil discovery; and penalties for disturbing cultural or paleontological resources.

***APM CR-2: Flag and Avoid Resources P-51-000150, P-58-001372, P-58001369, PL-Palermo-011H, Old Marysville Road***

A qualified archaeologist will flag sites P-51-000150, P-58-001372, PL-Palermo-011H, and the Old Marysville Road for avoidance. Sites will be marked with flagging tape, safety fencing, and/or sign designated it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment will not intrude on these sites during construction. For those sites that contain an existing access road within their site boundary or are an existing road (e.g., Old Marysville Road), the road will be used as-is (i.e., no grading, widening, or other substantial improvements), and signs or safety fencing will be established on either side of the road within the site's boundary to avoid impacts caused by construction vehicles.

If it is determined that the project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the NRHP/CRHR will be conducted. Should the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level will be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate in consultation with CPUC and interested parties. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures will be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival

documentation, or other measures as deemed appropriate in consultation with the CPUC and interested parties.

***APM CR-3: Manage Unanticipated Cultural Resources Discoveries Properly***

*a) Buried Cultural Resources.*

If buried cultural resources are inadvertently discovered during site preparation or construction activities, work will stop in that area and within 100 feet of the find until a qualified cultural resources specialist/archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the cultural resources specialist/archaeologist's approval. PG&E will implement the cultural resources specialist/archaeologist's recommendations for treatment of discovered cultural resources.

*b) Human Remains.*

In the unlikely event that human remains or suspected human remains are uncovered during pre-construction testing or during construction, all work within 100 feet of the discovery will be halted and redirected to another location. The find will be secured, and PG&E's cultural resources specialist or designated representative will be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the cultural resources specialist will determine whether the find is an archaeological deposit and whether paragraph (a) of this APM should apply. If the remains are human, the cultural resources specialist will immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the cultural resources specialist contact the NAHC within 24 hours. The NAHC, as required by PRC Section 5097.98, will determine and notify the Most Likely Descendant.

*c) Paleontological Resources.*

If significant paleontological resources are discovered during construction activities, work will stop within 100 feet and the project cultural resource specialist will be contacted immediately. The project cultural resources specialist will work with the qualified paleontologist to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approval by the cultural resource specialist in coordination with the paleontologist.

In the event that significant paleontological resources are encountered during the project, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E, and CPUC. The paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for

identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency.

***APM-CR-4: Paleo Monitoring***

Interval (spot check) monitoring for paleontological resources will be required for excavation activities larger than 3 feet in diameter and grading to depths greater than 2 feet that intersect undisturbed sediments in the Riverbank, Modesto, and Laguna formations. Monitoring is not required for shallow excavations into sediments previously disturbed by agricultural activities, development, or construction related to the existing Palermo–East Nicolaus 115 kV Transmission Line regardless of the mapped geologic unit sensitivity ranking because fossils found within such sediments would lack provenience data critical to scientific significance. In the unlikely event that a highly fossiliferous facies is encountered, monitoring will be conducted full time until excavations within that facies are complete. Conversely, monitoring may be reduced or suspended in the absence of encountering paleontologically sensitive sediments. Monitoring will be done by a qualified paleontological monitor. The paleontological monitor will document monitoring activities on monitoring logs. Monitoring logs and reports will include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or salvage fossils discovered. Photographs and other supplemental information will be included as necessary.

#### 3.5.4.3 Potential Impacts

Potential project impacts related to cultural and paleontological resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

As described in Chapter 2, *Project Description*, the project entails replacing existing conductor with new aluminum cable, modify existing lattice steel towers, and replacing existing lattice steel towers and light-duty steel poles along approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV Transmission System. The operation and maintenance activities required for the upgraded transmission line will not change from those currently required for the existing system; thus, no operation-related impacts related to cultural or paleontological resources will occur. Therefore, the impact analysis is focused only on construction activities.

Project impacts on paleontological resources were evaluated based on an assessment of the paleontological sensitivity of identified geologic formations in relation to the proposed project activities. In accordance with Appendix G of the CEQA Guidelines, project impacts on paleontological resources were considered significant if the project would directly or indirectly destroy a unique paleontological resource or site. Sensitivity ratings were employed to assess the likelihood and/or severity of project impacts. The sensitivity ratings provided in Table 3.5-2, which combine a number of relevant considerations, are considered in light of the nature of subsurface disturbance associated with the project, and the significance of impacts is determined based on that information. Ground disturbance in geologic units and geographic areas known to contain scientifically significant fossils may produce adverse impacts on nonrenewable

paleontological resources (State CEQA Guidelines, 14 CCR Sections 15064.5[3] and 15023; State CEQA Guidelines Appendix G, Section V, Part C).

Project impacts on cultural resources are defined by Section 106 of the NHPA and by CEQA as a change in the characteristics of a resource that convey its significance or justify its eligibility for inclusion in the NRHP, CRHR, or local register. Direct impacts may occur by (1) physically damaging, destroying, or altering all or part of a resource, (2) altering characteristics of the surrounding environmental setting that contribute to the significance of a resource, (3) allowing a resource to deteriorate through neglect, or (4) incidental discovery of archaeological resources without proper notification. Direct impacts can be assessed by determining the exact location of historical resources and assessing their significance under NRHP and CEQA criteria, identifying the types and extent of the proposed impacts and their effect on significant resources, and determining appropriate measures to reduce impacts to less-than-significant levels. Indirect impacts may include changes to the viewshed of a significant resource through introduction of a new project element.

CEQA recommends avoidance or preservation in place as the preferred treatment for eligible properties and unique or significant archaeological or historical resources (PRC 21083.2). If avoidance is not a feasible option, data recovery is a common treatment. For architectural resources, if physical changes to a property—excluding demolition—can be treated following the Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, the project-related impact on the historical resource will generally be considered reduced below a level of significance.

**a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? *Less than Significant***

A total of 10 built-environment resources were identified within the APE. Of these, six (P-51-000222, P-51-000223, P-51-000224, P-58-001618, Palermo-ICF-J&S-01-H, Palermo Substation) have been determined ineligible for listing in either the NRHP or the CRHR; two (P-58-001372 and P-51-000150) have been determined eligible for listing in the NRHP/CRHR; and two (P-58-001369 and Old Marysville Road) have not been evaluated for either the NRHP or the CRHR. In addition, none of the transmission facilities associated with the project more than 50 years old were found to be eligible for inclusion in the NRHP or CRHR and thus do not qualify as historic resources. Implementation of APM CR-1, which requires preconstruction worker awareness training, APM CR-2, which requires flagging and avoidance for the unevaluated or eligible resources, and APM CR-3, which would reduce the potential for damage or destruction to archaeological resources as a result of an inadvertent discovery, will ensure any impacts will be less than significant to these resources. Accordingly, the project will not cause a substantial adverse change in the significance of a historical resource.

**b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? *Less than Significant***

Four historic-era archaeological sites are within the project APE. Three of the sites (Nicolaus-ICF J&S-01-H, PL-Palermo-02H, and PL-Palermo-03H) were determined not eligible for either the NRHP or the CRHR. The remaining site (PL-Palermo-011H) has not been evaluated for

inclusion in the NRHP or CRHR. Three isolates were also identified within the APE; isolates are not eligible for inclusion in the NRHP or CRHR.

With implementation of APM CR-2, which will require flagging avoidance for site PL-Palermo-11H, any impacts on this resource will be less than significant. Implementation of APM CR-1 and AMP CR-3 will reduce the potential for damage or destruction to archaeological resources from the inadvertent discovery of undiscovered resources to a less-than-significant level because PG&E will conduct preconstruction worker awareness training and manage undiscovered resources in accordance with the appropriate requirements. With these measures, the project will not cause a substantial adverse change in the significance of an archaeological resource.

**c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?** ***Less than Significant.***

Most of the project area is underlain by geological units with paleontologically sensitive ratings ranging from PFYC 1 to PFYC 3. The Laguna, Modesto, and Riverbank Formations are assigned PFYC Class 3 (moderate potential). Potential impacts of the proposed project on paleontological resources are anticipated to be limited to these three formations, where these units are present at the ground surface, or where these units underlie younger Quaternary alluvium and basin deposits at depth. No direct impacts are anticipated during shallow excavations into previously disturbed areas, mine tailings, younger Quaternary alluvium or basin deposits, Tuffs of Oroville, or Jurassic volcanics (PFYC 1-2). No indirect or cumulative impacts are anticipated.

Only activities affecting the moderate-sensitivity Laguna, Modesto, and Riverbank Formations in the project area have the potential to affect paleontological resources. APM CR-3 and APM CR-4 would reduce potential impacts by managing unanticipated paleontological resources discoveries properly and monitoring excavation activities that may encounter paleontologically sensitive sediments. With the implementation of APM CR-3 and APM CR-4, the project will have less-than-significant direct or indirect effects on a unique paleontological resource or geologic unit.

**d) Would the project disturb any human remains, including those interred outside of formal cemeteries?** ***No Impact***

Archival research and field investigations did not identify human remains within the project APE, therefore the project will likely result in no impact on human remains or interments. If human remains are encountered during project-related activities, APM CR-3 will be implemented, which will avoid potential damage or destruction to human remains or internments from the inadvertent discovery.

## 3.5.5 REFERENCES

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# 3.6 GEOLOGY AND SOILS

## 3.6.1 INTRODUCTION

This section describes the existing geological and soil conditions, and potential geologic and geotechnical hazards at the project site and surrounding areas, and concludes that any impacts will be less than significant. Potential geologic hazards that were evaluated along the project route include surface fault rupture, ground shaking, landsliding, liquefaction, lateral spreading, differential compaction, subsidence, erosion, and expansive clays. The implementation of Applicant-Proposed Measures (APMs) described in Section 3.6.4.2 will further reduce the anticipated less-than-significant impacts on geology and soils. The project's potential effects on geology and soils were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.6-1 and discussed in more detail in Section 3.6.4.

**Table 3.6-1: CEQA Checklist for Geology and Soils**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

## 3.6.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.6.2.1 Regulatory Background

#### *Federal*

No federal regulations related to geology, soils, and seismicity are applicable to the project.

#### *State*

*Alquist-Priolo Earthquake Fault Zoning Act*

California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994. Also known as the Alquist-Priolo Act, it requires the establishment of "earthquake fault zones" along known active faults in California. Regulations on development within these zones are enforced to reduce the potential for damage resulting from fault displacement. Information on earthquake fault zones is provided for public information purposes (see Section 3.6.3.4, Seismicity and Fault Rupture Hazard, for further discussion).

*Seismic Hazards Mapping Act*

The Seismic Hazards Mapping Act (SHMA) of 1990 addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The SHMA states that "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety."

#### *Local*

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. Current project plans do not require installation of any facilities that would require a building permit; however, if plans were to change during final design of the project, PG&E would obtain a building permit or other required ministerial permits.

### 3.6.2.2 Methodology

Information regarding the geology and soils conditions in the project area and the surrounding region was compiled from published literature, maps, geospatial data, and examination of aerial imagery. The following specific sources of information were consulted:

- Data regarding geologic units and structural features were obtained from maps and reports published by the California Geological Survey (CGS) and United States Geological Survey (USGS), as well as scientific papers, standard references on California geology, and the geotechnical report prepared for the existing power line alignment.

- Soil data were obtained from United States Department of Agriculture, Soil Conservation Service (SCS) Soil Survey Reports, as summarized in the State Soil Geographic Database (STATSGO) and contained in the Geocheck Report completed for the project by Environmental Data Resources (EDR 2015). Additional detail regarding the mapped soil units was obtained from the SCS Soil Survey Geographic Database (SSUGRO), accessed using the University of California (UC) Davis California Soil Resource Lab web page.

- Seismicity and faulting information was obtained from CGS and USGS reports and maps, the CGS geologic hazard and earthquake hazard web pages, maps, reports, and scientific papers prepared by others, and the geotechnical report prepared for the existing power line alignment.

- Liquefaction information was obtained from the CGS geologic hazard web page and general plan documents for Butte, Yuba, and Sutter Counties.

- Subsidence information was obtained from reports by the California Department of Water Resources (DWR) and Jet Propulsion Laboratory (JPL), California Institute of Technology, and the DWR Groundwater Information Center Interactive Mapping Application web page.

- Expansive soils information was obtained from general plan documents for Butte, Yuba, and Sutter Counties.

- Landslide information was obtained from the CGS geohazard web page, general plan documents for Butte, Yuba, and Sutter Counties, and the geotechnical report prepared for the Palermo–East Nicolaus 115 kV Transmission Line Project alignment. USGS topographic maps were also reviewed to assess slope gradients in the project area.

## 3.6.3 ENVIRONMENTAL SETTING

### 3.6.3.1 Regional Setting

The project area lies within Butte, Yuba, and Sutter Counties. Land use near the project area is primarily agricultural and open range land, with intermittent rural and urban residential development, and some commercial and industrial development. Agricultural uses include rice fields, orchards, field crops, and pastures.

Topographically, the project area lies near the eastern margin of the Sacramento Valley, which represents the northern third of California's Great Valley Geomorphic Province (Norris and Webb 1990). The Sacramento Valley is bounded on the northeast by a volcanic plateau of the Cascade Range, on the east by the Sierra Nevada, and on the west by the northern Coast Ranges. The topography along the project area is mainly flat, with some gently rolling terrain near the base of the Sierra Nevada foothills in Butte and Yuba Counties. Slope gradients are generally less than 2 percent along most of the project area, but a few areas with steeper slope gradients

exist in rolling topography along the Palermo Sub Line Segment near Palermo Substation (approximately 5 to 15 percent), and at embankments near the Yuba and Bear Rivers (up to approximately 5 percent) (USGS 7.5 Minute Quadrangle Topographic Maps accessed using USFWS 2015). The project area ranges in elevation from a high of approximately 400 feet above mean sea level at the northern end near Oroville, to a low of approximately 18 feet above mean sea level on one of the western spurs, near Olivehurst.

The Sacramento Valley encompasses the southern portion of the Sacramento River watershed, which drains southward to the Sacramento-San Joaquin Delta and eventually discharges to San Francisco Bay. Drainage from the project area discharges to the Feather, Yuba, or Bear Rivers, by overland flow, tributary swales, or perennial streams. The Feather River flows in a generally southward direction between the project area and the Sutter Buttes. The Yuba and Bear Rivers flow westward from the foothills, across the central and southern portions of the project area, respectively, and discharge to the Feather River. The Feather River merges with the Sacramento River approximately 10 miles south of the project area.

Geologically, the Great Valley is a large, elongated, north-northwest-trending, asymmetric structural trough that has been filled with a thick sequence of sediments ranging in age from Jurassic to Holocene. In the Sacramento Valley, up to approximately 15,000 feet of sediments accumulated over time. These sediments are underlain by a long, stable eastern shelf composed of granitic and metamorphic rocks of the Sierran basement complex, and a short western flank underlain by the Jurassic and Cretaceous deep sea and sea floor crust deposits of the Coast Range Ophiolite and Franciscan Complex (Hackel 1966; Harwood and Helley 1987). Marine deposition in the Sacramento Valley continued through the Miocene and early Pliocene (Norris and Webb 1990). The alluvial and lacustrine sediments deposited after this time are interbedded in some locations with volcanic rocks deposited during volcanic periods in the Sierra Nevada. These deposits consist of complexly interbedded sands, silts, and clays, and are the sequence within which the regional freshwater aquifers are located (Norris and Webb 1990).

#### 3.6.3.2 Stratigraphic Units

Regionally, the project area is underlain by up to approximately 1,500 feet of Quaternary and Tertiary age basin fill sediments consisting of alluvial deposits, sedimentary rocks, and minor volcanic rocks. The geologic units most important to this project are shallow Quaternary and Tertiary deposits consisting of non-marine sedimentary formations from Pliocene through Holocene age, consisting of alluvial, lacustrine, and terrace deposits (CGS 2010). These units are typically unconsolidated and semi-consolidated, and from youngest to oldest are:

- **Quaternary Alluvium.** Quaternary Alluvium is Holocene age, and comprises stream channel deposits and tailings. The tailings deposits were derived from dredge gold and gravel mining operations, and consist of well-sorted, unconsolidated silt, sand, gravel, and cobble, with lesser amounts of clay (Kleinfelder 2008). The thickness of this unit varies up to several tens of feet in the project area (Helley and Harwood 1985).

- **Basin Deposits.** Basin Deposits are Holocene in age and are composed of fine-grained silt and clay derived from the same sources as the younger alluvium. These deposits vary in

thickness from approximately 3 to 6 feet along the perimeter of the valley to almost 200 feet in its center (Helley and Harwood 1985).

- **Modesto Formation.** The Modesto Formation consists of Upper Pleistocene-age alluvium deposited by existing drainages in the region, including alluvial terraces, alluvial fans, and abandoned channel ridges. In the project area, it consists of gravelly sand, silt, and clay. The maximum thickness of this formation is approximately 200 feet, with a prominent clay layer occurring near the top (Helley and Harwood 1985).

- **Riverbank Formation.** The Riverbank Formation underlies the Modesto Formation and is of Pleistocene age. It consists of weathered, reddish gravel, sand, and silt that were deposited as alluvial terraces and fans. The maximum thickness of this formation is approximately 200 feet (Helley and Harwood 1985).

- **Laguna Formation.** The Laguna Formation is of Pliocene age and stratigraphically underlies the Quaternary deposits described above. The Laguna Formation consists of interbedded alluvial gravel, sand, and silt deposited by the ancestral Feather, Yuba, and Bear Rivers. This formation ranges in thickness from approximately 200 feet near Oroville to 60 feet near Sacramento (Helley and Harwood 1985).

#### 3.6.3.3 Soils

The surface soils in the project area are primarily loams, well drained to moderately well drained, with varied infiltration rates. Table 3.6-2 identifies the soil types and characteristics encountered along the project area.

Most of the surface soils in the project area may be characterized as loams. Loams are a generally fertile soil of clay and sand that contains humus (i.e., organic material).

The infiltration rates of the soils in the project area are predominantly very slow to moderate. Soils with a high infiltration rate are deep, well drained to excessively well drained, sands and gravels. Soils with a moderate infiltration rate are deep to moderately deep, moderately well drained and well drained, with moderately coarse textures. Soils with slow infiltration rates may have layers impeding downward movement of water or soil horizons with fine textures. Soils with very slow infiltration rates may be clayey, have a high water table, or include a relatively impervious layer (EDR 2015).

The soil drainage class of soils in the project area ranges from somewhat poorly drained to somewhat excessively drained, but is primarily moderately well drained. Soil drainage class indicates soil wetness or degree of saturation in the presence of applied surface water. Poorly drained soil conditions can occur when the amount of water added to the soils exceeds that removed by drainage, due to an impervious material in the subsurface or a high groundwater table. Soil drainage directly affects soil saturation, which can affect runoff and soil erosion. Soils near the Bear and Yuba Rivers generally tend to be better drained (UC Davis 2015).

**Table 3.6-2: Summary Soil Data**

| Soil Name[1] | Soil Surface Texture[1] | Infiltration Rate[1] | Soil Drainage Class[1] | Wind Erodibility Group/Index[2] | Soil Suitability Ratings for Unpaved Local Roads and Streets[2] |
|---|---|---|---|---|---|
| Columbia | Fine sandy loam | Slow | Somewhat poorly drained | 3/86 | Somewhat limited |
| Cometa | Loam | Very slow | Well drained | 6/48 | Very limited |
| Conejo | Loam | Moderate | Well drained | 6/48 | Somewhat limited |
| Holillipah | Loamy sand | High | Somewhat excessively drained | 2/134 | Somewhat limited |
| Hollenbeck | Silty clay loam | Very slow | Moderately well drained | 4/86 | Very limited |
| Kimball | Loam | Very slow | Well drained | 6/48 | Very limited |
| Marcum | Clay loam | Slow | Moderately well drained | 6/48 | Very limited |
| Marysville | Loam | Moderate | Well drained | 6/48 | Very limited |
| Nueva | Loam | Moderate | Somewhat poorly drained | 6/48 | Somewhat limited |
| Oakdale | Sandy loam | Moderate | Well drained | 3/86 | Somewhat limited |
| Redding | Gravelly loam | Very slow | Moderately well drained conductivity, wet state high in the profile | 6/48 | Very limited |
| Shanghai | Silt loam | Slow | Somewhat poorly drained | 6/48 | Very limited |
| San Joaquin | Loam | Slow and very slow | Well and moderately well drained | 6/48 | Very limited |
| Tujunga | Sand | High | Somewhat excessively drained | 1/220 | Somewhat limited |

Notes:
[1] Soil name, soil surface texture, infiltration rate, and soil drainage class from taken from EDR (2015).
[2] Wind erodibility groups, wind erodibility index data, and Soil Suitability Ratings for Unpaved Local Roads and Streets taken from the SSUGRO database, accessed using the University of California Davis California Soil Resource Lab web page (UC Davis 2015).

The wind erodibility group (WEG) value of a soil may be considered a general indicator of a soil's tendency toward erodibility when disturbed and unvegetated. WEG values range from 1 to 8, corresponding to characteristics shown in Table 3.6-3.

In general, soils with a lower WEG may be considered more erodible. The WEG of the soils in the project area ranges from 1 to 6, but most of the soils have a WEG of 6, and only two soils have a WEG of 1 or 2. The soils located near the Yuba and Bear Rivers generally have a lower WEG.

The wind erodibility index (WEI) is related to the WEG and may also be considered a general indicator of a soil's tendency toward erodibility when disturbed and unvegetated. The units for WEI are in tons per acre per year (NRCS 2015), and a higher WEI indicates a greater tendency toward erodibility. The WEI of the soils in the project area ranges from 48 to 220, but most of the soils have a WEG of 48 to 86, and only two of the soils fall above this range. The soils near the Yuba and Bear Rivers have the highest WEI.

**Table 3.6-3: Wind Erodibility Groups**

| WEG Value | Characteristic |
|---|---|
| 1 | sandy soil |
| 2 | loamy sand |
| 3 | fine sandy loam |
| 4 | silty loam with low amounts of clay |
| 5 | sandy clay loam |
| 6 | silty clay loam and silt loam with high iron oxide content |
| 7 | silt and clay and silty clay loam with high iron oxide |
| 8 | rock and rock fragments |

The "Soil Suitability Rating for Unpaved Local Roads[1]" is an engineering ranking intended to provide preliminary information regarding a soil's performance as an unimproved road. It may be considered an indicator of the level of preparation and maintenance needed for unimproved access roads constructed for the project, particularly during the rainy season. The soils underlying the project area are rated as somewhat limited or very limited, indicating that some maintenance may be expected, especially for heavily travelled roads and during the rainy season.

Information regarding the expansion potential of shallow soils underlying the project area was obtained from a review of county planning documents and information from the UC Davis California Soil Resource Lab web page (UC Davis 2015). Expansive soils are those that contain significant amounts of plastic clays that expand when wet and can cause damage to foundations and surface improvements. According to the soil properties mapping application available on the UC Davis California Soil Resource Lab web page, the average clay content of shallow soils in the project area generally ranges from 20 to 45 percent, with lower concentrations near the Yuba and Bear Rivers. Review of county planning documents indicates that the project area is underlain by soils with an expansion potential ranging from low to high, with soils of moderate to high expansion potential dominating. In Butte County, soils of high expansion potential occur in the low-lying areas near the Sacramento and Feather Rivers, as well as around the population centers of Chico, Oroville, Biggs, Nelson, and Richvale, and most of the project area (Butte County 2010b). In Yuba County, areas of expansive soils are more common in the western portion of the county, where the project area is located (Yuba County 2008). In Sutter County, expansive soils are most likely to occur in the southernmost portion of the project area (Sutter County 2008).

#### 3.6.3.4 Seismicity and Fault Rupture Hazard

##### *Faulting*

A map showing the location and activity of faults in the region that includes the project area was compiled using data available from CGS (Figure 3.6-1). A fault is considered active if it has

[1] Soil Suitability Ratings for Unpaved Local Roads and Streets taken from the SSUGRO database, accessed using the University of California Davis California Soil Resource Lab web page (UC Davis 2015).

generated earthquakes accompanied by surface rupture during historic time (approximately the last 150 years) or has shown evidence of fault displacement during the Holocene period (approximately the last 11,000 years) (CGS 2010). A fault is considered potentially active if there is evidence of fault displacement during the Quaternary period (approximately the last 1.6 million years). A fault is considered inactive if the most recent evidence of fault displacement predates the Quaternary period, i.e., is older than 1.6 million years. The Alquist-Priolo Act requires the establishment of "earthquake fault zones" around known active faults in California, and requires additional study to evaluate the fault rupture hazard to projects proposed within these zones.

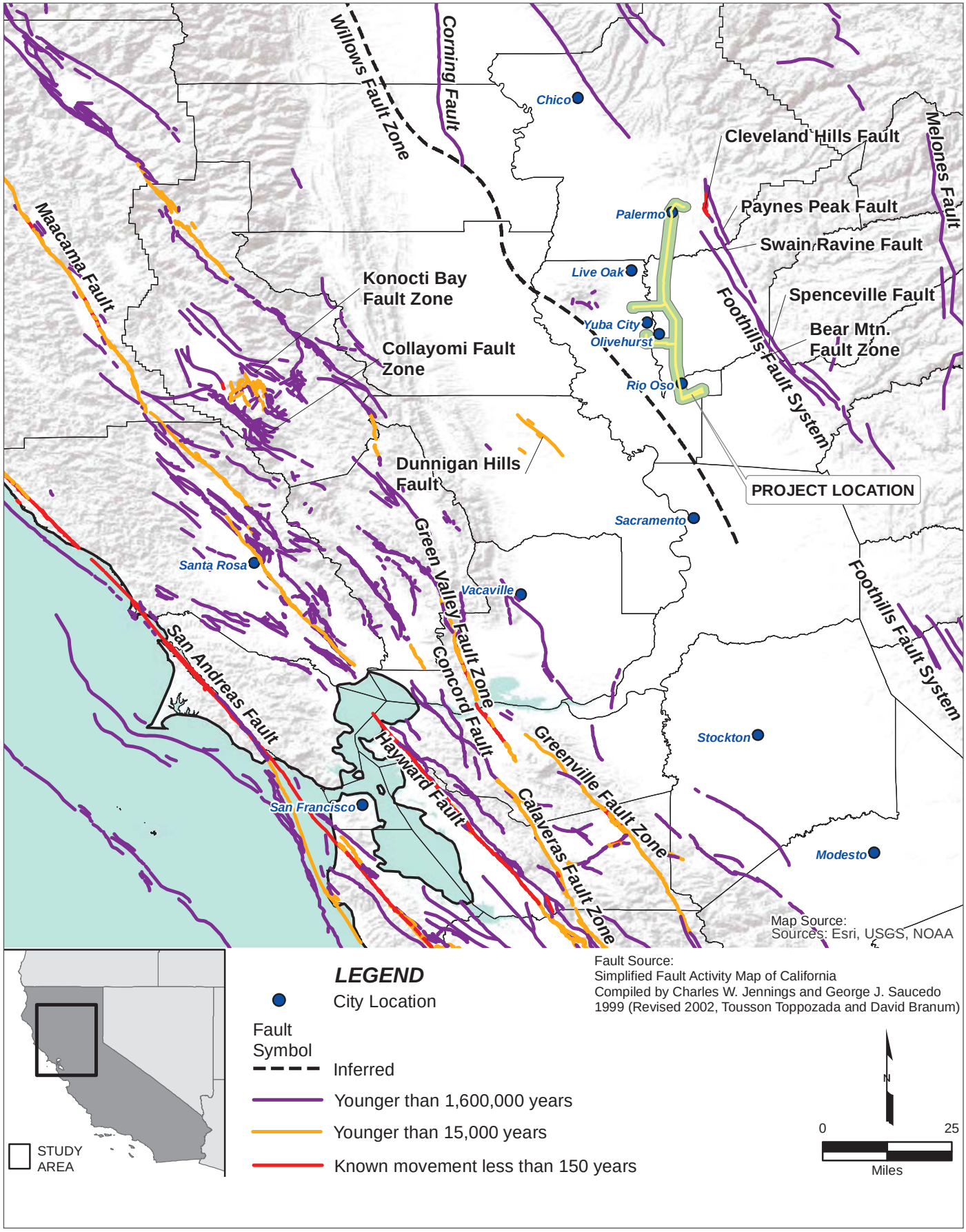
No known active, potentially active, or inactive faults are located within 1 mile of the project area (see Figure 3.6-1), and the project area is not located within any Alquist-Priolo earthquake fault zones. However, a number of active and potentially active faults are located in the region surrounding the project area, and have the potential to produce strong ground shaking. Several of these faults are located within 20 miles of the project area. In addition, the faults associated with the San Andreas fault system in the Coast Ranges west of the project area are some of the most active in the United States, and have the potential to cause strong ground shaking in the project area. The following faults could cause strong ground shaking in the project area during the life of the project:

- **Cleveland Hill Fault.** The active Cleveland Hill fault is as close as 2.5 miles east of the project area. The Cleveland Hill fault is a splay of the Foothills fault system (described below) that has displayed historic activity, including surface displacement along approximately 2.2 miles of the fault during an earthquake with a Richter magnitude of 5.7, with the epicenter just south of Oroville in 1975. The maximum credible earthquake on this fault is estimated to be 6.5 Richter magnitude (Yuba County 1994).

- **Dunnigan Hills Fault.** The potentially active Dunnigan Hills fault is located approximately 19 miles to the west. The maximum credible earthquake on this fault is estimated to be 6.5 Richter magnitude (Yuba County 1994).

- **Foothills Fault System.** The Foothills fault system is a major north-northwest trending group of relatively short, discontinuous faults extending along the western Sierra Nevada foothills from Oroville in the north to near Fresno in the south. Faults in the Foothills fault system near the project area can be considered a northerly extension of the Bear Mountain fault zone and includes several faults that are considered to be of Quaternary age. This includes the northern portion of the Swain Ravine fault, just south of the Cleveland Hill fault, the Paynes Peak fault, and the Spenceville fault, which come to within 5 to 12 miles of the project area (CDMG 1983). The northern Foothills fault system is considered a system of low-level seismicity, and has very little history of seismic activity. However, seismic monitoring in this area is not extensive, and there is little information available on the history of activity for this fault zone. The maximum credible earthquake on the Foothills fault system is 6.5 Richter magnitude (Yuba County 1994).

- **San Andreas Fault System.** The San Andreas fault system, with numerous active branches, passes approximately 100 miles west of the project site and is the most active earthquake-




00441.15 Palermo_South (12-2015) SS

**Figure 3.6-1**
**Regional Fault Lines**
South of Palermo 115 kV Power Line Reinforcement Project

producing fault system in California. The San Andreas Fault is an active strike-slip fault that extends north-northwest from the Gulf of California in Mexico to the Mendocino coast in northern California, and accommodates the majority of movement between the Pacific and North American plates. Faults associated with this system include the Hayward fault, Calaveras fault, Concord fault, Greenville fault, and Maacama fault. This fault system is historically active and has generated earthquakes ranging from Richter magnitude 6 to 8. Major earthquakes on this fault system have the potential to cause strong seismic shaking at the project site (Bryant and Cluett 1998, 2000, and 2002).

- **Willows Fault Zone.** The Willows fault zone is a concealed, pre-Quaternary fault zone, believed to be part of the Coast Range-Sierran Block Boundary Zone (CRSB) (Harwood and Helley 1987). Thus, although the fault is considered pre-Quaternary, it has been described as potentially capable of generating infrequent moderate-magnitude earthquakes along its northern extent, north of the Sutter Buttes (Kleinfelder 2008). The majority of this fault is not near the project area; however, the southern portion of the project area comes within approximately 4 miles of the Willows fault zone at its closest point. From this point, the fault veers northwesterly away from the project area, making it approximately 35 miles west of the northern portion of the project area.

- **Other CRSB Faults.** Other faults of the CRSB zone are located within 25 miles west of the project area and are primarily of Quaternary age. Displacement on the Konocti fault zone is estimated to range from the Holocene to Latest Pleistocene in age. The maximum credible earthquake on this fault is 6.25 Richter magnitude. The Collayomi fault zone is estimated to be of Late Quaternary age, with a maximum credible earthquake of 6.5 Richter magnitude (Yuba County 1994).

#### *Strong Ground Motion*

The project area is subject to ground shaking from earthquakes generated on the faults discussed above. Shaking from an earthquake can result in structural damage and can trigger other geologic hazards such as liquefaction. Ground shaking is controlled by the earthquake magnitude, duration, distance from the source, and local ground conditions, which may amplify or dampen seismic waves as they travel from the underlying bedrock to the ground surface.

The project area is in a region of California associated with generally low seismic shaking potential, as indicated on the CGS map *Earthquake Shaking Potential for California* (Branum et al. 2008; CGS 2008). Based on probabilistic seismic hazard mapping that depicts the peak horizontal ground acceleration values exceeded at a 10 percent probability in 50 years, the probabilistic peak horizontal ground acceleration values in the project area range from 0.15 to 0.2 g, where one g equals the force of gravity (CGS 2008). Based on a 2 percent probability of exceedance in 50 years, the acceleration values range from 0.27 to 0.32 g. While such ground shaking is potentially damaging, it is much lower than ground shaking anticipated in the more seismically active areas near the San Andreas fault system.

### 3.6.3.5 Landslides

A landslide is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. There is a low probability for landslides in the project area because of the

relatively flat topography and the lack of geomorphic features indicative of past landsliding, such as scarps or hummocky topography (Kleinfelder 2008). The project site is not located within a state-designated landslide hazard area, as indicated by the CGS Landslide Map Index web page (CGS 2015a) and Map Sheet 58 of *Susceptibility to Deep-Seated Landslides in California* (Wills et al. 2011). Planning documents for Butte County indicate potential for landsliding is low to moderate for the Palermo Sub Line Segment and low to none for the South of Palermo Line in Butte County (Butte County 2010b). Planning documents for Yuba County indicate landsliding is expected to occur primarily in the foothills and mountains, where the topographic relief and slope are greater than those in the project area (Yuba County 2008). Planning documents for Sutter County indicate that, aside from the Sutter Buttes, Sutter County is a landslide-free zone based on its flat topography (Sutter County 2008). The Sutter Buttes are located 4 miles west of the project area.

The power line alignment crosses several major rivers and drainages with embankments. Although the above-referenced sources do not report existing landslide hazards associated with these embankments, the embankments could become unstable if they are undercut by erosion. The stability of embankments and creek banks that could affect the proposed pole foundations will be assessed individually, as needed.

#### 3.6.3.6 Subsidence

Land subsidence is the downward settlement of a large area of land, and has the potential to result in surface infrastructure damage. Historical subsidence in California has resulted from several processes, including oil and gas production, groundwater withdrawal, hydrocompaction, and peat oxidation. Parts of the western Sacramento Valley have been affected by subsidence resulting from extensive groundwater withdrawal or natural gas production (CPUC 2010). Subsidence associated with water or gas withdrawal occurs when compressible subsurface deposits are depressurized as a result of removing water or gas and can no longer support the weight of the overlying material. In the case of groundwater withdrawal, subsidence occurs primarily when groundwater withdrawal from confined aquifers results in the depressurization and dewatering of compressible clay layers. Subsidence generally occurs slowly, and can continue for a period of several years after pumping has stopped, as water continues to move out of compressible clay layers.

Subsidence due to groundwater and gas extraction is considered a potential hazard in Butte, Yuba, and possibly Sutter Counties. However, the project area is not located near any gas fields (DOGGR 1982); therefore, subsidence due to gas withdrawal is not a hazard in this area. Interferometric Synthetic Aperture Radar data analyzed by Jet Propulsion Laboratory, California Institute of Technology (JPL 2015) reveal that little or no recent subsidence has occurred in the project area. DWR indicates the project area has a low to moderate potential for future land subsidence (DWR 2014).

#### 3.6.3.7 Erosion

Erosion is the process by which rocks, soil, and other land materials are abraded or worn away from Earth's surface over time. A soil's susceptibility to erosion varies, and is a function of its texture, structure, topography, amount of vegetative cover, climate, drainage, and human activity. Erosion from water mainly occurs in loose soils on moderate-to-steep slopes,

particularly during high-intensity storm events and in areas that are sparsely vegetated or where the soil structure has been disturbed. In general, the Sacramento Valley is relatively level and is considered to have a low erosion potential relative to areas with steeper slopes, such as the foothills to the east (Yuba County 1994). The locations most susceptible to erosion are near streambanks, where sandy soils and steeper slopes can contribute to increased erosion potential (UC Davis 2015; Butte County 2010a).

#### 3.6.3.8 Liquefaction

Liquefaction is a phenomenon in which saturated, cohesionless soils, such as sand and silt, temporarily lose their strength and liquefy when subjected to intense and prolonged ground shaking. The sediments most susceptible to liquefaction include fine, uniformly graded, sandy and silty soils that are cohesionless and poorly consolidated. In order to liquefy during earthquake shaking, potentially liquefiable soils must be saturated; i.e., they must occur below the water table. In general, liquefaction hazards are most pronounced within the upper 50 feet of the ground surface. The potential for liquefaction increases with shallower groundwater.

Specific liquefaction hazard areas have not been identified by the CGS in Butte, Yuba, or Sutter Counties (CGS 2015b); however, areas of potentially liquefiable soil can be found beneath the valley floor, especially near streams, including tributaries that are no longer active (Butte County 2010b). Limited areas of liquefiable soil can also be found in the foothill and mountain regions, but are generally limited to drainages where unconsolidated sandy and silty sediments have accumulated.

Most of the power line alignment traverses areas of low-to-moderate liquefaction potential (CPUC 2010). As noted in Section 3.6.3.2, much of the project area is underlain by somewhat consolidated Quaternary and Tertiary terrace deposits belonging to the Modesto, Riverbank, and Laguna Formations, which would generally be expected to have a low liquefaction potential. Quaternary and Holocene age alluvium and basin deposits underlying the remainder of the project area include unconsolidated sand and silt that may be liquefiable, especially near modern streams. Data from the DWR Groundwater Information Center web page (DWR 2015) indicate that the depth to groundwater in the project area generally ranges from approximately 20 to 50 feet below ground surface, with some areas as shallow as 10 feet below ground surface, and some as deep as 90 feet below ground surface.

### 3.6.4 Applicant-Proposed Measures and Potential Impacts

The following sections describe significance criteria for impacts related to geology and soils derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational geologic impacts.

#### 3.6.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines,

the potential significance of project impacts related to geology and soils were evaluated for each of the criteria listed in Table 3.6-1, as discussed in Section 3.6.4.3.

### 3.6.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

***APM GEO-1: Minimize Construction in Soft or Loose Soils***

Where soft or loose soils are encountered during project construction, several measures are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these measures may be implemented to eliminate impacts from soft or loose soils:

- Locating construction facilities and operations away from areas of soft and loose soil.
- Over-excavating soft or loose soils and replacing them with engineered backfill materials.
- Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.
- Installing material, such as aggregate rock, steel plates, or timber mats, over access roads.
- Treating soft or loose soils in place with binding or cementing.

APMs related to erosion control are described in Section 3.9, Hydrology and Water Quality. APM HYDRO-1 uses best management practices (BMPs) to prevent erosion from construction-related activities by implementing a Storm Water Pollution Prevention Plan (SWPPP).

### 3.6.4.3 Potential Impacts

Potential project impacts related to geology and soils were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project involves reconductoring the existing 115 kV power line, and replacing existing lattice steel towers and poles with TSPs, hybrid poles, LSPs, or lattice steel towers. The new structures are estimated to be buried belowground to varying depths, with the deepest foundations extending approximately 35 feet belowground. In order to replace conductors, temporary guard structures will be installed to approximately 7 feet belowground at certain road, rail, and aboveground utility crossings. Temporary snub poles, which typically extend approximately 10 feet belowground, will also be installed. In addition, temporary construction staging, laydown, tensioning, and helicopter landing areas will be established, and temporary overland access routes will be used to access some work locations. Work areas will also be accessed using existing access roads, some of which are unpaved.

During clearing activities, vegetation will be mowed or grubbed, leaving root systems intact wherever possible to encourage resprouting and minimize erosion. As stated in Chapter 2, Project Description, soil stockpiles created from pole foundation excavations will be located away from or downgradient from waterways. Furthermore, other sediment control BMPs will be implemented to manage temporary stockpiles. Excess soil on-site will be feathered around construction areas, and a backhoe will be used to place gravel around TSP foundations after formwork has been removed and to groom the surrounding area, where appropriate. Construction debris, including removed TSPs and wood poles, will be taken on a line truck with a trailer to an area service center for recycling or disposal. After completion of construction, work areas will be restored to their pre-project conditions, in coordination with landowners.

The operation and maintenance (O&M) of the new poles is not anticipated to be different from the existing poles with respect to the impact on geology and soils, and no new O&M impacts are anticipated. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**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. *No Impact***

The project area does not include any Alquist-Priolo fault zones. No known active, potentially active, or inactive faults underlie the project area; therefore, there are no impacts associated with the potential rupture of a known fault.

**ii) Strong seismic ground shaking? *Less than Significant***

The project area is located in a region of California associated with generally low seismic shaking potential (Branum et al. 2008; CGS 2008); however, it may be expected to experience moderate-to-strong ground shaking during its operational life in the event of an earthquake on one of the nearby active or potentially active faults (such as the Cleveland Hill fault) or from a major earthquake centered on the more distant San Andreas fault system.

Generally, overhead power lines can accommodate strong ground shaking. In fact, wind-loading design requirements for overhead lines are generally more stringent than those developed to address strong seismic ground shaking. As part of project design, PG&E will develop and implement appropriate design criteria and measures to address seismic loading and soil conditions. The proposed structure replacements and tower improvements along the South of Palermo 115 kV Power Line Reinforcement Project will be engineered to meet loads generated by wind, ice, broken conductors, and seismic shaking, and will not increase the risk of loss, injury, or death from strong seismic ground shaking. In addition, APM GEO-1 will further reduce the potential for impacts associated with strong seismic ground shaking in the project area. Accordingly, impacts associated with strong seismic ground shaking will be less than significant.

**iii) Seismic-related ground failure, including liquefaction?** ***Less than Significant***

Most of the power line alignment traverses areas of generally low-to-moderate liquefaction potential (CPUC 2010). As noted in Section 3.6.3.2, much of the project area is underlain by somewhat consolidated Quaternary and Tertiary terrace deposits, which would generally be expected to have a low liquefaction potential. Quaternary and Holocene-age alluvium and basin deposits underlying the remainder of the project area could include unconsolidated sand and silt that may be liquefiable, especially near modern streams. Data from the DWR Groundwater Information Center web page (DWR 2015) indicate that the depth to groundwater in the project area generally ranges from approximately 20 to 50 feet below ground surface, with some areas as shallow as 10 feet below ground surface, and some as deep as 90 feet below ground surface. Hazards associated with soil liquefaction and seismic-related ground failure include temporary loss of soil bearing capacity, lateral spreading, differential compaction, and slope instability. To comply with GO 95, PG&E will perform any necessary design studies and develop design criteria and measures to address any geologic hazards associated with liquefaction and seismic-related ground failure. Accordingly, impacts associated with liquefaction and seismic-related ground failure will be less than significant.

**iv) Landslides?** ***Less than Significant***

There is a low probability for landslides in the project area because of the relatively flat topography and the lack of geomorphic features indicative of landsliding, such as scarps or hummocky topography (Kleinfelder 2008). The project site is not located within a state-designated landslide hazard area, as indicated by the CGS Landslide Map Index web page (CGS 2015a) and Map Sheet 58 of *Susceptibility to Deep-Seated Landslides in California* (Wills et al. 2011). The project area is predominantly level with a slope gradient of less than 2 percent; however, limited areas along the Palermo Sub Line Segment near Palermo Substation have rolling terrain with somewhat steeper gradients of approximately 5 to 15 percent. Butte County has mapped these areas as having a landslide potential of "low to moderate." Somewhat steeper slopes (up to approximately 5 percent slope) also exist near the Yuba and Bear Rivers, but Butte, Yuba, and Sutter Counties have not associated these areas with elevated landslide hazard. Areas near stream embankments that have steeper slopes could become unstable if they are undercut by erosion. With APM GEO-1, PG&E will develop and implement appropriate design criteria and measures to address potentially unstable soil conditions as needed. Accordingly, impacts associated with landslides will be less than significant.

**b) Would the project result in substantial soil erosion or the loss of topsoil?** ***Less than Significant***

In general, the Sacramento Valley, where the project area is located, is relatively level and is considered to have a low erosion potential relative to areas with steeper slopes, such as the foothills to the east (Yuba County 1994). Surface soils in most of the project area have WEG and WEI ratings that reflect moderate-to-low erosion potential (UC Davis 2015); however, sandy, more erodible soils are located near the intersection of the project area with the Yuba and Bear Rivers. These locations are potentially more susceptible to erosion due to the presence of sandy soils and steeper slopes, and erosion potential can increase where slopes are disturbed or denuded by wildfires (Butte County 2010a).

Soil disturbance during construction will include drilling of structure foundations, management of soil spoils piles, establishment of work areas for removal and construction of structures, and construction of temporary pull sites, laydown areas, helicopter landing pads, and temporary overland access routes. Work areas will also be accessed using existing roads, some of which are unpaved. These activities have the potential to increase erosion, especially near stream crossings. During clearing activities, vegetation will be mowed or grubbed, if feasible, to leave root systems intact to encourage resprouting and minimize erosion.

Under APM HYDRO-1, PG&E will prepare and implement a SWPPP that will include BMPs to reduce erosion, monitoring to verify plan implementation, and stabilization and restoration of work areas in coordination with landowners and consistent with APMs listed in Section 3.4, Biological Resources. Because of the limited extent of earthmoving activities and the relatively flat terrain, and with implementation of APM HYDRO-1, substantial erosion or loss of topsoil is not expected to occur. Accordingly, the impact will 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***

There is a low probability for the project to cause landslides or other ground instability because of the relatively flat topography throughout most of the project area and the lack of geomorphic features indicative of landsliding, such as scarps or hummocky topography (Kleinfelder 2008). The project site is not located within a state-designated landslide hazard area, as indicated by the CGS Landslide Map Index web page (CGS 2015a) and Map Sheet 58 of *Susceptibility to Deep-Seated Landslides in California* (Wills et al. 2011). Limited portions of the project area near stream embankments have steeper slopes that could become unstable if they are undercut by erosion, and lateral spreading could occur near open embankments in areas of shallow groundwater and liquefiable soil. However, the project would not exacerbate these effects. With the implementation of APM GEO-1, PG&E will develop and implement appropriate design criteria and measures to address potentially unstable soil conditions as needed. Accordingly, impacts associated with landslides or lateral spreading will be less than significant.

Generally, overhead power lines can accommodate regional subsidence. In addition, subsidence in the Sacramento Valley has been generally limited to areas near the valley center, where gas fields and confined aquifers are located, and not near the edges of the basin, where the project area is located. Furthermore, project construction is not expected to result in a potential lowering of groundwater levels that could contribute to subsidence. Therefore, the project will not result in a significant potential for land subsidence. Accordingly, the impact of the project on land subsidence resulting from groundwater extraction is less than significant.

Most of the project area traverses areas of generally low-to-moderate liquefaction potential (CPUC 2010). However, the project would not exacerbate these effects, and thus would have no impact on potential on-site or off-site liquefaction or ground collapse. As stated previously PG&E will perform any necessary design studies where warranted and develop design criteria and measures to address any geologic hazards associated with liquefaction and seismic-related ground failure.

**d) Would the project be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007 or 2010), creating substantial risks to life or property? *Less than Significant***

Review of county planning documents indicates that the project area is underlain by surface soils with an expansion potential ranging from low to high, with soils of moderate-to-high expansion potential dominating. Poles and towers will be installed to depths of 7 to 35 feet, which will generally prevent shifting as a result of soil shrink-swell cycles. In addition, standard construction practices will be used to mitigate hazardous soil conditions, if encountered (e.g., providing positive drainage gradients away from foundations, compaction of plastic soils at moisture contents above optimum, and placement of engineered fill, as needed). With the implementation of these standard construction practices and APM GEO-1, impacts will 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 does not include a waste-water disposal system; therefore, no impact will occur.

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# 3.7 GREENHOUSE GAS EMISSIONS

## 3.7.1 INTRODUCTION

This section discusses potential greenhouse gas (GHG) emissions associated with the project construction, operation, and maintenance, and concludes that impacts will be less than significant. GHG emissions were calculated and reported in $CO_2$ equivalents ($CO_2e$) for carbon dioxide ($CO_2$), nitrous oxide ($N_2O$) and methane ($CH_4$) emissions from on-road, off-road, and helicopter emissions. The implementation of the APMs described in Section 3.7.4.2, as well as those described in Section 3.3, Air Quality, will further reduce less-than-significant impacts.

The project's potential effects on GHG emissions were evaluated using the criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.7-1 and discussed in more detail in Section 3.7.4.

**Table 3.7-1: CEQA Checklist for Greenhouse Gas Emissions**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

## 3.7.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.7.2.1 Regulatory Background

#### *Federal*

The Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 05-1120) found that US EPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the federal Clean Air Act. On April 17, 2009, US EPA found that $CO_2$, $CH_4$, $N_2O$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride ($SF_6$) may contribute to air pollution and may endanger public health and welfare. US EPA has established reporting regulations that require specific facilities and industries to report their GHG emissions annually.

*40 CFR Part 98, Mandatory Reporting of Greenhouse Gases Rule*

This rule requires reporting GHG emissions for facilities that emit more than 25,000 metric tons of $CO_2e$ emissions per year (US EPA 2013).

### State

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), which provides the framework for regulating GHG emissions in California. This law requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons $CO_2e$ (CARB 2007).

State Executive Order S-3-05 established GHG reductions targets for the state of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050. The California Environmental Protection Agency secretary is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan includes a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation-fee regulation to fund the program (CARB 2008).

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions came into effect in January 2009. However, this project is not affected by these regulations and does not require mandatory reporting.

CARB published a Preliminary Draft Staff Proposal titled *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* in October 2008 that included a proposal that non-transportation-related sources with GHG emissions less than 7,000 metric tons of $CO_2e$ should be presumed to have a less-than-significant impact (CARB 2008b).

On December 30, 2009, the California Resources Agency adopted amendments to the CEQA Guidelines to include analysis of GHG emissions in CEQA documents, deferring significance thresholds to the lead agency. The amendments became effective on March 18, 2010.

#### Executive Order B-30-15

Executive Order B-30-15 established a medium-term goal of reducing GHG emissions by 40 percent below 1990 levels by 2030 and requires CARB to update its current AB 32 Scoping Plan to identify the measures to meet the 2030 target.

### Regional

The California Air Pollution Control Officers Association (CAPCOA) has established the Greenhouse Gas Reduction Exchange (GHG Rx) for greenhouse gas emission credits in California. Credits listed on the GHG Rx come from voluntary emission reduction projects and can be purchased to offset GHG emissions.

Local air districts act under state law and their discretionary requirements apply to PG&E utility projects.

### *Butte County Air Quality Management District*

The Butte County Air Quality Management District (BCAQMD) regulates local air quality and GHG sources in the Butte County portion of the project area. BCAQMD has not yet developed GHG thresholds of significance as part of its *CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts* (CEQA Air Quality Handbook) (BCAQMD 2014). BCAQMD's CEQA Air Quality Handbook recommends that projects that are consistent with a lead agency's GHG reduction plan do not require further quantification, but that projects in jurisdictions without a reduction plan should quantify their greenhouse gas emissions and may choose to evaluate results relative to state goals (for example, those derived from AB 32 and the AB 32 Scoping Plan) or thresholds of a neighboring jurisdiction (with a similar air quality setting) with a reduction plan or some other adopted threshold.

BCAQMD's CEQA Air Quality Handbook also recommends that CEQA analyses addressing the potential impacts of project-generated GHG emissions include:

- An inventory of the project's construction and operational sources of GHGs and the time periods when emissions are expected, distinguishing District-permitted stationary sources from mobile and other non-permitted sources.
- The current state of the science with respect to GHGs and climate change and the existing regulatory environment.
- The non-project GHG setting representing the baseline for determining the project's impact.
- Identification of the thresholds of significance applicable to the proposed project. The lead agency may consider thresholds of significance adopted or recommended by other lead agencies, or adopt its own thresholds, provided the decision is supported by substantial evidence. Alternatively, the lead agency may consider thresholds based on the goals of AB 32.

### *Yuba and Sutter Counties – Feather River Air Quality Management District*

The Feather River Air Quality Management District (FRAQMD) has jurisdiction over local air quality in Sutter and Yuba Counties. FRAQMD published its CEQA guidance, *Indirect Source Review Guidelines: A Technical Guide to Assess the Air Quality Impact of Land Use Projects under the California Environmental Quality Act*, in 2010. These guidelines were intended to provide a means to identify development projects that may have a significant adverse effect on air quality, and they include some guidance on how to address greenhouse gas emissions. The FRAQMD has no established thresholds of significance for GHG emissions, but recommends using a white paper entitled *CEQA and Climate Change*, prepared by the CAPCOA, for guidance related to climate change.

#### *Butte County Climate Action Plan*

Although the CEQA guidance from the County does not specify GHG thresholds, Butte County adopted a Climate Action Plan (CAP) on February 25, 2014. The CAP is an implementation mechanism of the County's General Plan, adopted in 2010 and amended in 2012, providing goals, policies, and programs to reduce GHG emissions, address climate change adaptation, and improve quality of life in the county. The CAP also supports statewide GHG emissions reduction goals identified in AB 32 and SB 375. In addition, it serves as a qualified GHG reduction plan for tiering purposes under Section 15183.5 of the CEQA Guidelines, simplifying development review for new projects that are consistent with the CAP. The CAP aims to reduce the long-term emissions most commonly associated with land use development or similar projects with a long-term operational component, and does not address temporary construction-related GHG emissions.

#### *Sutter County Climate Action Plan*

Sutter County developed a draft CAP (2010), which was adopted in 2011 alongside the 2030 General Plan. The CAP was developed to create an emissions baseline from which to benchmark GHG reductions, to provide a plan that is consistent with and complementary to state GHG reduction efforts, to guide the development, enhancement, and implementation of actions that aggressively reduce GHG emissions, and to provide a policy document with specific measures to be incorporated into the planning process for future development projects. In addition, Sutter County's CAP is considered a qualified GHG reduction plan for tiering purposes under Section 15183.5 of the CEQA Guidelines. The CAP does not address temporary construction-related GHG emissions.

### *Local*

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (i.e., city and county) discretionary regulations.

### 3.7.2.2 Methodology

Construction-related emissions were estimated using a combination of emission factors and methodologies. The California Emissions Estimator Model (CalEEMod) was used to estimate off-road heavy-duty construction equipment emissions, CARB's EMFAC2014 model was used to estimate on-road emissions, and specific fuel use factors developed by the Switzerland Federal Office of Civil Aviation (FOCA) were used to evaluate helicopter emissions (FOCA 2013).

It is anticipated that construction activities would occur over three phases between 2018 and 2021. Each phase would have multiple sub-phases, such as installing new poles/towers, modifying towers, demolishing and removing old towers, and installing new conductor. PG&E has provided preliminary phasing information, including the projected construction schedule, equipment, grading and paving quantities, and number of truck trips.

Long-term operational emissions of $CO_2e$ were not evaluated, as existing operations and maintenance O&M activities will not change as a result of the project. In addition, operational emissions associated with $SF_6$ gas-insulated switchgear were not evaluated, as the project will not include any new equipment using $SF_6$. The modifications associated with the project are not

anticipated to change or increase existing O&M activities and operational GHG emissions are not anticipated to change as a result of project operations.

## 3.7.3 ENVIRONMENTAL SETTING

### 3.7.3.1 Regional Setting

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

As defined in Assembly Bill (AB) 32, "greenhouse gas" or "greenhouse gases" include, but are not limited to $CO_2$, $CH_4$, $N_2O$, hydrofluorocarbons, perfluorocarbons, and $SF_6$. California is a substantial contributor to global GHG emissions. It is the second largest contributor in the United States and the 16th largest in the world (CEC 2006).

## 3.7.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for GHG emission impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational air quality impacts.

### 3.7.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. CEQA allows for significance criteria established by the applicable air pollution control district(s) to be used to assess the impact of a project related to GHG emissions, at the discretion of the CEQA lead agency.

To date, neither the BCAQMD nor the FRAQMD has defined a GHG emissions threshold. Some California air districts, such as Monterey Bay Unified, San Luis Obispo County, Ventura County, South Coast, and San Diego County, have adopted, or have recommended for adoption, a significance threshold of 10,000 metric tons $CO_2e$ per year for stationary source projects (MBUAPCD 2013). This threshold was derived from emissions data from the four largest air districts in California and is based on the Executive Order S-3-05 GHG emissions reductions goal of 80 percent below 1990 levels by 2050, which is roughly equivalent to 90 percent below current levels by 2050. This emissions reduction goal goes beyond the AB 32 emissions reduction goal established for 2020. The emissions data suggest that approximately 1 percent of all stationary sources emit more than 10,000 metric tons $CO_2e$ per year and are responsible for 90 percent of GHG emissions. This significance threshold represents a capture rate of 90 percent of all new and modified stationary source-related projects. A 90 percent emissions capture rate

means 90 percent of the total emissions from all new or modified stationary source projects would be subject to analysis in an environmental impact report prepared pursuant to CEQA, including analysis of feasible alternatives and imposition of feasible mitigation measures (South Coast Air Quality Management District [SCAQMD] 2008).

This GHG significance threshold is intended for long-term operational GHG emissions associated with stationary sources; none of the air districts mentioned above have adopted or recommended GHG significance thresholds for construction emissions. Therefore, in recent CEQA documents, the CPUC has elected to use an approach to determining significance of GHG construction emissions based on guidance developed by the SCAQMD. For construction-related GHGs, SCAQMD recommends that total emissions from construction be amortized over 30 years and added to operational emissions, then compared to the operation-based significance threshold of 10,000 metric tons $CO_2e$ per year (SCAQMD 2008).

In accordance with Appendix G of the CEQA Guidelines, the potential significance of the project's GHG emissions were evaluated for each of the criteria listed in Table 3.7-1, as discussed in Section 3.7.4.3.

### 3.7.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

#### *Construction*

***APM GHG-1: Minimize GHG Emissions***

- Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.

- Minimize unnecessary construction vehicle idling time for on-road and off-road vehicles. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.

- Maintain construction equipment in proper working conditions in accordance with PG&E standards.

- Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program.

- Minimize welding and cutting by using compression of mechanical applications where practical and within standards.

- Encourage use of natural gas-powered vehicles for passenger cars and light-duty trucks where feasible and available.

- Encourage recycling construction waste where feasible.

APMs AQ-1 and AQ-2 identify additional measures that will reduce emission of greenhouse gases during construction and are discussed in Section 3.3, Air Quality.

#### 3.7.4.3 Potential Impacts

Potential project impacts related to GHG emissions were evaluated against the CEQA significance criteria and are discussed in further detail in the following paragraphs. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase. Similar to the SCAQMD's recommended approach for construction emissions, this analysis amortizes the construction emissions over a 30-year project lifetime then compares those emissions to the significance threshold of 10,000 metric tons $CO_2e$ per year.

The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, with new support structures and modifications to existing facilities within the existing utility corridor. The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts related to GHG emissions will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than significant***

Construction activities will generate GHG emissions over the project's 36-month construction period (which spans 4 calendar years). Construction-related emissions will result from construction land-based equipment (including off-road construction equipment and machinery, and vehicular traffic generated by commuting workers and material hauling) and from helicopter activity. Following project completion, all construction emissions will cease. The project's total estimated GHG emissions associated with construction activities are shown in Table 3.7-2. The total GHG emissions presented in this table were then amortized over a 30-year period, consistent with SCAQMD methodology and CPUC practice.

Helicopter emission estimates were supplemented to include 5 hours per day of helicopter operations to account for travel to and from the project area for heavy-duty helicopters, and 9 hours per day for light-duty helicopters. To estimate off-site construction-related vehicle emissions that would be associated with project construction, emission factors for on-road trucks and worker vehicles were derived using CARB's EMFAC2011 model with anticipated trip characteristics, such as daily round trips, phase duration, and trip lengths.

**Table 3.7-2: Total GHG Construction Emissions (MT $CO_2e$)**

| Construction Activity | $CO_2e$ (MT) without APMs | $CO_2e$ (MT) with APMs[1] |
|---|---|---|
| Establish temporary overland routes | 95.84 | 91.05 |
| Establish work areas, staging areas, pull sites, and landing zones | 560.16 | 532.15 |
| Stage material and equipment | 207.85 | 197.46 |
| Tubular steel pole foundation/pad concrete work | 191.72 | 182.14 |
| Install new poles/towers | 6,205.70 | 5,895.41 |
| Demolish and remove old towers | 6,205.70 | 5,895.41 |
| Install temporary guard structures | 191.33 | 181.76 |
| Install cage top extensions | 152.90 | 145.26 |
| Install new switches | 7.05 | 6.69 |
| Install new conductor | 5,691.91 | 5,407.32 |
| Install temporary shoefly poles | 171.63 | 163.05 |
| Install tubular steel poles | 80.14 | 76.13 |
| Demolish and remove steel towers | 63.41 | 60.24 |
| Site clean up | 476.36 | 452.55 |
| Helicopter Activities | 3,455.32 | 3,282.55 |
| **Total GHG Emissions from all Construction Activities Over 36-Months** | **23,757.02** | **22,569.17** |
| **Total GHG Emissions Amortized over 30 years** | **791.90** | **752.31** |

MT = metric tons

$CO_2e$ = carbon dioxide equivalent

[1] Reduction in GHG emissions assumes that implementation of APM GHG-1 will achieve a 5 percent reduction in emissions. Implementation of APM AQ-1 and AQ-2 may further reduce GHG emissions, but this potential reduction is not quantifiable and is not included here.

Table 3.7-2 shows that a maximum of approximately 24,000 metric tons of $CO_2e$ could be generated during the project's 36-month construction period. Amortized over 30 years, the total worst-case GHG construction emissions associated with project construction is less than 800 metric tons of $CO_2e$ per year, which is well below the significance threshold of 10,000 metric tons. Accordingly, impacts from project-generated GHG emissions will be less than significant and, in addition, will not be cumulatively considerable or significantly contribute to global climate change.

**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***

Although project implementation will result in temporary construction-related GHG emissions, the intent, purpose, and function of the project aligns with the goals of the AB 32 Scoping Plan, which is the GHG reduction plan for California. Electrification of day-to-day operations in land use development projects and industrial processes is a method that potentially can reduce fossil fuel combustion (e.g., gasoline, diesel) by using a less carbon-intensive energy source (depending on the source of electricity production). By increasing transmission system reliability, more customers can have access to reliable electricity and potentially can electrify more of their operations, which may result in fewer GHG emissions. In addition, the project will improve the electric transmission infrastructure in the region. The lines in the Palermo–Rio Oso transmission system serve as a transmission path for a significant amount of hydroelectric energy flow into PG&E's network. These power lines transfer electric generation output from hydroelectric facilities in the Pacific Northwest and local hydroelectric plants in the Sierra Nevada, including facilities along the Feather River between Lake Almanor and Lake Oroville, to load centers in the San Francisco Bay Area and southern California. Although the project will not be linked directly to a renewable energy project, it will reinforce the infrastructure needed to achieve large-scale reductions in GHG emissions as California transitions to more renewable energy sources. Therefore, the project will be consistent with the goals of the AB 32 Scoping Plan and there will be no impact.

## 3.7.5 REFERENCES

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# 3.8 HAZARDS AND HAZARDOUS MATERIAL

## 3.8.1 INTRODUCTION

This section describes existing conditions and potential impacts related to hazards and hazardous materials associated with construction, operation, and maintenance of the project. The analysis concludes that any impacts related to hazards and hazardous materials will be less than significant; implementing the Applicant-Proposed Measures (APMs) described in Section 3.8.4.2 will further reduce less-than-significant impacts. Potential hazards that were evaluated include fire hazards, releases or encounters with existing hazardous substances and contamination, proximity to airports, high-voltage electrical equipment, and helicopter use during construction. This section also describes potential impacts on public health and safety related to hazardous materials that could result from implementing the project. The project's potential effects associated with hazards and hazardous materials were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.8-1 and discussed in more detail in Section 3.8.4.

**Table 3.8-1: CEQA Checklist for Hazards and Hazardous Materials**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☒ | ☐ |

## 3.8.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.8.2.1 Regulatory Background

The use of hazardous materials and disposal of hazardous waste are subject to numerous laws and regulations at all levels of government. The following paragraphs contain an overview of pertinent regulations.

#### *Federal*

*Resource Conservation and Recovery Act*

Under the Resource Conservation and Recovery Act of 1976 (RCRA) (42 USC Section 6901 et seq.), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements. The federal government approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992.

*Comprehensive Environmental Response, Compensation, and Liability Act*

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 USC Chapter 103) and associated Superfund Amendments provide the US EPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. CERCLA also enabled the revision of the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan (NCP). The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants.

*U.S. Department of Transportation Hazardous Materials Regulations*

The U.S. Department of Transportation (DOT) Hazardous Materials Regulations (Title 49 CFR Parts 100–185) cover all aspects of hazardous materials packaging, handling, and transportation.

*Federal Aviation Administration Regulations*

The FAA must be notified of any structures located in the airspace of an airport as defined in 14 CFR Section 77.9 (b)(1), (2), and (3), or new structures taller than 200 feet in height, to confirm that the proposed structures will not pose a threat to safety.

### *State*

#### *Hazardous Waste Control Law*

The HWCL (California Health and Safety Code [HSC] Chapter 6.5 Section 25100 et seq.) authorizes the California Environmental Protection Agency (Cal/EPA) and the Department of Toxic Substances Control (DTSC), a department within Cal/EPA, to regulate the generation, transportation, treatment, storage, and disposal of hazardous wastes. DTSC can also delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of HWCL.

#### *Hazardous Substance Account Act*

The Hazardous Substance Account Act (HSAA) (California HSC Chapter 6.8 Section 25300 et seq.) is California's equivalent to CERCLA. It addresses hazardous waste sites and apportions liability for them. The HSAA also provides that owners are responsible for the cleanup of such sites and the removal of toxic substances, where possible.

The two state agencies with primary responsibility for enforcing federal and state regulations related to hazardous material transport, and responding to hazardous materials transportation emergencies, are the California Highway Patrol (CHP) and California Department of Transportation (Caltrans), respectively.

#### *Occupational Health and Safety*

The California Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state (California Code of Regulations [CCR] Title 8). Cal/OSHA standards are more stringent than federal Occupational Safety and Health Administration regulations and take precedence.

#### *Hazardous Materials Management*

The California Office of Emergency Services is the state office responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. CCR Title 26 is a compilation of the chapters or titles of the CCR that are applicable to hazardous materials management.

#### *Porter-Cologne Water Quality Control Act*

As discussed in more detail in Section 3.9, Hydrology and Water Quality, the Porter-Cologne Water Quality Control Act (California Water Code, Division 7) is the provision of the California Water Code that regulates water quality in California and authorizes the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) to implement and enforce the regulations. The Regional Boards regulate discharges under Porter-Cologne primarily through the issuance of waste discharge requirements. Anyone discharging or proposing to discharge materials that could affect water quality must file a report of waste discharge. The SWRCB and the RWQCBs can make their own investigations or may require dischargers to carry out water quality investigations and report on water quality issues. Porter-Cologne provides several means of enforcement, including cease and desist orders, cleanup and

abatement orders, administrative civil liability orders, civil court actions, and criminal prosecution. The project area is under the jurisdiction of the Central Valley RWQCB.

### *Unified Hazardous Waste and Hazardous Materials Management Regulatory Program*

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (CCR Title 27) was mandated by the State of California in 1993. The Unified Program was created to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for six hazardous materials programs. The program has six elements, including:

- Hazardous Waste Generators and Hazardous Waste On-Site Treatment
- Underground Storage Tanks
- Aboveground Petroleum Storage Act
- Hazardous Materials Release Response Plans and Inventories
- California Accidental Release Prevention
- Uniform Fire Code Hazardous Materials Management Plans and Hazardous Materials Inventory Statements

At the local level, this is accomplished by identifying a Certified Unified Program Agency (CUPA) that coordinates all of these activities to streamline the process for local businesses. The Butte County Public Health Department, Environmental Health Division is approved by Cal/EPA as the CUPA for Butte County. Yuba County's Environmental Health Division is approved by Cal/EPA as the CUPA for Yuba County. Sutter County's Environmental Health Division is approved by Cal/EPA as the CUPA for Sutter County.

### *Rules for Overhead Electric Line Construction*

Under Section 35 of General Order 95, the CPUC regulates all aspects of design, construction, operation, and maintenance of electrical power lines and fire safety hazards for utilities subject to their jurisdiction.

### *Public Resources Code*

Public Resources Code (PRC) Sections 4292–4293 identify construction, operation, and maintenance requirements to minimize fire hazards for structures located in State Responsibility Areas.

- PRC Section 4292 addresses power line hazard reduction. It identifies the requirements for firebreaks around "any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole" in wildland areas.

- PRC Section 4293 provides specific clearances for power lines in wildland areas.

### *Fire Prevention Standards for Electric Utilities*

The Fire Prevention Standards for Electric Utilities (CCR Title 14, Sections 1250-1258) provide definitions, maps, specifications, and clearance standards for projects under the jurisdiction of PRC Sections 4292 and 4293 in State Responsibility Areas.

### *CalFire Forest Practice Rules*

CalFire's Forest Practice Rules 2013 (CCR Title 14, Article 8, Fire Protection) address fire prevention in forested areas. These rules were developed to address fire protection requirements during logging operations but also apply to tree-cutting during PG&E construction projects in forested areas.

## *Local*

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. This section provides information on adopted airport land use plans and adopted emergency response plans or evacuation plans for informational purposes and to assist with CEQA review.

### *Airport Land Use Compatibility Plans*

Airport Land Use Compatibility Plans (ALUCPs) were adopted for Butte, Yuba, and Sutter Counties in 2000, 2011, and 1994, respectively. The ALUCPs set forth policies to promote compatibility between airports and future land uses in the area surrounding the airports by establishing compatibility criteria that apply to new development. The ALUCPs outline airport-area height restrictions necessary to ensure that objects will not impair flight safety or decrease the operational capability of the airport.

In Yuba County, a portion of the project area lies within the designated Airport Influence Area (AIA) of Yuba County Airport. The Yuba County ALUCP has adopted Federal Aviation Regulations Part 77 imaginary surfaces to determine height restrictions for natural and artificial objects. Although other airports and private air strips in Butte and Sutter Counties are located within 2 miles of the project area, the project area is not within a designated airport land use planning area in those counties.

Yuba County airport land use compatibility is discussed further with regard to noise and land use standards in Section 3.12, Noise, and Section 3.10, Land Use and Planning.

### *Adopted Emergency Response Plans/Evacuation Plans*

Emergency plans in effect in the project area are as follows:

The Butte County Local Hazard Mitigation Plan, the Yuba County Multi-Jurisdictional Multi-Hazard Mitigation Plan, and the Sutter County Local Hazard Mitigation Plan provide hazard mitigation and emergency response protocols in the project area.

- **Butte County Local Hazard Mitigation Plan.** The Butte County Local Hazard Mitigation Plan was updated in 2014 and was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Butte County would be eligible for the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation and Hazard Mitigation Grant programs. The plan identifies and analyzes existing hazards (such as earthquakes, fire, floods, and drought), assesses community vulnerability and mitigation capabilities, and provides mitigation strategies, a mitigation action plan, and an implementation program (AMEC 2014).

- **Yuba County Multi-Jurisdictional Multi-Hazard Mitigation Plan.** The Yuba County Multi-Jurisdictional Multi-Hazard Mitigation Plan was developed in 2007 with the input of the Yuba County Board of Supervisors and county stakeholders in collaboration with federal, state, and local governmental agencies and special districts. The plan identifies, profiles, and analyzes existing hazards (such as floods, levee failures, severe weather, dam failure, crime terrorism, and fire), assesses community vulnerability and mitigation capabilities, and provides mitigation strategies, a mitigation action plan, and an implementation program (Yuba County 2007).

- **Sutter County Local Hazard Mitigation Plan.** The Sutter County Local Hazard Mitigation Plan was developed in 2013 and was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to make Sutter County eligible for FEMA's Pre-Disaster Mitigation and Hazard Mitigation Grant programs. The plan identifies, profiles, and analyzes existing hazards (such as floods, levee failures, fires, and severe weather), assesses community vulnerability and mitigation capabilities, and provides mitigation strategies, a mitigation action plan, and an implementation program (AMEC 2013).

#### 3.8.2.2 Methodology

The methodology for analyzing impacts from hazards and hazardous materials includes identifying general types of hazardous materials and activities that may be used or encountered during project construction, operation, and maintenance. Potential hazards associated with proximity to airports were evaluated by reviewing the ALUCPs for Butte, Yuba, and Sutter Counties. Potential fire hazards were evaluated through review of CalFire state fire-hazard maps. Potential health and safety hazards associated with construction, operation, and maintenance activities were assessed based on a review of the project description relative to typically required safety planning and management procedures. Potential impacts on the environment, workers, and public health were further evaluated using information on the existing and historical uses of the project area and surrounding properties, and on known contamination, to determine the likelihood of encountering hazardous materials.

A report from Environmental Data Resources, Inc. (EDR) was evaluated to screen for hazardous materials and waste-handling facilities and reported contamination and release sites within 1 mile of the project right-of-way (ROW) centerline (JJ&A 2016). The EDR report complies with the standard search distances and review standards contained American Society for Testing of Materials (ASTM) Standard Designation ASTM E 1527-13, and includes: (1) information on sites within 1 mile on either side of the project area that were identified in federal, state, and local databases related to hazardous materials and wastes; and (2) maps showing the locations of these sites. The database search process reviews multiple lists for historically contaminated properties and businesses that use, generate, or dispose of hazardous materials or petroleum products in their operations. In addition, the EDR search reviews lists of active contaminated sites that are currently undergoing monitoring and remediation.

The EDR report was used to identify sites along the routes that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 ("Cortese List"). Because the Cortese List is no longer specifically updated by the state, those requesting a copy of the list are now referred directly to the appropriate information resources contained on

the internet websites of the boards or departments that are referenced in the statute. Therefore, the EDR report's findings of Cortese List sites was supplemented by reviewing the DTSC's Envirostor database (DTSC 2015) and the SWRCB's GeoTracker database (SWRCB 2015) for additional sites within 1 mile of the project area.

## 3.8.3 ENVIRONMENTAL SETTING

The South of Palermo 115 kV Power Line Reinforcement Project is located on the eastern flank of the Sacramento Valley and spans portions of Butte, Yuba, and Sutter Counties between the communities of Oroville to the north and East Nicolaus to the south. The area is occupied primarily by agricultural land uses and open range land, and skirts some areas with residential and commercial development. Lines will be modified near the developed communities of Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Plumas Lakes, East Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus. Prominent geographic features that intersect the project area include the Feather River, Yuba River, Bear River, other smaller perennial streams, and numerous highways including State Route (SR) 99, SR 70, SR 65, and SR 20.

Several schools are located near the project area, as shown in Table 3.15-2 and on Figure 3.15-1 in Section 3.15, Recreation.

The project area traverses portions of Butte County zoned as agricultural, agricultural residential, industrial, and commercial. Within Yuba County, the project area crosses or is adjacent to properties zoned as agricultural, agricultural residential, public facilities, rural residential, and light industrial. In Sutter County, the project area crosses or is adjacent to properties zoned as agricultural. See Chapter 3.10, Land Use and Planning, for additional information about zoning in the project area.

### 3.8.3.1 Airports

Airports found within 2 miles of the project area are listed in Table 3.8-2 and described in additional detail below.

**Table 3.8-2: Airports in the Project Vicinity**

| Airport | Address | Distance from Project Alignment (miles) |
|---|---|---|
| ***Butte County*** | | |
| Siller Bros Inc. Airport – Private Airstrip | Power House Hill Rd., Oroville, CA 95965 | 1.6 |
| ***Yuba County*** | | |
| Yuba County Airport | 1364 Sky Harbor Dr., Olivehurst, CA 95961 | 1.2 |
| ***Sutter County*** | | |
| Sutter County Airport | 146 Garden Hwy., Yuba City, CA 95991 | 1.9 |
| Source: EDR 2015 | | |

- Siller Bros Inc. Airport is a private air strip, located approximately 1.6 miles from the project area. Siller Bros Inc. Airport is not listed in the Butte County ALUCP (Shutt Moen Associates 2000).

- Yuba County Airport is a public airport. A review of the Yuba County ALUCP indicates that a portion of the project area is within the designated AIA, which extends approximately 2.5 miles to the south, east, and west, and 4 miles to the north, of the ends of the Yuba County Airport runways. Within the AIA are Review Area 1 and Review Area 2. Review Area 1 encompasses locations where noise (from aircraft operations), overflight impacts (from routine flight over a community), safety (from the perspective of minimizing the risks of aircraft accidents beyond the runway environment), and airspace protection (accomplished by limits on the height of structures and other objects in the airport vicinity and restrictions on other uses that potentially pose hazards to flight) represent potential compatibility concerns. Review Area 2 consists of locations where airspace protection and overflights are both compatibility concerns, but noise and safety are not of concern (Mead & Hunt Inc. 2011).

- Sutter County Airport is a public airport, located approximately 1.9 miles from the project area. A review of the Sutter County ALUCP indicates that the project area is not within the Sutter County Airport Overflight Safety Zone, which extends 5,000 feet from the ends of the runway (Sutter County ALUC 1994).

In addition to these facilities, the Oroville Airport is located 4 miles northwest of the northern portion of the project alignment, the Sacramento International Airport is approximately 14.5 miles south of the southern portion of the alignment, and the privately-owned Rio Linda Airport is approximately 16.5 miles south of the southern portion of the alignment.

#### 3.8.3.2 Schools

The California Department of Education's (CDE's) *California School Directory* (CDE 2015) was reviewed along with the Butte, Yuba, and Sutter County general plans and aerial maps to determine the proximity of schools to the project area. There are no schools within 0.25 mile of the Butte County portion of the project area. The schools within 0.25 mile of the project area in Yuba County are Linda Elementary (within approximately 0.1 mile), Lindhurst High School (within approximately 0.1 mile), Yuba Gardens Intermediate School (within approximately 0.01 mile), and Yuba College (within approximately 0.15 mile). The only school within 0.25 mile of the Sutter County portion of the project area is East Nicolaus High School, located within approximately 0.10 mile. Existing schools and their proximity to the project area are shown in Table 3.15-2 and on Figure 3.15-1 in Section 3.15, Recreation.

#### 3.8.3.3 Reported Hazardous Materials Sites and Release Incidents

A summary of the findings of the environmental database review conducted for the project is presented below (JJ&A 2016).

### *Federal Records*

The National Priority List (NPL) database indicates that one site for priority cleanup under the Superfund Program is within 1 mile of the project ROW centerline. This site, Koppers Co., Inc. (Oroville Plant), was also listed on the CORRACTS,[1] US ENG CONTROLS,[2] US INST CONTROLS,[3] CONSENT,[4] ROD,[5] and PRP[6] databases. The site is approximately 1 mile from the northern portion of the South of Palermo Line at Baggett-Marysville Road in Oroville, California.

The CERCLIS[7] database lists two sites within 1 mile from the project ROW centerline. CERCLIS contains sites which are either proposed for, or listed on, the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL. The first site, Koppers Co., Inc. (Oroville Plant) is discussed above. The second site is Cecil's Radiator Shop and is located approximately 0.5 mile from the South of Palermo Line at 5174 Lindhurst Avenue, Olivehurst, California. DTSC has determined that no further removal or remedial action is necessary at this site.

The ERNS[8] database identifies one site within 1 mile from the project ROW centerline. The site, reported as "Pacific Gas and Electric," is the Olivehurst Substation at 4746 Power Line Road in Olivehurst, California. Records indicate that mineral oil was released from a transformer into bermed secondary containment as a result of equipment failure.

The US BROWNFIELDS[9] database identifies one site within 1 mile from the project ROW centerline. The site, Keystone Automotive, is located approximately 0.4 mile from the South of Palermo Line at 5066 and 5079 Powerline Road in Olivehurst, California. It is also listed in the state DEED database as having a DTSC-imposed recorded land use restriction, and in the state Voluntary Cleanup Program Properties (VCP) database as a low threat-level property with either confirmed or unconfirmed releases. Records indicate that the 6-acre site has lead and petroleum products in soil and is the subject of a DTSC deed restriction. Because of the distance of this site

[1] Corrective Action Report (CORRACTS) identifies hazardous waste handlers with RCRA corrective action activity.

[2] The Engineering Controls Sites List (US ENG CONTROLS) is a list of sites with engineering controls in place. Engineering controls include various methods to create pathway elimination for regulated substances to enter environmental media or affect human health.

[3] Sites with Institutional Controls (US INST CONTROL) database lists sites with institutional controls in place. Institutional controls include administrative measures intended to prevent exposure to contaminants remaining on site, and generally require deed restrictions.

[4] The CONSENT database contains Superfund (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]) consent decrees that establish responsibility and standards for cleanup at Superfund sites.

[5] Records of Decision (ROD) documents mandate a permanent remedy at a Superfund site.

[6] Potentially Responsible Parties (PRP) records are maintained by the U.S. Environmental Protection Agency (US EPA), and verify parties potentially responsible for cleanups.

[7] The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database contains data on potentially hazardous waste sites that have been reported to the US EPA by states, municipalities, private companies, and private persons, pursuant to Section 103 of CERCLA.

[8] The Emergency Response Notification System (ERNS) database contains records and stores information on reported releases of oil and hazardous substances.

[9] The US BROWNFIELDS database contains the US EPA's listing of properties from the *Cleanups in My Community* program, which provides information on brownfields properties reported to the US EPA, as well as areas served by brownfields grant programs.

from the project area and the fact that site contaminants are confined to soil, it is considered unlikely that contamination associated with this site would be encountered during project construction and operation.

### *State and Local Records*

The HIST Cal-Sites[10] database contains the California DTSC's listing of both known and potential hazardous substance sites, and lists two sites within 1 mile from the project ROW centerline. One of the two sites is also listed in the state RESPONSE database, which lists confirmed release sites where DTSC is involved in remediation, in either a lead or an oversight capacity.

The California SWF/LF[11] database identifies one site within 1 mile from the project ROW centerline. The SWF/LF database records typically contain an inventory of solid waste disposal facilities or landfills in a particular state.

The Cortese database lists two sites within 1 mile from the project area centerline. The Cortese database contains sites designated by the SWRCB (leaking underground storage tanks [LUST]), the Integrated Waste Board (SWF/LS), and the DTSC (Cal-Sites).

The HIST CORTESE database lists 16 sites within 1 mile from the project ROW centerline. The HIST CORTESE database is no longer updated, but contains sites designated by the SWRCB (LUST), the Integrated Waste Board (SWF/LS), and the DTSC (Cal-Sites). Of the 16 listed sites, 12 are designated as LUST sites with "Completed - Case Closed" status. One of these 12 sites was also identified in the Notify 65 database as a reported Proposition 65[12] incident. The four remaining sites are active LUST cleanup or monitoring sites.

The LUST database lists 23 sites within 1 mile from the project ROW centerline. The LUST database contains an inventory of reported LUST incidents. Of the 23 sites listed, 19 are designated as LUST sites with "Completed - Case Closed" status. The four remaining sites are active LUST cleanup or monitoring sites. The statewide Spills, Leaks, Investigations and Cleanup (SLIC) database lists four sites within 1 mile from the project ROW centerline. The SLIC database contains an inventory of spills, leaks, investigations, and cleanups cost recovery. It yielded information on two of the sites located upgradient from the project area:

- **Bonanza Seed Co.** This site is located adjacent to the Bogue Sub Line Segment at 3818 Railroad Avenue, Yuba City, California, and is an open, but inactive, Central Valley RWQCB Cleanup Program site. According to the SWRCB's GeoTracker database, a leak was reported at this site in 1965 and a case was opened in the SLIC unit in 2001. Information on the source of the leak, the substance that was leaked, the volume that was

[10] The HIST Cal-Sites database contains potential or confirmed hazardous substance release properties. It is no longer updated and has been replaced by the Department of Toxic Substances Control's Envirostor database.

[11] Solid Waste Information System's list of active, closed, and inactive landfills

[12] The NOTIFY 65 database lists Proposition 65 incidents reported to the counties by the State Water Resources Control Board and the Regional Water Quality Control Boards. Proposition 65 became the Safe Drinking Water and Toxic Enforcement Act of 1986, and requires "the State to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm" (OEHHA 2007). The reporting agency no longer updates the database.

leaked, the reason the case was opened, or investigation results is not available in the GeoTracker database. Mr. Michael Smith, the Central Valley RWQCB caseworker for this site, was contacted and stated that no additional records or information exist for this site in the Central Valley RWQCB archives. Mr. Smith indicated that the lack of files or records for this case may indicate that the leak that was reported in 1965 was a minor incident that did not warrant follow up. The depth to groundwater is approximately 20 to 30 feet below ground surface in this area and the shallow groundwater gradient is to the northeast (toward the project area).

- **DBA Matsumura Corporation.** This site is located 0.4 mile from the Bogue Sub Line Segment at 1250 Walnut Avenue, Yuba City, California, and is an open, but inactive, Central Valley RWQCB Cleanup Program site. According to the SWRCB's GeoTracker database, approximately 100 gallons of fuel were released to soil at this site in 2006 as a result of a single surface spill from an aboveground storage tank. Documentation in the database indicates that the fuel-contaminated soil was excavated seven days after the spill and stockpiled on visqueen liners. Microbes were later introduced into the stockpile for final cleanup by augmented bioremediation. The RWQCB acknowledged receipt of this information, indicated they were in agreement with the response that had been taken, and anticipated review of the report documenting the release and cleanup actions. No follow up information from the responsible party or the RWQCB was available in the GeoTracker database. The depth to groundwater is approximately 20 to 30 feet below ground surface in this area and the shallow groundwater gradient is to the northeast (toward the project area).

The Clandestine Drug Labs (CDL) database lists two sites within 1 mile from the project ROW centerline. The CDL database lists drug lab locations. The listed sites are Casa Mia Mobile Home Park, at 2019 Hammonton Smartville Road, Marysville, California; and 4411 Powerline Road, Olivehurst, California. Both sites are directly adjacent to the South of Palermo Line. Listing of a location in the CDL database does not indicate whether any illegal drug lab materials were present there, and does not constitute a determination that the location either requires or does not require additional cleanup work. The sites are not listed in any of the other state or federal databases of environmental investigations, cleanups, or responses.

The Envirostor database lists 22 sites within 1 mile from the project ROW centerline. The Envirostor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. Of the 22 sites listed, 16 are designated with "No Further Action," "Completed - Case Closed," or "Certified as having been remedied satisfactorily" status, and are therefore expected to have no effect on the project. Two sites are designated with "Inactive – Withdrawn" status. One site is under evaluation for potential waste contamination. One site is an active DTSC cleanup site.

The WMUDS/SWAT[13] database lists one site within 1 mile from the project ROW centerline. The WMUDS/SWAT database contains an inventory of waste management units.

[13] WMUDS/SWAT is the Waste Management Unit Database, used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units.

The RGA LUST[14] database lists one site within 1 mile from the project ROW centerline. The RGA LUST database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.

SWRCB's GeoTracker database lists four active LUST cleanup sites within 1 mile of the project ROW centerline that were not listed in the EDR report.

The EDR database search indicates that two landfills or waste management units are located within 1 mile of the project area. There are no records of contamination, releases, or violations at these sites.

The EDR database search identified a number of RCRA generators of hazardous waste and CUPA-registered hazardous materials handlers and hazardous waste generators within 1 mile of the project ROW centerline.

The orphan listing review[15] did not identify any active cleanup sites within 1 mile of the project ROW centerline.

#### 3.8.3.4 Wildland Fire Hazards

The project route passes through a number of State Responsibility Areas that are classified by CalFire as moderate to high fire hazard severity zones (CalFire 2007a–2007d, 2008). These areas may be described as follows:

- In Butte County, the Palermo Sub Line Segment and the northern portion of the South of Palermo Line pass through moderate and high fire-hazard severity zones in the hills east of Oroville and southward approximately to the Yuba County border.

- In Yuba County, the South of Palermo Line 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.

### 3.8.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to hazards and hazardous materials derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational impacts related to hazards and hazardous materials.

#### 3.8.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines,

[14] RGA LUST is EDR's Recovered Government Archive Leaking Underground Storage Tank database.

[15] "Orphan" listings are sites that EDR identified as "unmappable." These were located and evaluated by cross-referencing available address information and facility names using maps and local directories.

the potential significance of project impacts related to hazards and hazardous materials were evaluated for each of the criteria listed in Table 3.8-1, as discussed in Section 3.8.4.3.

### 3.8.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

***APM HAZ-1: Hazardous-Substance Control and Emergency Response***

PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on-site, as applicable.

Project construction will involve soil surface blading/leveling, excavation of up to several feet, and augering to a maximum depth of 35 feet in some areas. No known soil contamination was identified within the project site. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
- Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

PG&E will complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.

***APM HAZ-2: Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE)***

The program will include the following components related to hazards and hazardous materials:

- PG&E Health, Safety, and Environmental expectations and management structure.
- Applicable regulations.
- Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.
- Summary of the primary workplace hazards to which workers may be exposed.
- Overview of the measures identified in APM HAZ-1.
- Overview of the controls identified in the Storm Water Pollution Prevention Plan (SWPPP) under APM HYDRO-1.

This measure will be coordinated with worker training required under APM BIO-1.

***APM HAZ-3: Fire Risk Management***

PG&E will follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Project personnel will be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads will have federally approved or State-approved spark arrestors. All off-road vehicles will be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens will be used when welding. In addition, during fire "red flag" conditions (as determined by CalFire), welding will be curtailed. Every fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials will be removed from equipment parking and storage areas.

### 3.8.4.3 Potential Impacts

Project impacts related to hazards and hazardous materials were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, with new support structures and modifications to existing facilities within the existing utility corridor. Existing towers range in height from approximately 75 feet to 95 feet, with a typical height of approximately 76 feet. To support the

new conductor, the South of Palermo Line and Bogue Sub Line Segment will require new support structures. Existing lattice steel towers within these segments will be replaced with TSPs, hybrid poles, LSPs or lattice steel towers. TSPs will be used at angle, dead end, conductor transposition, and equipment (switch) poles where a stronger structure is needed. The height of the TSPs will range from 90 to 140 feet. Hybrid poles will range from approximately 75 to 100 feet tall. LSPs will be installed in locations where there is not sufficient room to install TSPs or hybrid poles. The height of LSPs would be approximately 85 feet.

The new pole foundations are estimated to be buried below ground to varying depths, with the deepest foundations extending approximately 35 feet below ground surface. The Palermo Sub Line Segment, Pease Sub Line Segment, and Rio Oso Sub Line Segment Loop will generally only require tower modifications to support the new conductor.

The project area lies within existing easements and consists of modifications to existing facilities within an existing utility corridor. Temporary construction staging, laydown, tensioning, and helicopter landing areas will be established, and temporary construction access roads will be constructed. Whenever possible, the project will utilize existing access roads to construct and maintain the power line system. In order to replace conductors in some locations, temporary guard structures will be built to prevent conductors from falling to the ground, and are estimated to be installed approximately 7 feet below ground surface. In addition, temporary snub poles that typically extend approximately 10 feet below ground surface will be installed. All temporary guard structures will be removed following completion of construction.

The operation and maintenance (O&M) activities required for the upgraded power line will not change from those currently required for the existing system; thus, no operation-related impacts related to hazards and hazardous materials will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing towers (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

Construction of the proposed project will involve the use of limited quantities of hazardous materials such as liquid concrete, vehicle fuels, lubricant and other vehicle maintenance fluids, and cleaning solvents. When not in use, any hazardous material will be stored in designated construction staging areas in compliance with local, state, and federal requirements. Transportation of hazardous materials to be used during construction will be conducted in compliance with U.S. Department of Transportation (DOT) requirements. Waste generated during construction includes the removed towers and conductor, remnant construction and equipment maintenance materials, and crates used to ship materials. After construction, all hazardous materials and waste will be removed from the site for reuse, recycling, or disposal at a properly licensed facility in accordance with state and federal regulations and requirements. PG&E will follow its standard health and safety practices, including safety management, hazard recognition, safe work practices, emergency response, traffic plans, and helicopter safety, as appropriate. PG&E's existing procedures, and APM HAZ-1 and APM HAZ-2, will be implemented as part of the project in order to assure the safe management of hazardous materials, and timely, safe, and effective spill response.

Safety management and emergency response planning will be an integral component of the project. To that end, PG&E will implement APM HAZ-1 through APM HAZ-3 as part of its standard operating procedures. Working in proximity to high-voltage electricity is a potential hazard during construction of the proposed project. Reconductoring the lines will require PG&E to temporarily take out of service specific sections of distribution and transmission lines that cross the power line or are co-located on the power line (also known as taking clearances). As part of ongoing O&M of the distribution system during project construction, PG&E's Distribution System Operations group will manage distribution clearances and balance the system by routing power to different lines. This normally involves turning existing distribution switches on and off and installing additional switches if needed. PG&E crews will perform this work remotely or in the field as needed to comply with safety procedures, to limit customer outages, and to manage the operational needs of the system.

Helicopters will be used to transport workers, structures, and construction materials into and out of the construction areas and to install and remove structures and conductors. All helicopter operations will be performed in compliance with the requirements of the FAA and with the Helicopter Use Plan, which PG&E will provide separately to CPUC staff.

**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***

Construction of the proposed project will involve the use of hazardous materials such as liquid concrete, vehicle fuels, lubricants and other vehicle maintenance fluids, hydraulic fluid, and cleaning solvents. When not in use, any hazardous material will be stored in designated construction staging areas in compliance with local, state, and federal requirements. Transportation of hazardous materials to be used during construction will be conducted in compliance with DOT requirements. After construction, all hazardous materials and waste will be removed from the site for reuse, recycling, or disposal at a properly licensed facility in accordance with state and federal regulations and requirements.

As part of APM BIO-12, PG&E will conduct all fueling of vehicles at least 100 feet from wetlands and other water bodies and set staging areas at least 50 feet from streams, creeks, or other water bodies to avoid potential impacts on the riparian habitats from construction and staging areas from hazardous materials leaks and spills, as specified in the SWPPP for the project. In addition, controls will put in place by the SWPPP under APM HYDRO-1, Hazardous Substance Control and Emergency Response procedures under APM HAZ-1, and the Worker Environmental Awareness Program under APM HAZ-2. These APMs will minimize the likelihood of spills and assure a prompt, safe, and effective response if a spill were to occur. With implementation of these actions, impacts associated with transport, use, and disposal of hazardous materials during construction or operation of the project will 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***

Project construction will require the use of motorized heavy equipment, including trucks. During construction activities, there is an increased potential for an accidental release of fluids from a vehicle or motorized piece of equipment as discussed above. Implementing APM HAZ-1

and APM HAZ-2 will address these hazards during construction. In addition, implementing PG&E standard safety procedures will decrease the potential for spills, including those resulting from traffic and mobile equipment accidents. With implementation of these PG&E's standard procedures and the APMs during project construction, impacts associated with upset and accident conditions involving the release of hazardous materials into the environment will be less than significant.

One Superfund site and a number of waste management sites, hazardous waste generators, hazardous materials release incidents, LUST sites, and toxic cleanup sites were identified within 1 mile of the project ROW centerline. These sites were further evaluated for their potential to affect the proposed project based on their distance from the project area, the nature of the incident or contamination, the depth and flow direction of groundwater, and the extent of cleanup efforts (JJ&A 2016). Based on this evaluation, it was concluded that with the possible exception of two sites, hazardous substances associated with the reported sites are not expected to be encountered during construction or operation of the project (JJ&A 2016).

The two remaining sites (Bonanza Seed Co. and DBA Matsumura Corporation), are located near the Bogue Sub Line Segment in Yuba City, California. The depth to groundwater is approximately 20 to 30 feet below ground surface in this area and the shallow groundwater gradient is to the northeast (from the sites toward the project area). Existing lattice steel towers and LSPs in this part of the project ROW will be replaced primarily with TSPs. The TSPs are 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. These sites were therefore more closely evaluated to determine whether there is a significant potential that contamination could be encountered during drilling of the foundations, handling of soil spoils, or handling of displaced groundwater.

Bonanza Seed Co. is located adjacent to the Bogue Sub Line Segment. A leak was reported at this site in 1965 and a contamination case was opened in 2001; however, no further information regarding the source of the leak, the substance or volume that was leaked, the reason the case was opened, or any investigation results is available in the state's records for this site. The designated RWQCB caseworker for this site was contacted and indicated that his agency had no additional information regarding this site, and stated that the lack of files or records for this case may indicate that the leak was a minor incident that did not warrant follow up. Without sufficient data, the possibility that contamination associated with this site could be encountered during construction cannot be completely ruled out. However, based on the available information, it is considered unlikely that this would occur. The risk of public, worker, or environmental exposure to hazardous substances released at the Bonanza Seed Company site is therefore considered less than significant.

DBA Matsumura Corporation is located 0.4 mile from the Bogue Sub Line Segment. Approximately 100 gallons of fuel was released to soil at this site in 2006 as a result of a single surface spill from an aboveground storage tank and was reportedly excavated and treated within 7 days. No further information or follow up sampling results are available. Without sufficient data, the possibility that contamination associated with this site could be encountered during construction cannot be completely ruled out. However, based on the distance to the site, the

limited volume of the spill, and the timeliness of cleanup efforts, it is considered unlikely that this would occur. The risk of public, worker, or environmental exposure to hazardous substances released at the DBA Matsamura Corporation site is therefore considered less than significant.

PG&E will implement APM HAZ-1 and APM HAZ-2, which will include information and procedures to identify and respond to any unexpected encounter of hazardous materials or contamination during construction activities. Implementation of these APMs will further reduce the less-than-significant impacts.

**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***

Five schools are located within 0.25 mile of the project area. Approximately 18 work areas and approximately two helicopter landing zones are within 0.25 mile from the schools identified in Table 3.15-2 and on Figure 3.15-1 in Section 3.15, Recreation.

Construction will involve limited quantities of liquid concrete, vehicle fuels, lubricants and other vehicle maintenance fluids, hydraulic fluid, and cleaning solvents. As discussed in Section 3.3, Air Quality, and indicated in Tables 3.3-7 through 3.3-10, construction activities associated with the proposed project would generate construction-related emissions of criteria pollutants. Implementing APM AQ-1 and APM AQ-2 and APM GHG-1, which include controlling fugitive dust and reducing idling time, will reduce exposure to schools and other sensitive receptors.

No acutely hazardous materials, substances, or waste listed in Section 25532 of the HSC or 40 CFR Part 355 will be used or generated by the project. Given the temporary and short-term nature of construction in any one area, the relatively small quantity of hazardous materials to be used, and the distance between the schools and the project area, impacts on schools from potential hazardous substance emissions will be less than significant. Implementing APM HAZ-1 and APM HAZ-2 will further reduce the less-than-significant impacts.

**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? *No Impact***

Based on the environmental database search conducted by EDR and review of the state Envirostor and GeoTracker databases, the project area is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (JJ&A 2016).

**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? *Less than Significant***

Sutter County Airport and Yuba County Airport are located within 2 miles of the existing transmission line corridor. PG&E has submitted the required Notice of Proposed Construction and Alteration Application to the FAA for any poles that exceed the Notice Criteria, and the FAA confirmed the project will not cause any air navigation hazards.

Helicopter flight paths generally will be limited to the existing power line ROW and project-specific landing zones. PG&E will prepare a Helicopter Use Plan pursuant to APM TRA-2, which will be submitted separately to CPUC staff. Helicopter use will be in accordance with all applicable federal, state, and local aviation rules and regulations, and will not create any new hazards. In addition, PG&E will coordinate with local airports regarding helicopter operations and flight plans during project construction. Accordingly, the project will not result in a safety hazard for people residing or working in the 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?** ***Less than Significant***

The Siller Bros Inc. Airport – Private Airstrip, a private airstrip, is located approximately 1.6 miles from the South of Palermo Line near Oroville. The airstrip runs northeast to southwest, parallel to the section of the South of Palermo Line it is located near. Because of the distance from the project to the airstrip, infrequent flights, and lighter aircraft, the project will not expose people residing or working along the project route to a safety hazard. Further, while the FAA does not identify obstructions to air navigation for a private airstrip, standard FAA calculations were applied and it was determined that the proposed new poles or pole extensions will not penetrate any of the imaginary surfaces that extend from the private airstrip. In addition, PG&E will coordinate with local airports regarding helicopter operations and flight plans during project construction. Therefore, the project would not result in a safety hazard for people residing or working in the project area.

**g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?** ***No Impact***

If road closures are necessary, they will occur in accordance with regulations and will not impede emergency response. The project will not impair the implementation of or physically interfere with an adopted emergency response or evacuation plan; therefore, no impact will occur.

**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 power line work will be associated with the use of vehicles and equipment that could generate heat or sparks that could ignite dry vegetation and cause a fire during construction. An additional but less likely hazard during construction will be a break in the line, which could result in a fire. The project route passes through areas considered moderate-to high-risk for wildfire hazards. The Palermo Sub Line Segment and the northern portion of the South of Palermo Line pass through moderate and high fire-hazard severity zones to near the Butte/Yuba County border, and portions of the South of Palermo Line pass through moderate fire-hazard severity zones near Olivehurst. Fire prevention actions will be taken during construction to reduce the wildland fire risk, especially in the moderate and high fire-hazard severity zones. Implementing APM HAZ-3 will reduce impacts under this criterion to less-than-significant levels.

O&M fire risks will not change materially with completion of the project, and no new impacts associated with operations will occur.

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# 3.9 HYDROLOGY AND WATER QUALITY

## 3.9.1 INTRODUCTION

This section describes existing conditions and potential impacts on hydrological resources, water quality, and flood control as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts will be less than significant in these areas; the implementation of Applicant-Proposed Measures (APMs) described in Section 3.9.4 will further reduce less-than-significant impacts. The project's potential effects on hydrology, water quality, and flood control were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.9-1 and discussed in more detail in Section 3.9.4.

**Table 3.9-1: CEQA Checklist for Hydrology and Water Quality**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ |

## 3.9.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.9.2.1 Regulatory Background

#### *Federal*

*National Flood Insurance Program*

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on United States Army Corps of Engineers (USACE) studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program (NFIP) (42 United States Code [USC] Ch. 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains. FEMA allows nonresidential development in the floodplain; however, FEMA has criteria to "constrict the development of land which is exposed to flood damage where appropriate" and "guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in Title 44 Part 60 of the Code of Federal Regulations (CFR), enabling the FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

*Section 10 of the Rivers and Harbors Appropriation Act of 1899*

This federal law (33 USC Section 401, et seq.) makes it unlawful to obstruct or alter a navigable river or other navigable water of the United States. Construction, excavation, or deposition of materials in, over, or under such waters, or any work that would affect the course, location, condition, or capacity of those waters requires a Section 10 permit and approval from the USACE.

*Clean Water Act Section 404*

Section 404 of the federal Clean Water Act (33 USC Section 1251 et seq.) requires a permit from the USACE for the discharge of dredged or fill material into "waters of the United States," which include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands.

Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The limits of non-tidal waters extend to the Ordinary High-Water Mark or to the limit of adjacent wetlands. The US EPA also has authority over wetlands and may veto a USACE permit under Clean Water Act Section 404(c).

#### *Clean Water Act Section 303(d)*

Clean Water Act Section 303(d) (33 USC Section 1313) requires states, territories, and authorized Tribes to develop a list of waters within its boundaries that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law further requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality (SWRCB 2012). The RWQCBs and the SWRCB implement this federal regulation in California.

### ***State***

#### *Clean Water Act Section 401*

Clean Water Act Section 401 (33 USC Section 1251 et seq.) requires states to certify whether projects subject to federal permits meet state water quality standards. In California, the RWQCBs and SWRCB issue such certifications. The project is under the jurisdiction of the Central Valley RWQCB. If the project requires a USACE permit, a Water Quality Certification will be required.

#### *Clean Water Act Section 402*

Under Clean Water Act Section 402 (33 USC Section 1251 et seq.), the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the United States. The SWRCB administers the NPDES permit program in California. Projects that disturb 1 or more acres of soil are required to obtain coverage under the state NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A SWPPP must be developed and implemented for each project covered by the general permit. The SWPPP must include BMPs that are designed to reduce potential impacts on surface water quality during project construction and operation.

#### *Porter-Cologne Water Quality Control Act (California Water Code, Division 7)*

Under this state law, the SWRCB has authority over state waters and water quality. "Waters of the state" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050[e]). Examples include, but are not limited to rivers, streams, lakes, bays, marshes, mudflats, unvegetated and seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. The RWQCBs have local and regional authority. The Central Valley RWQCB has authority in the project area. The RWQCBs prepare and periodically update Basin Plans (water quality control plans), which establish:

- Beneficial uses of water designated for each protected water body.

- Water quality standards for both surface water and groundwater.
- Actions necessary to maintain these water quality standards.

Projects that will discharge waste to waters of the state must file a report of waste discharge with the appropriate RWQCB, if the discharge could affect the quality of waters of the state (Article 4, Section 13260). The RWQCB will issue waste discharge requirements or a waiver of the waste discharge requirements for the project. The requirements will implement any relevant water quality control plans that have been adopted, and must take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose (Article 4, Section 13263).

#### *Fish and Game Code Section 1602*

This section of California law protects the natural flow, bed, channel, and bank of any river, stream, or lake under the jurisdiction of the CDFW. Project plans must be submitted to CDFW that are sufficient to indicate the nature of a project for construction if the project would:

- Substantially divert or obstruct the natural flow of a jurisdictional river, street, or lake.
- Substantially change or use material from the bed, channel, or bank, or
- Result in the disposal or deposition of debris, waste, or other material containing crumbed, flaked, or ground pavement where it can flow into a river, stream, or lake.

For projects substantially impacting the bed, bank, or flow of a water under CDFW jurisdiction, applicants must submit a Notification of Lake or Streambed Alteration to the CDFW so that the department may issue an agreement if staff determines that the activity may substantially adversely affect fish and wildlife resources.

### *Local*

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. PG&E will secure ministerial permits, as required.

### 3.9.2.2 Methodology

Information regarding water resources and hydrology in the project area was obtained and potential impacts on hydrology and water quality as a result of the project were evaluated by reviewing water quality studies, water management plans, and relevant information from federal, state, and local water resource agencies with jurisdiction in the project area. The following specific sources of information were consulted:

- Dam inundation hazard zones maps were obtained from the general plans for Butte, Yuba, and Sutter Counties.

- Groundwater conditions and hydrogeological information relevant to groundwater depth and flow direction, water use, and water quality were obtained from groundwater management plans for Butte, Yuba, and Sutter Counties, and urban water management plans for the cities of Oroville, Yuba City, and Marysville.

- The Basin Plan for the Sacramento and San Joaquin River basins was reviewed for surface water and groundwater basin information, beneficial uses, and water quality.
- FEMA maps were referenced to identify flood zones in proximity to the project area.
- United States Geological Survey (USGS) 7.5-minute series quadrangle maps were reviewed for major water features and drainage patterns.
- California Department of Water Resources (DWR) Levee Flood Protection Zone (LFPZ) online maps for the Sacramento River (and vicinity) were reviewed for project levee failure flood hazard zones along the project alignment.
- The DWR Groundwater Information Center website was reviewed for information regarding groundwater conditions along the project route, including depth to groundwater and groundwater flow direction.
- The USGS National Hydrography Dataset was reviewed for maps and information regarding surface water features (e.g., lakes, ponds, streams, canals, dams, and rivers) along the project alignment.
- The USFWS National Wetland Survey was reviewed for occurrence of mapped wetlands along the alignment with respect to potential water quality impacts associated with construction and operations.
- Local climate information and data were obtained from online sources including the University of California at Davis (UC Davis) and the Western Regional Climate Center (WRCC).

Biologists delineated waters of the United States, including wetlands, and the results are discussed in Section 3.4, Biological Resources.

## 3.9.3 ENVIRONMENTAL SETTING

### 3.9.3.1 Regional Setting

The project area lies within Butte, Yuba, and Sutter Counties near the eastern margin of the Sacramento Valley, which represents the northern third of California's Central Valley. The Central Valley is a north-northwest trending valley situated between the Coast Ranges to the west and the Sierra Nevada and Cascade ranges to the east, and extends for approximately 450 miles from low-lying hills near Red Bluff in the north to the San Emigdio and Tehachapi Mountains near Bakersfield in the south. The Sacramento Valley is bounded on the northeast by a volcanic plateau of the Cascade Range, on the east by the Sierra Nevada, and on the west by the northern Coast Ranges. Elevations in the Sacramento Valley range from slightly below mean sea level near the Sacramento-San Joaquin Delta to the south, to approximately 400 feet amsl at its northern end near Red Bluff.

The northernmost portion of the project area (including the Palermo Sub Line Segment and the northern end of the South of Palermo Line) occurs in the transitional zone between the

Sacramento Valley subregion and the northern Sierra Nevada foothills subregion. The topography in the project area varies from relatively flat to gently sloping foothills with elevations ranging from approximately 20 feet to 375 feet amsl. Agricultural lands, urban areas, and rural residences are well represented within and immediately adjacent to the project area; however, the project area also contains relatively undeveloped areas that support natural vegetation and wetlands.

Figure 3.9-1 shows the project area, county and major municipal boundaries, and major surface water features crossed by the project route. The Sacramento Valley encompasses the southern portion of the Sacramento River Hydrologic Region, which drains southward to the Sacramento-San Joaquin Delta and eventually discharges to San Francisco Bay. The Sacramento River Hydrologic Region covers approximately 27,200 square miles. The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa Counties. The Sacramento River is the longest river system in California; its major tributaries are the Pit, Feather, Yuba, Bear, and American Rivers.

Municipal and agricultural water supplies in the region rely on a combination of surface water diversions and groundwater pumping (Yuba City 2011; CWSC-MD 2011; BCDWR 2004). The project area is in the Feather River drainage area, which includes the Feather River and its principal tributaries (the Yuba and Bear Rivers). Specific watersheds traversed by the project area include the Honcut Headwaters-Lower Feather watershed in Butte County and most of Yuba County, the Upper Yuba Watershed near the Yuba River in central Yuba County, and the Upper Coon-Upper Auburn Watershed in Sutter County. Drainage in the region surrounding the project area flows southwesterly from the Sierra Nevada foothills toward the Sacramento River, located approximately 10 to 20 miles west of the project area. Drainage from the project area discharges to the Feather, Yuba, or Bear Rivers, by overland flow, tributary swales, or perennial streams. The Feather River flows in a generally southward direction between the project area and the Sutter Buttes, which are approximately 4 miles west of the project area. The Yuba and Bear Rivers flow westward from the foothills, across the central and southern portions of the South of Palermo Line, respectively, and discharge to the Feather River. The Feather River eventually merges with the Sacramento River, approximately 10 miles south of the project area.

Groundwater in Butte, Yuba, and Sutter Counties occurs in recent to later Pliocene age continental sedimentary deposits of the Sacramento Valley Groundwater Basin. The natural groundwater flow is generally westward from the Sierra Nevada and eastward from the Coast Ranges toward the valley axis, and southward toward the Sacramento-San Joaquin Delta; however, groundwater extraction has altered the natural groundwater flow patterns in some locations. In general, groundwater occurs under unconfined to semi-confined conditions near the valley margins and transitions to a system of shallow unconfined aquifers underlain by deeper confined aquifers in the central portion of the valley (BCDWR 2004).

#### 3.9.3.2 Climate

The climate in California's Central Valley, including the Sacramento Valley and the project area, is Mediterranean, characterized by hot, dry summers and cool, wet winters. Most rain occurs in the winter, with winter precipitation primarily the result of cold fronts that move across the

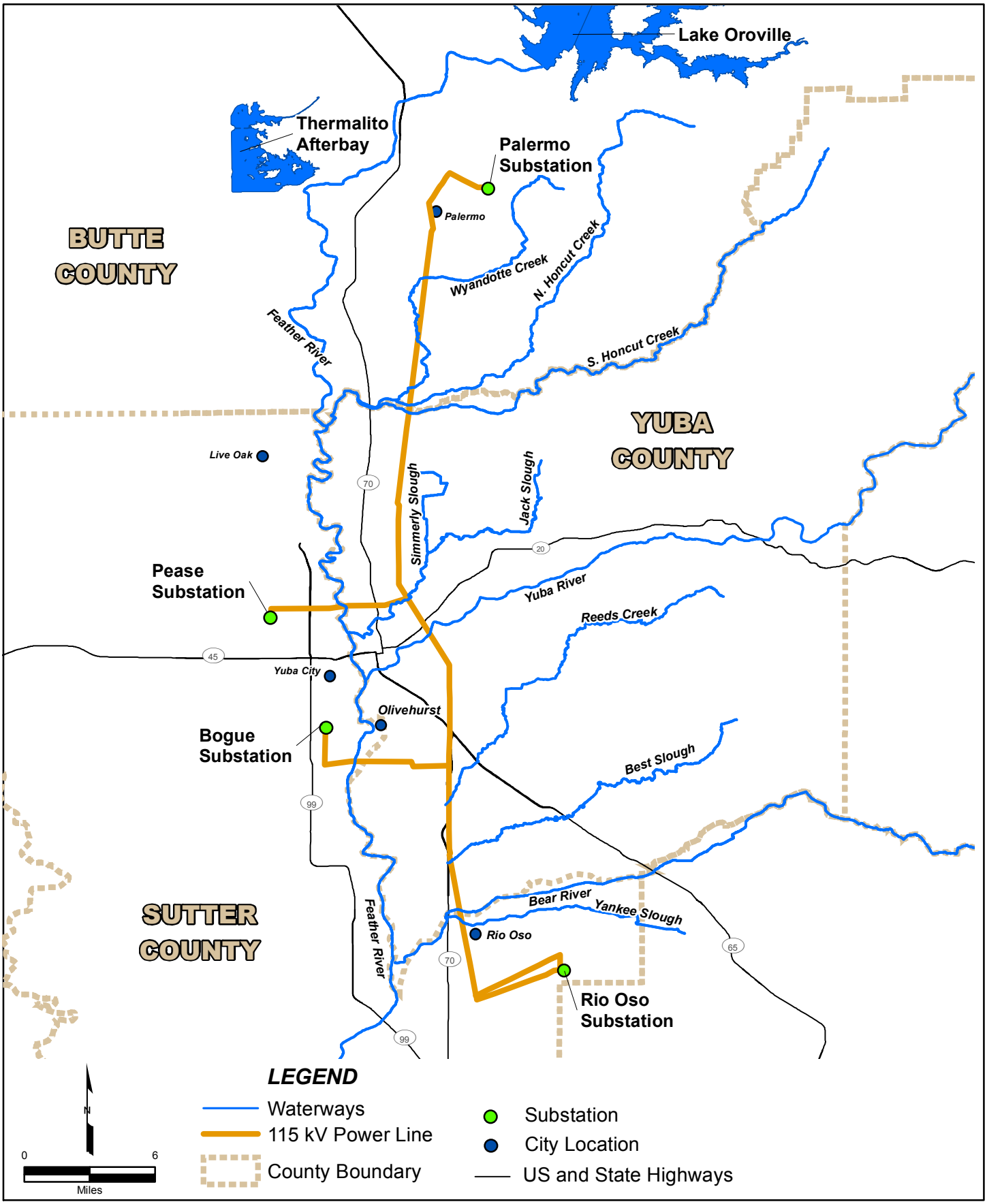



**Figure 3.9.1**
**Major Surface Water Features in the Project Area**
South of Palermo 115kV Power Line Reinforcement Project

Pacific Northwest and northern California (UC Davis 2015). The average annual precipitation at the Marysville Climate Station between 1948 and 2005 was 21.59 inches (WRCC 2015). Average daytime high temperatures ranged from approximately 54 to 61°F in the winter to 90 to 96°F in the summer. Nighttime lows ranged from approximately 38 to 42°F in the winter to 57 to 62°F in the summer.

#### 3.9.3.3 Surface Water

Surface water drainage patterns in the region surrounding the project area are shown on Figure 3.9-1. The project area includes portions of Butte, Yuba, and Sutter Counties and crosses three major rivers (Feather, Yuba, and Bear Rivers) and several of their larger tributaries. In addition to the streams crossed, major surface water bodies in the vicinity are Lake Oroville, Thermalito Afterbay, and the Yuba Bypass. The South of Palermo Line surface water evaluation is discussed by county from northern terminus (Palermo Substation) southward to southern terminus (Rio Oso Substation). Surface water bodies crossed by the project route are discussed by county from north to south along the project route. See Section 3.4, Biological Resources, for a description of wetland features traversed by the project alignment.

##### *Butte County*

The northern portion of the project area, including the northern end of the South of Palermo Line and the Palermo Sub Line Segment, are located approximately 3 miles southeast of central Oroville in Butte County. The project route in Butte County would cross surface water features that include Wyman Ravine Creek, Wyandotte Creek, North Honcut Creek, and South Honcut Creek. Each is discussed below.

- Wyman Ravine Creek flows southeast and is crossed twice by the Palermo Sub Line Segment.
- Wyandotte Creek flows from east to west and is crossed by the Palermo Sub Line Segment several times between Palermo and its confluence with North Honcut Creek.
- North and South Honcut Creek flow from east to west and are crossed several times by the Palermo Sub Line Segment near their confluence with Honcut Creek. (The border between Butte and Yuba Counties parallels South Honcut Creek.)
- Several unnamed perennial streams, tributary to the Feather River, are crossed by the South of Palermo Line west of Palermo.

The following waterbodies are included in the Clean Water Act Section 303(d) list of impaired waterbodies (SWRCB 2010):

- The Feather River is listed as impaired for mercury and chlorpyrifos.
- Honcut Creek is listed as impaired for dissolved oxygen.

As North Honcut Creek is not listed in the Basin Plan for the Sacramento and San Joaquin River basins as a water body separate from Honcut Creek, it assumed to be part of the impairment listing for Honcut Creek. Wyman and Wyandotte Creeks are not listed for any impairments.

#### *Yuba County*

The major surface water features that the project route crosses in Yuba County include Simmerly Slough, Jack Slough, Yuba River, Reeds Creek, Best Slough, and the Feather River. In general, these streams and rivers flow from east to west and are tributary to the Feather River, which flows north to south.

- The South of Palermo Line crosses Simmerly Slough and Jack Slough north of Marysville and the Yuba River.
- The South of Palermo Line crosses the Yuba River near Marysville.
- The South of Palermo Line crosses Reeds Creek south of Olivehurst and the Yuba River.
- The South of Palermo Line crosses Best Slough south of Olivehurst.
- The Pease Sub Line Segment and Bogue Sub Line Segment cross the Feather River north and south of Marysville, respectively; the Feather represents the county line between Yuba and Sutter Counties.

The following waterbodies are included on the Clean Water Act Section 303(d) list of impaired water bodies (SWRCB 2010):

- Simmerly Creek is listed for unknown toxicity.
- Jack Slough is listed for diazinon (pesticide) and unknown toxicity.
- Yuba River is listed for mercury.
- Feather River is listed for mercury, chlorpyrifos (pesticide), polychlorinated biphenyls (PCBs), and unknown toxicity.

#### *Sutter County*

The Pease Sub Line Segment and the Bogue Sub Line Segment cross the Feather River from Yuba County into Sutter County. In addition, the South of Palermo Line crosses the Bear River into Sutter County and then crosses Yankee Slough.

The following waterbodies in Sutter County are included on the Clean Water Act Section 303(d) list of impaired water bodies (SWRCB 2010):

- Bear River is listed for chlorpyrifos (pesticide), copper, diazinon, and mercury below Camp Far West reservoir (approximately 14 miles east of the South of Palermo Line).
- Yankee Slough is listed for chlorpyrifos and unknown toxicity.

### 3.9.3.4 Groundwater

The project area overlies four groundwater subbasins within the Sacramento Valley Groundwater Basin: the North Yuba Subbasin, South Yuba Subbasin, Sutter Subbasin, and North American Subbasin. The following sections discuss groundwater conditions in these subbasins.

### *North Yuba Subbasin*

The North Yuba Subbasin is the northernmost groundwater subbasin crossed by the project alignment. This subbasin has a surface area of approximately 50,000 acres and is bounded on its north and west side by the Feather River (DWR 2003), on the east by bedrock of the Sierra Nevada foothills, and on the south by the Yuba River. The storage capacity of the subbasin is estimated at 620,000 acre-feet (DWR 2006a), and groundwater occurs under both confined and unconfined conditions. Water-bearing formations in the subbasin consist of continental deposits of recent to Late Tertiary age. Unconfined conditions are generally present in the surficial Quaternary deposits and the Pliocene deposits that are exposed at the surface. This includes the Pliocene Laguna Formation, which is the most extensive water-bearing unit in the subbasin. Confined groundwater conditions usually exist at depths of 200 feet or more. The Pliocene Tuscan forms the major confined aquifer system in the subbasin (BCDWR 2004).

The depth to groundwater beneath the project area in the North Yuba Subbasin varies from more than 100 feet below ground surface along the northern portion of the Palermo Sub Line Segment, to approximately 40 feet below ground surface near southern boundary of Butte County at North Honcut Creek. Groundwater flow in the region surrounding the project area is generally toward the south to southwest (BCDWR 2004; DWR 2015a).

The North Yuba Subbasin has generally good groundwater quality; however long-term trends indicate increasing total dissolved solids concentrations (Yuba County Water Agency [YCWA] 2010). Total dissolved solids concentrations are generally below 500 mg/L.

### *South Yuba Subbasin*

The South Yuba Subbasin is located immediately south of the North Yuba Subbasin, and shares the Yuba River as its northern boundary. It is bounded to the east by the Feather River, to the west by bedrock of the Sierra Nevada, and to the south by the Bear River. The subbasin has an estimated storage capacity of 1,090,000 acre-feet. The subbasin aquifer system includes Quaternary to Late Tertiary age deposits, and the Pliocene Laguna Formation is the most extensive water-bearing unit, although the Pliocene Mehrten Formation also provides significant water. Along the Yuba and Bear Rivers are extensive dredge tailings, which include highly permeable coarse gravel deposits up to 125 feet thick. In addition, Holocene stream channel and flood plain deposits can be very productive, with yields in the range of 2,000 to 4,000 gallons per minute (DWR 2006b).

Groundwater flow in the South Yuba Subbasin near the project area is generally toward the southwest, away from the Sierra Nevada, with several cones of depression in areas of more intensive groundwater pumping. Depth to groundwater beneath the South of Palermo Line in this subbasin varies from approximately 20 to 60 feet below ground surface, and from approximately 20 to 30 feet below ground surface beneath the Pease Sub Line Segment and the Bogue Sub Line Segment (YCWA 2010; DWR 2015a).

Water quality in the South Yuba Subbasins is generally good; total dissolved solids concentrations are generally below 500 milligrams per liter (DWR 2006a; DWR 2006b). However, long-term trends indicate increasing total dissolved solids concentrations (YCWA 2010).

#### *North American Subbasin (Basin Number 5-21.64)*

The North American Subbasin is located adjacent and to the south of the South Yuba Subbasin and shares the Bear River as its northern boundary (DWR 2003). It is bounded to the east by the Feather and Sacramento Rivers, to the west by bedrock of the Sierra Nevada, and to the south by the American River. The subbasin has an estimated storage capacity of 4.9 million acre-feet. The water-bearing formations in the subbasin consist of unconsolidated continental deposits of Quaternary to Late Tertiary age (DWR 2006d). Productive water-bearing formations include the Pliocene Mehrten Formation and overlying Quaternary alluvial deposits.

Groundwater flow in the North American Subbasin near the project area in northern Sutter County is south to southwestward, toward a cone of depression northeast of Nicolaus. The depth to groundwater beneath the project area in this subbasin varies from approximately 40 to 60 feet below ground surface (DWR 2015a).

Groundwater quality in the North American Subbasin varies from good to marginal.

#### *Sutter Subbasin (Basin Number 5-21.62)*

The Sutter Subbasin is located west of the South Yuba and North American Subbasins and shares the Feather River with these subbasins as its eastern boundary (DWR 2003). It is bounded to the west by the Sacramento River and to the north by the Sutter Buttes. The Sutter Subbasin has an estimated storage capacity of 5 million acre-feet. Principal water-bearing units include alluvial deposits of Quaternary and Pliocene age.

The depth to groundwater beneath the Pease Sub Line Segment and Bogue Sub Line Segment in this subbasin varies from approximately 20 to 35 feet below ground surface. The groundwater flow direction in the area surrounding the Pease Sub Line Segment and Bogue Sub Line Segment varies and is generally toward a trough located west of Feather River (DWR 2015a).

Groundwater quality in the Sutter Subbasin varies from good to poor, with identified impairments for total dissolved solids and chemical elements that exceed drinking water quality and aesthetic standards (DWR 2006c).

### 3.9.3.5 Flood Potential

A floodplain is a geographic area of relatively level land that is occasionally subject to inundation by surface water from rivers or streams that lie within the floodplain. A “100-year flood” refers to the maximum level of water that is expected to inundate a floodplain on average once every 100 years (i.e., a 1 percent chance of being inundated per year). FEMA estimates the boundaries for 100-year floodplains, referred to as “flood hazard areas,” and produces Flood Insurance Rate Maps (FIRMs) that define the 100-year floodplain boundaries. Typically, where detailed floodplain studies have not been conducted, FEMA designates 100-year floodplains as “Zone A” on the FIRMs.

Similar to the FEMA-designated flood hazard areas, the California State Office of Emergency Services and DWR require that dam owners identify the potential magnitude of flooding, or the dam inundation area, that would occur in the case of a dam failure.

Mapped flood hazard and dam inundation areas along the project area are discussed below by county, from north to south.

#### *Butte County*

A small portion of the Palermo Sub Line Segment lies within a 100-year floodplain associated with Wyman Ravine north of Palermo. In addition, a small portion of the northern end of the South of Palermo Line and the southern portion of the South of Palermo Line in Butte County lie within 100-year floodplains.

The project route in Butte County lies within dam inundation areas for the following dams along the Feather River and Honcut Creek: Lake Oroville Dam, Lake Almanor Dam, and Bidwell Bar Dam (Butte County 2010). Many of these inundation areas overlap.

#### *Yuba County*

The South of Palermo Line between the northern county boundary and Linda lies within a 100-year floodplain. Between Linda and the southern county boundary at the Bear River, the South of Palermo Line lies within a Reduced Flood Risk area, which means it is protected by levees. The Please Sub Line Segment lies within a 100-year floodplain from the South of Palermo Line westward to the county boundary at the Feather River. The Bogue Sub Line Segment lies within a Reduced Flood Risk area from the South of Palermo Line westward to the levee on the east side of the Feather River, and from there westward lies in a 100-year floodplain to the county boundary at the Feather River.

The project route in Yuba County lies within the dam inundation areas for the following dams along the Yuba, Bear, and Feather Rivers: Lake Oroville Dam, Lake Almanor, Bidwell Bar, Scott's Flat, Virginia Ranch Dam, Lake Englebright Dam, Camp Far West Reservoir Dam, Merle-Collins Reservoir Dam, and New Bullard (Yuba County 2011). Many of these inundation areas overlap.

#### *Sutter County*

The Pease Sub Line Segment west of the Feather River does not lie in a floodplain hazard area. The Bogue Sub Line Segment lies within a 100-year flood plain zone (Zone A) until it turns north near Railroad Avenue in Sutter County. From this point to Bogue Substation, the Bogue Sub Line Segment lies in a 500-year flood hazard zone (Zone X), except for a short crossing of a 100-year flood hazard zone (Zone A) just south of the intersection of Steward Road and Railroad Avenue.

The project route in Yuba County lies within dam inundation areas for the following dams along the Bear and Feather Rivers: Lake Oroville Dam, Lake Almanor, Camp Far West Reservoir Dam, and Thermalito Afterbay Dam. Many of these inundation areas overlap.

### 3.9.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for hydrology and water quality impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational hydrology and water quality impacts.

### 3.9.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to hydrology and water quality were evaluated for each of the criteria listed in Table 3.9-1, as discussed in Section 3.9.4.3.

### 3.9.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

***APM HYDRO-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP)***

PG&E will prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP will include a list of BMPs to be implemented in areas with potential to drain to any water body in Butte, Yuba, or Sutter counties. BMPs to be part of the project-specific SWPPP may include, but are not limited to, the following control measures.

- Implementing 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) to control erosion from disturbed areas.

- Protecting drainage facilities in downstream off-site areas from sediment using BMPs acceptable to Butte, Sutter, and Yuba counties, and the Central Valley RWQCB.

- Protecting the quality of surface water from non-stormwater discharges such as equipment leaks, hazardous materials spills, and discharge of groundwater from dewatering operations.

- Restoring disturbed areas, after project construction is completed, unless otherwise requested by the landowner in agricultural land use areas.

Requirements of the SWPPP would be coordinated with the requirements of any Section 401 Water Quality Certification issued for the project under the Clean Water Act and/or Streambed Alteration Agreement issued under Fish and Game Code Section 1602, as applicable. These permits are discussed in additional detail in Section 3.4, Biological Resources.

APM BIO-12, discussed in Chapter 3.4, Biological Resources, provides general protection measures for wetlands and other waters, which will also serve to reduce water quality impacts associated with the project.

#### 3.9.4.3 Potential Impacts

Project impacts related to hydrology and water quality were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential project impacts from the construction phase and the operation and maintenance (O&M) phase. For impacts on federally protected wetlands and other sensitive natural communities, refer to Section 3.4, Biological Resources.

The project will replace existing conductor with new aluminum cable (a process referred to as reconductoring), modify existing lattice steel towers, and replace existing lattice steel towers and lattice steel poles along approximately 59.5 miles of PG&E's existing power lines within the Palermo–Rio Oso 115 kV power line system. To support the new conductor, the South of Palermo Line and Bogue Sub Line Segment will require new support structures. Existing lattice steel towers within these segments will be replaced with TSPs, hybrid poles, or LSPs. The Palermo Sub Line Segment, Pease Sub Line Segment, and Rio Oso Sub Line Segment Loop will generally only require tower modifications to support the new conductor.

The new pole foundations are estimated to be buried below ground to varying depths, with the deepest foundations extending approximately 35 feet below ground. In addition, temporary construction staging, laydown, tensioning, and helicopter landing areas will be established, and temporary construction access roads will be built. Following completion of construction, disturbed areas will be restored in accordance with APM HYDRO-1 and other applicable project APMs.

In order to replace conductors in some locations, temporary guard structures will be built to prevent conductors from falling to the ground, and are estimated to be installed approximately 7 feet below ground surface. In addition, temporary snub poles that typically extend approximately 10-feet below ground surface will be installed. All temporary guard structures will be removed following completion of construction and disturbed land will be restored in accordance with APM HYDRO-1.

Construction activities will be limited to the immediate vicinity of tower foundations and temporary construction support areas, including staging and laydown areas, access roads, pull pads, and helicopter landing zones. Construction on structures will be limited to replacement, modification or removal of existing structures; therefore the potential for permanent effects on drainage will be limited to the construction period.

The O&M activities required for the upgraded power line will not change from those currently required for the existing system; thus, no operation-related impacts will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project violate any water quality standards or waste discharge requirements?** ***Less than Significant***

Construction-related impacts on water quality could result from the use of fuels or other hazardous materials to support construction activities near water bodies, or from uncontrolled discharge of groundwater displaced during foundation construction in some areas. Vegetation may need to be cleared or mowed to improve existing access roads or establish overland access routes, work areas, pull sites, or landing zones for construction. Minor grading also may be needed to improve work areas, establish construction laydown and staging areas, pull sites, helicopter landing pads, and temporary access roads. In some cases, wetlands and small streams may need to be crossed to access work areas, and this work would be performed in accordance with the requirements of federal and state permits under Clean Water Act Sections 404 and 401, the Porter-Cologne Act, and the Fish and Game Code Section 1602, as applicable. With these activities, the project has the potential to temporarily adversely affect water quality as a result of erosion and subsequent sedimentation, and the increased use of off-road vehicles. In general, these activities will be dispersed over a broad area along the project alignment, and will be limited in scope at any given location.

Based on the risk that specific construction activities pose to water quality based on soil characteristics, slope, and the construction schedule, PG&E will develop a SWPPP that addresses potential water quality concerns, as described in APM HYDRO-1. The SWPPP will specify measures for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, non-stormwater discharges, and the presence of other pollutants. These measures will be implemented and monitored throughout the project by a qualified stormwater pollution prevention plan practitioner.

During construction, PG&E will minimize or avoid impacts on wetlands and other waters, which will help to minimize impacts to water quality. The wetland protection measures are described in APM BIO-12 and further discussed in Section 3.4, Biological Resources.

There is potential for accidental releases of hazardous materials that are used during construction, such as diesel fuel, hydraulic fluid, or oils and grease. This potential impact will be avoided and minimized by implementing BMPs adopted to control non-stormwater discharges under APM HYDRO-1 and by APM HAZ-1, which is discussed in Section 3.8, Hazards and Hazardous Materials.

Accordingly, the project would not violate any water quality standards or waste discharge requirements, and project construction impacts on water quality will 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?** ***Less than Significant***

Project construction water demand will be short term and relatively limited. Water trucks, typically with a capacity of 4,000 gallons, will support project construction activities and dust suppression. Construction water may be obtained from local municipal sources, trucked in by a water supply vendor, or derived from local wells. Municipal water sources in the project area are supplied from a combination of surface and groundwater sources. Water will be needed for

construction and dust suppression only temporarily and in relatively small amounts, based on the limited and widely dispersed scale of earth-disturbing activities. As such, project water demand is small compared to the amount of groundwater in storage, and would not change the currently forecasted municipal groundwater demand in urban water management plans for the municipalities from which water will be obtained for the project. Because foundation boreholes/excavations in some locations may intersect shallow groundwater levels, incidental dewatering or displacement of groundwater may occur during drilling or excavation of pole foundations; however, the amount of groundwater removed or displaced would be very small. For these reasons, the project impact on groundwater supplies will be less than significant.

The project does not involve construction of any new impervious surfaces, and temporary construction support areas will be restored after construction is complete. Accordingly, the project will not substantially interfere with groundwater recharge, and the project's impact on groundwater recharge will be less than significant.

**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 sedimentation on- or off-site)? *Less than Significant***

The project has been designed to minimize impacts on waterways, as well as to avoid substantially altering the drainage patterns in the project work areas, or altering the course of a stream or river. Crossing wetlands or small streams may be necessary to access some work locations, and this work would be performed in accordance with the requirements of federal and state permits under Clean Water Act Sections 404 and 401, the Porter-Cologne Act, and the Fish and Game Code Section 1602, as applicable. Minor temporary grading will be performed in select locations to improve project access or establish work areas to accommodate equipment; however, this grading will be limited in scope and will not substantially alter site drainage or result in substantially increased erosion or siltation. Work areas will be restored after completion of work. Accordingly, project impacts on existing drainage patterns, stream or river courses, erosion, or sedimentation will be less than significant.

To further reduce this impact during construction, appropriate BMPs will be implemented in accordance with the SWPPP, as described in APM HYDRO-1. In addition, after project construction is completed, disturbed areas will be restored unless otherwise requested by the landowner in agricultural land use areas.

**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***

The project has been designed to minimize impacts on waterways, as well as to avoid substantially altering the drainage patterns in the project work areas, or altering the course of a stream or river. Minor temporary grading necessary to support project work will be limited in scope and will not substantially alter site drainage or result in increased surface runoff. The project will not involve the creation of impervious surfaces or other structures that could increase surface water runoff rates. Crossing wetlands or small streams may be necessary to access some work locations, and this work would be performed in accordance with the requirements of

federal and state regulatory requirements, as discussed above. In some locations, the replacement or installation of culverts may be necessary within drainage channels or small creeks to accommodate access to work locations. After the completion of construction, work areas will be restored (see APM HYDRO-1). Accordingly, the potential for the project to change existing drainage patterns or alter the course of a stream or river in a way that substantially increases the rate of surface runoff and results in flooding will be less than significant.

**e) Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? *Less than Significant***

Construction activities include the removal and replacement of existing poles and towers. The removal and replacement of poles and towers are not anticipated to substantially alter existing drainage patterns of the site or area. Construction impacts include temporary ground disturbance and potential small scale, temporary changes in the 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 significantly altered.

Much of the project alignment is located within rural or undeveloped parcels where municipal or otherwise-developed stormwater collection systems are not established. The stormwater conveyance systems that are present generally consist of open stormwater ditches and waterways along the route. The project will not increase the amount of impervious surfaces, nor will it substantially modify the grade or runoff conditions along the project route; therefore, the project will not create or contribute additional runoff that could exceed the capacity of existing stormwater systems. To further reduce the potential impacts during construction, appropriate BMPs will be implemented in accordance with the SWPPP, including BMPs that will address potential non-stormwater discharges and sources of polluted runoff such as spills, leaks, and groundwater displaced during foundation construction (APM HYDRO-1). Accordingly, the impact will be less than significant.

**f) Would the project otherwise substantially degrade water quality? *No Impact***

No additional impacts on water quality beyond those previously described are anticipated. The project would not substantially degrade water quality and no impact will occur.

**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***

The project will not involve housing construction; therefore, no impact will occur.

**h) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows? *Less than Significant***

Much of the project area is located within FEMA-designated 100-year or 500-year flood hazard areas, and includes existing towers, poles, and access road segments. The project will consist of replacing some existing lattice steel towers and LSPs with new TSPs, hybrid poles, LSPs, or lattice steel towers, modifying other existing towers, and reconductoring. Temporary construction support facilities will be built to support this work, and will include laydown and

support areas, helicopter landing pads, and additional access roads. After completion of the project, the temporary facilities will be removed and their locations restored, except for areas that are stabilized and retained at the request of the landowner. (The drainage pattern in these areas will not be substantially different from the pre-project condition). Because the new poles, towers, and access roads would not be materially different than the existing system, no impedance or redirection of flood flows are anticipated as a result of the project. In addition, temporary work areas will not impede or redirect flood flows. Therefore, the project impact on flood flows will be 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*? No Impact***

Much of the project area lies within FEMA-designated 100-year or 500-year flood hazard areas, or within the dam failure inundation hazard areas of dams on the Feather, Yuba, and Bear Rivers. In addition, the project area passes through Levee Flood Protection Zones in portions of Yuba and Sutter Counties. These areas include existing towers and poles that will be replaced or modified prior to reconductoring. Existing access road segments used during construction would not be substantially modified. Temporary laydown and support areas, helicopter landing pads, and access roads used during construction will be removed and their locations restored after project completion, except for areas that are stabilized and retained at the request of the landowner. (The drainage pattern in these areas will not be substantially different from the pre-project condition). The project does not include construction of any habitable structures in a flood or inundation hazard area.

The project will not affect existing levees, dams, or other flood control mechanisms, nor will it affect the potential for significant risk of loss, injury, or death resulting from flooding. The project will not include work that could jeopardize the function or safety of existing dams, levees, or other flood control devices. Therefore, no impact will occur.

**j) Would the project cause inundation by seiche, tsunami, or mudflow? *No Impact***

Given the project's distance from any substantial open bodies of water, the project will not expose construction workers, O&M personnel, or structures to hazards associated with tsunami or seiche. The project site is located on relatively level terrain and although the project route intersects several canals, rivers, and streams, these water bodies are not subject to inundation by mudflows. Project construction will not result in the construction of slopes or interfere with or affect these drainages. Therefore, no impact will occur.

## 3.9.5 REFERENCES

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# 3.10 LAND USE AND PLANNING

## 3.10.1 INTRODUCTION

This section describes existing land use in the vicinity of the project and assesses potential project-related impacts on land use and planning, including an analysis of project compatibility with land use and/or habitat plans. The analysis concludes that no impacts related to land use and planning will occur as a result of construction, operation, and maintenance of the project and no Applicant-Proposed Measure(s) (APMs) are needed. The project's potential effects on land use and planning were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.10-1 and discussed in more detail in Section 3.10.4.

**Table 3.10-1: CEQA Checklist for Land Use and Planning**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☐ | ☒ |

## 3.10.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.10.2.1 Regulatory Background

#### *Federal*

No federal regulations related to land use and planning are applicable to the project.

#### *State*

*California Public Utilities Commission*

The CPUC has exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of electric transmission facilities, pursuant to Article XII, Section 8 of the California Constitution. The CPUC is the Lead Agency for CEQA review for this project and has authority over the discretionary project approval.

#### *Local*

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local land use and zoning regulations or discretionary permits. This

section identifies local land use plans and regulations for informational purposes and to assist with CEQA review.

As shown on Figures 3.10-1, 3.10-2, and 3.10-3, General Plan Land Use and Zoning Designations, the project area is located within Butte, Yuba, and Sutter Counties and the cities of Marysville, Oroville and Yuba City. The figures use a 1-mile buffer around the project area for context. Local plans, codes, and ordinances were evaluated and are discussed in Sections 3.10.3.2 and 3.10.3.3.

Although PG&E is not subject to local discretionary permitting, ministerial permits will be secured, as required.

#### 3.10.2.2 Methodology

Analysis of land use and planning included a review of the following plans and policies:

- Butte County General Plan
- Butte County Zoning Ordinance
- City of Oroville General Plan
- City of Marysville General Plan
- Yuba City General Plan
- Yuba County General Plan
- Yuba County Zoning Code
- Plumas Lake Specific Plan
- Sutter County General Plan
- Sutter County Development Code

In addition, the California Department of Parks and Recreation website, Feather River Recreation and Park District website, the Peach Tree Golf and Country Club website, various school district websites, and aerial maps were used to identify schools, parks, and recreational facilities within 0.5 mile of the project. See Section 3.15, Recreation, for additional information about parks and recreational facilities in the project area.

### 3.10.3 ENVIRONMENTAL SETTING

#### 3.10.3.1 Regional Setting

The project spans portions of Butte, Yuba, and Sutter Counties and is located between the communities of Oroville to the north and East Nicolaus to the south. Modifications will be made to power lines near the communities of Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus. Prominent geographic features that intersect the project area include the Feather River, Yuba River, and numerous highways including SR 99, SR 70, SR 65, and SR 20.

#### 3.10.3.2 Local Land Use Setting (Existing Land Use)

Existing land uses in the project area are shown on Figures 3.10-1, 3.10-2, and 3.10-3. Agriculture, primarily rice fields and orchards, is the predominant land use throughout much of the project area, with low-density rural residential uses and small agricultural operations. In the

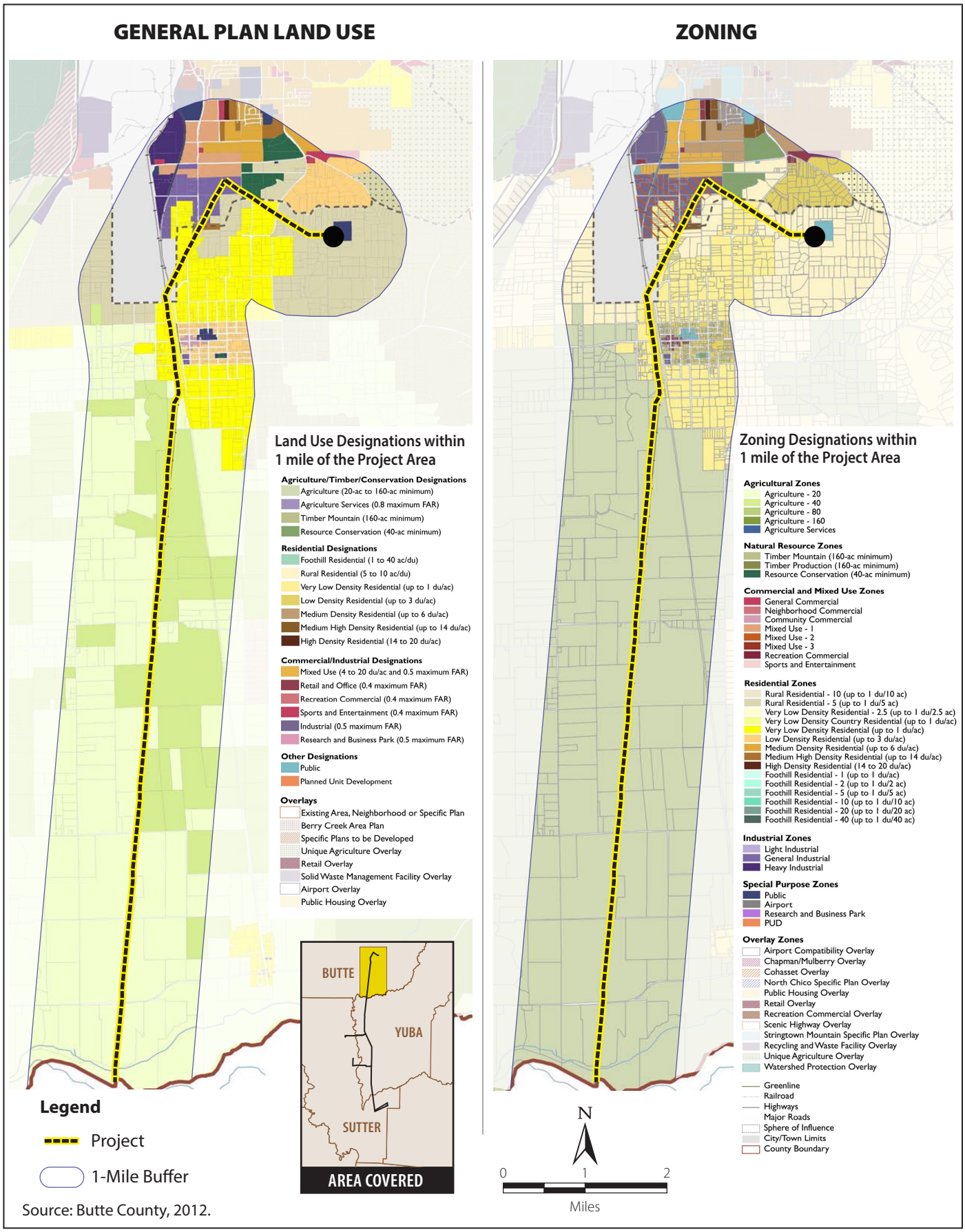
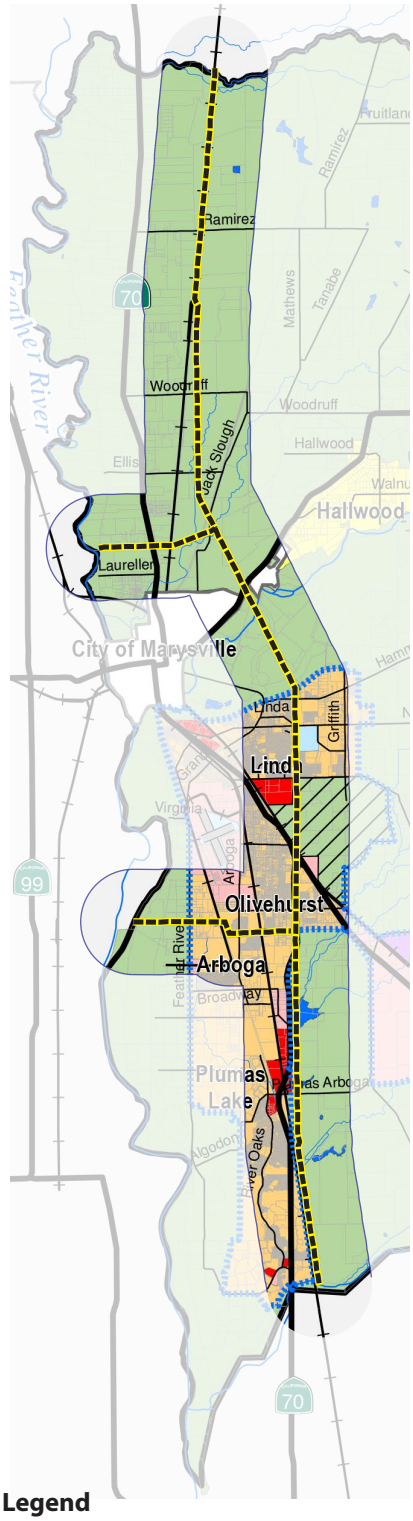



**Figure 3.10-1**
**Butte County General Plan Land Use and Zoning Designations**
South of Palermo 115 kV Power Line Reinforcement Project

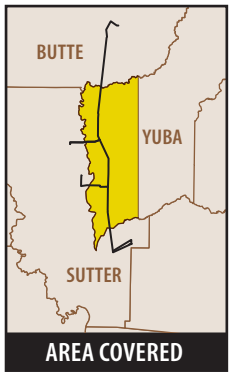
## GENERAL PLAN LAND USE

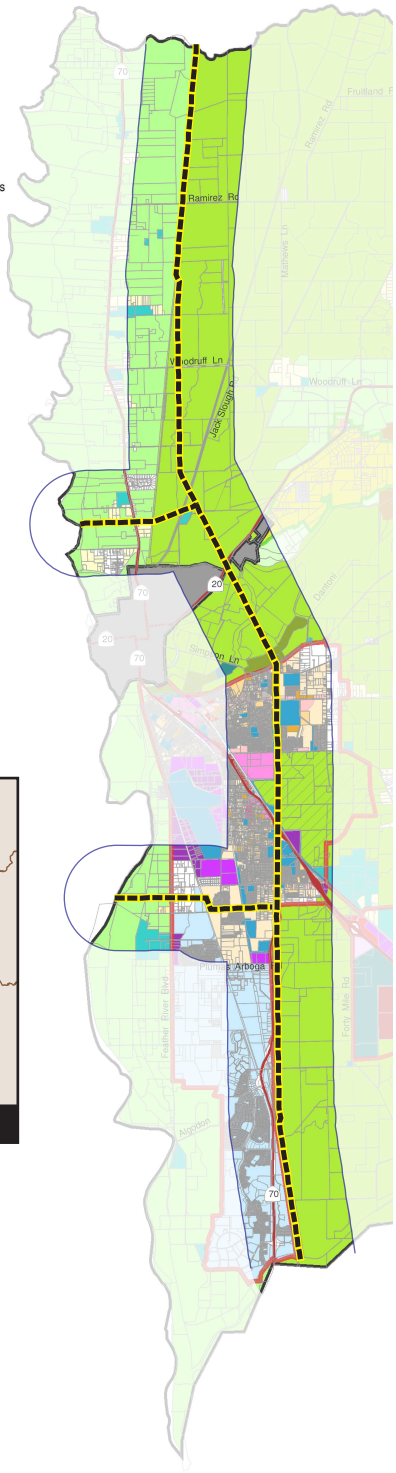



## ZONING

Zoning Designations within 1 mile of the Project Area

- City Limits
- Valley Growth Boundary
- Rural Community
- AE-80 - Exclusive Agricultural District 80 Acres
- AE-40 - Exclusive Agricultural District 40 Acres
- AR-20 - Agricultural/Residential District 20 Acres
- RE -Residential Estate District
- AR-10 - Agricultural/Rural Residential District 10 Acres
- AR-5 - Agricultural/Rural Residential District 5 Acres
- RR-10 - Rural Residential District 10 Acres
- RR-5 - Rural Residential District 5 Acres
- RS - Single Family Residential District
- RM - Medium Density Residential District
- RH - High Density Residential District
- NMX - Neighborhood Mixed Use District
- CMX - Commercial Mixed Use District
- DC - Downtown Core District
- RC - Rural Commercial District
- GC - General Commercial District
- EC - Employment Center District
- IC - Industrial Commercial District
- IL - Light Industrial District
- IG - General Industrial District
- AI - Agricultural Industrial District
- EX - Extractive Disrtict
- PD - Planned Development District
- SP - Specific Plan District
- PF - Public Facilities District
- RPR - Resource Preservation and Recreation District
- SE - Sports Entertainment District
- TP - Timber Preservation District
- PR - Planning Reserve




Land Use Designations within 1 mile of the Project Area

- Valley Neighborhood
- Commercial Mixed Use
- Employment
- Employment Village
- Public / Quasi-Public
- Rural Community
- Natural Resources
- Planning Reserve
- Highways
- Railroads
- Roadways
- Airport Runways
- City Limits
- Water Bodies
- Valley Growth Boundary

**Legend**

- Project
- 1-Mile Buffer

Source: Yuba County, 2015.

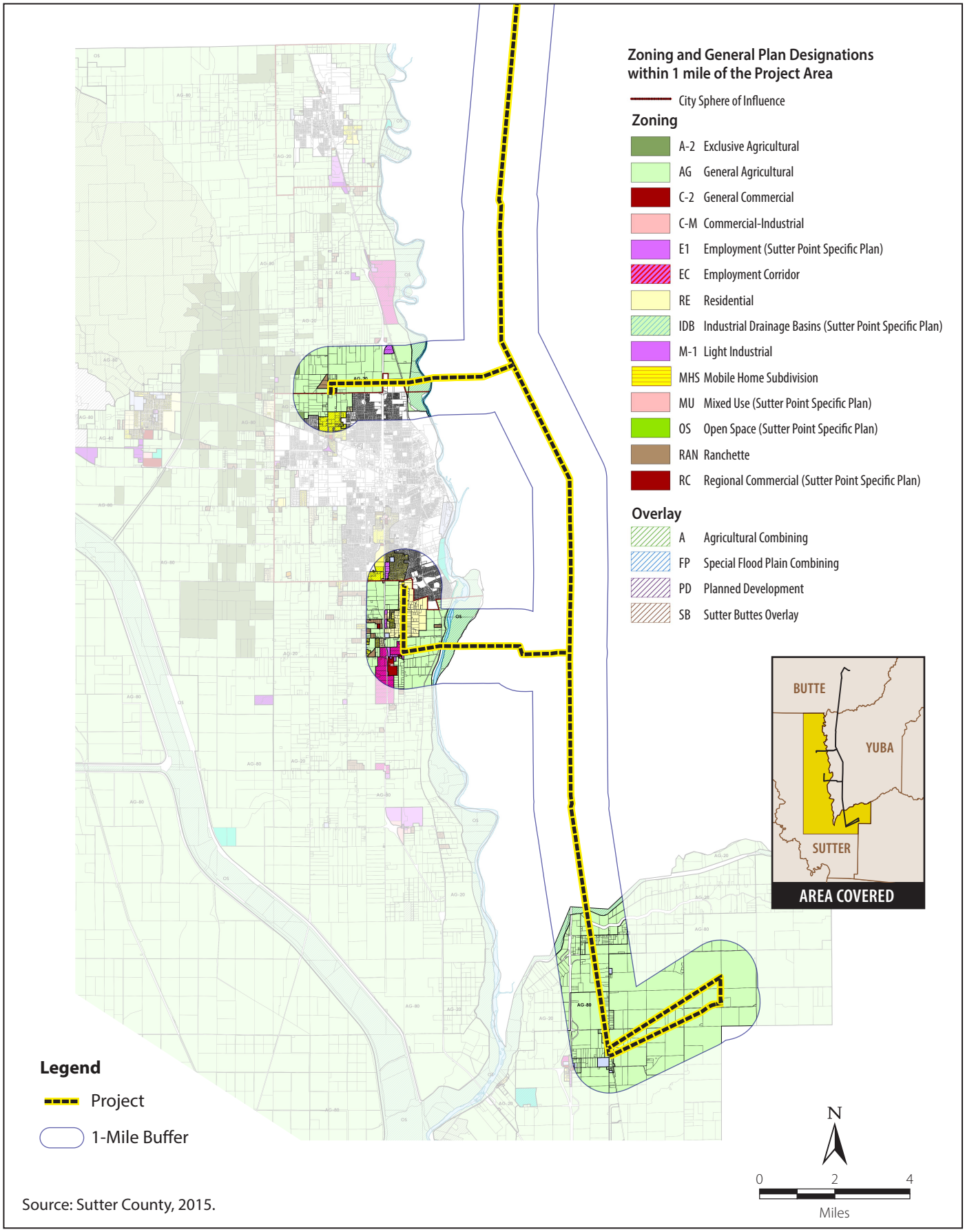
N

0 2 4

Miles

0441.15 Palermo_South (11-4-2015)

**Figure 3.10-2**
**Yuba County General Plan Land Use and Zoning Designations**
South of Palermo 115 kV Power Line Reinforcement Project




Source: Sutter County, 2015.

0441.15 Palermo_South (11-4-2015)

**Figure 3.10-3**
**Sutter County General Plan Land Use and Zoning Designations**
South of Palermo 115 kV Power Line Reinforcement Project

portions of the project area near developed communities, the land use is primarily residential development, interspersed with commercial and light industrial development.

Public land uses, including schools, parks, and recreational facilities, are located adjacent to and along the project area. As shown on Figure 3.15-1 and in Table 3.15-2 in Chapter 3.15, Recreation, there are 17 schools and 19 parks/recreational facilities within 0.5 mile of the project area. See Chapter 3.15, Recreation, for additional information about schools, parks, and recreational facilities in the project area.

#### *Zoning and General Plan Land Use Designations*

The project spans portions of Butte, Yuba, and Sutter Counties, and passes through a small portion of the cities of Oroville, Marysville, and Yuba City. Figures 3.10-1, 3.10-2, and 3.10-3 illustrate the general plan land use designations and zoning designations around the project area by county. Designations include general agricultural, exclusive agricultural, agricultural/residential, residential, light industrial, and general commercial uses. As indicated above, this project is under the exclusive jurisdiction of the CPUC and is not subject to local land use and zoning regulations. However, public utility facilities are typically considered compatible uses in all land use designations in Butte, Yuba, and Sutter Counties, and in Oroville, Marysville, and Yuba City.

### 3.10.3.3 Local Plans and Policies

Although the project is not subject to local agency regulations, PG&E has considered the following local plans and policies that relate to utilities in its design of the proposed project:

#### *Butte County General Plan*

The *Butte County General Plan 2030* does not contain any policies pertaining to utilities.

#### *Yuba County General Plan*

The *Yuba County General Plan* encourages coordination with utility and non-County public agencies to provide efficient local and regional infrastructure, public facilities, and public services (Policy CD 14.1 Coordinated Public Services, Regional Services).

#### *Sutter County General Plan*

The *Sutter County General Plan* includes various policies to encourage utility and other non-County public agencies to plan and design their structures and improvements at a high level of visual, architectural, and landscape quality that complements adjacent neighborhoods and uses (LU 9.3 Non-County Public Facilities). General Plan policies also encourage the County to work with local utility providers to ensure adequate and affordable supplies of energy are available for existing and future development (15.2 Adequate Energy Supplies). The General Plan also encourages the use of utility rights-of-way for multi-use trails (PS 7.4 Trail Opportunities).

#### *City of Oroville 2030 General Plan*

The *City of Oroville 2030 General Plan* includes various goals and policies to encourage utility agencies to provide energy utilities in ways that are safe, environmentally acceptable, and financially sound (Goal PUB-10). General Plan policies also encourage utilities that are

aesthetically acceptable (P10.1) and compatible with surrounding land uses (P10.2). The General Plan also encourages the use of existing transmission corridors for future power transmission line development (P10.3).

#### *City of Marysville General Plan*

The *City of Marysville General Plan* does not contain any policies pertaining to utilities.

#### *Yuba City General Plan*

The *Yuba City General Plan* does not contain any policies pertaining to utilities.

#### *Airport Land Use Plans*

ALUCPs were adopted for Butte, Yuba, and Sutter Counties in 2000, 2011, and 1994, respectively. The ALUCPs set forth policies to promote compatibility between airports and future land uses in the area surrounding the airports by establishing compatibility criteria that pertain to new development. Although not directly applicable to the project, the ALUCPs outline airport-area height restrictions necessary to ensure that objects will not impair flight safety or decrease the operational capability of the airport.

In Yuba County, a portion of the project area lies within the designated Airport Influence Area of Yuba County Airport. As discussed in Section 3.8 Hazards, PG&E has submitted the required Notice of Proposed Construction and Alteration Application to the FAA for any poles that exceed the Notice Criteria, and the FAA confirmed the project will not cause any air navigation hazards.

Although other airports and private air strips in Butte and Sutter Counties are located within 2 miles of the project area, the project area is not within a designated airport land use planning area for those airports. Section 3.8, Hazards and Hazardous Material, discusses ALUCPs in more detail.

## 3.10.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for land use impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational land use impacts.

### 3.10.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on land use and planning were evaluated for each of the criteria listed in Table 3.10-1, as discussed in Section 3.10.4.3.

### 3.10.4.2 Applicant-Proposed Measures

The project will have no impact on land use planning and no APMs are proposed.

### 3.10.4.3 Potential Impacts

Project impacts related to land use were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase. An analysis of impacts on adjacent land uses during construction and operation of the project is included in other sections of the PEA, including Section 3.1, Aesthetics; Section 3.3, Air Quality; Section 3.8, Hazards and Hazardous Material; Section 3.12, Noise; Section 3.15, Recreation; and Section 3.16, Transportation and Traffic.

The project includes reconductoring approximately 59.5 miles of existing power lines within the Palermo–Rio Oso 115 kV transmission system, including replacing or modifying existing support structures, within the existing utility corridor. O&M activities for the reconductored power lines and existing substations will not change from current practices. As such, impacts related to land use and planning resulting from the reconductoring project will not change from existing conditions and no operation-related impacts will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

#### a) Would the project physically divide an established community? *No Impact*

Implementation of this project will not physically divide an established community. The project area is located within an existing transmission line corridor. No impact will occur.

#### b) Would the project conflict with 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? *No Impact*

Because local agencies do not have jurisdiction over the project, and no state or federal land use plans, policies, or regulations are applicable, the project will not conflict with any applicable land use policy, plan, or regulation. Moreover, even if local land-use regulations did apply, the project is consistent with such regulations. The project includes reconductoring existing power lines within PG&E's existing utility corridor. No changes in land use or zoning will take place as part of the project. No impact will occur.

#### c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? *No Impact*

No adopted habitat conservation plans or natural community conservation plans cover the project area; therefore, the project will not conflict with any applicable habitat conservation plan or natural community conservation plan and no impact will occur.

## 3.10.5 REFERENCES

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# 3.11 MINERAL RESOURCES

## 3.11.1 INTRODUCTION

This section describes existing conditions and potential impacts on mineral resources as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts on mineral resources will be less than significant. No Applicant-Proposed Measure(s) (APMs) are proposed for the project. The project's potential effects on mineral resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.11-1 and discussed in more detail in Section 3.11.4.

**Table 3.11-1: CEQA Checklist for Mineral Resources**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

## 3.11.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.11.2.1 Regulatory Background

#### *Federal*

No federal regulations related to mineral resources are applicable to the project.

#### *State*

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the state geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land (Public Resources Code Sections 2710-2796).

#### *Local*

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local land use plans that delineate locally important mineral resource recovery sites for informational purposes and to assist with the CEQA review process.

According to the *Butte County General Plan* and *City of Oroville General Plan*, the mineral resources of the county have yet to be mapped by the state geologist. Public or private entities, however, can petition the State Mining and Geology Board (SMGB) to classify specific lands containing mineral deposits threatened by land use incompatibilities. Such a petition was filed for the Martin Marietta Materials Table Mountain Quarry near Oroville. The SMGB concluded

that part of the mine is classified as a mineral resource of regional or statewide significance, and accordingly designated the site as MRZ-2. A petition was also filed for the M&T Chico Ranch site, and the SMGB classified part of the mine as a mineral resource of regional and statewide significance and designated the site as MRZ-2.

According to the *Yuba County General Plan*, the mineral resources of Yuba County include but are not limited to sand and gravel, clay, stone products, silica, silver, and gold. Known MRZs in Yuba County consist primarily of an area along the Yuba River (Yuba Goldfields), extending from Marysville on the west to approximately Smartville on the east (Habel and Campion 1988).

According to the *Sutter County General Plan*, Sutter County contains areas classified by the state geologist as MRZ-1 and MRZ-3, but no areas within Sutter County are designated by the SMGB to have regional or statewide significance.

The *City of Marysville General Plan* and *Yuba City General Plan* do not contain any policies pertaining to mineral resources.

#### 3.11.2.2 Methodology

Information on mineral resources was compiled from county general plans, city general plans, published literature, maps, and review of aerials maps. Geologic units and mineral land classifications were obtained from maps published by the DOC and U.S. Geological Survey. Mineral resource impacts that could result from project construction were evaluated qualitatively based on-site conditions, expected construction practices, materials, locations, and duration of project construction.

### 3.11.3 Environmental Setting

The project area does not cross MRZ-designated areas in Butte and Sutter Counties, but does cross MRZ-designated areas in Yuba County. More specifically, the portion of the project area that crosses the Yuba River is within Yuba Goldfields, a locally important mineral resource area of Yuba County. This area along the Yuba River falls within MRZ-2, and consists of natural stream channel and floodplain alluvium, hydraulic wash deposits from upstream monitor workings, dredge tailings, and recent stream channel alluvium in the present channel of the Yuba River (Habel and Campion 1988).

### 3.11.4 Applicant-Proposed Measures and Potential Impacts

The following sections describe significance criteria for mineral impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational mineral impacts.

#### 3.11.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines,

the potential significance of project impacts on mineral resources were evaluated for each of the criteria listed in Table 3.11-1, as discussed in Section 3.11.4.3.

### 3.11.4.2 Applicant-Proposed Measures

No APMs are proposed for the project.

### 3.11.4.3 Potential Impacts

Project impacts related to mineral resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; therefore, no operation-related impacts related to mineral resources will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing towers (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state? *No Impact***

Extraction operations exist outside the project area. The only portion of the alignment that crosses a known mineral resource is near Marysville, where the project area crosses Yuba Goldfields, a portion of the Yuba River that is designated as MRZ-2 for aggregate materials. No aggregate extraction is taking place at this time. The proposed changes to the existing power lines will not change future accessibility to the river for any purpose.

Project-related construction activities in areas classified as MRZ-2 will be temporary; such activities will include a minimal amount of ground disturbance associated with placement of new tubular steel poles, hybrid poles, or lattice steel poles within existing easements. Following construction, all temporary access roads and construction work areas will be restored to their original conditions. Therefore, no impact will occur.

**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***

Although the portion of the project area that crosses the Yuba River is within the Yuba Goldfields, a locally important mineral resource area of Yuba County, the construction activities for the proposed project will be temporary and will affect only a very small area. The river crossing does not traverse areas currently used to extract known mineral resources. Accordingly, proposed project impacts on locally important mineral resources will be less than significant.

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# 3.12 NOISE

## 3.12.1 INTRODUCTION

This section describes potential noise impacts associated with construction, operation, and maintenance of the project, and concludes that impacts will be less than significant in these areas. The Applicant-Proposed Measure(s) (APMs) described in Section 3.12.5 will further reduce potential less-than-significant impacts. The project's potential noise-related effects were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.12-1 and discussed in more detail in Section 3.12.4.

**Table 3.12-1: CEQA Checklist for Noise**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

### 3.12.1.1 Fundamentals of Noise

Noise is generally defined as unwanted sound. Airborne sound is the fluctuation of air pressure above and below atmospheric pressure. Several ways exist to measure sound, depending on the source, receiver, and reason for the measurement.

Community sound levels are generally presented in terms of A-weighted decibels (dBA). The A-weighting network measures sound in a similar fashion to how a person perceives or hears sound, thus achieving a strong correlation with how people perceive acceptable and unacceptable sound levels. Table 3.12-2: Typical Sound Levels Measured in the Environment and Industry,

presents A-weighted sound levels and the general subjective responses associated with common sources of noise in the physical environment.

**Table 3.12-2: Typical Sound Levels Measured in the Environment and Industry**

| Noise Source at a Given Distance | Sound Level in A-weighted Decibels (dBA) | Qualitative Description |
|---|---|---|
| Carrier deck jet operation | 140 | |
| | 130 | Pain threshold |
| Jet takeoff (200 feet) | 120 | |
| Auto horn (3 feet) | 110 | Maximum vocal effort |
| Jet takeoff (1,000 feet)<br>Shout (0.5 foot) | 100 | |
| New York subway station<br>Heavy truck (50 feet) | 90 | Very annoying;<br>Hearing damage (8-hour, continuous exposure) |
| Pneumatic drill (50 feet) | 80 | Annoying |
| Freight train (50 feet)<br>Freeway traffic (50 feet) | 70 to 80<br>70 | Intrusive<br>(telephone use difficult) |
| Air conditioning unit (20 feet) | 60 | |
| Light auto traffic (50 feet) | 50 | Quiet |
| Living room<br>Bedroom | 40 | |
| Library<br>Soft whisper (5 feet) | 30 | Very quiet |
| Broadcasting/Recording studio | 20 | |
| | 10 | Just audible |
| Source: Adapted from Table E, "Assessing and Mitigating Noise Impacts" (New York Department of Environmental Conservation 2001) | | |

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level ($L_{eq}$), which is defined as the average noise level on an equal-energy basis for a stated period of time and commonly is used to measure steady-state sound that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by $L_n$, where "n" represents the percentile of time that the sound level is exceeded. Therefore, $L_{90}$ represents the noise level that is exceeded during 90 percent of the measurement period, which typically represents a continuous noise source. Similarly, $L_{10}$ represents the noise level exceeded for 10 percent of the measurement period.

Another metric used in determining the impact of environmental noise is the differences in response that people have to daytime and nighttime noise levels. During the evening and at night, exterior background noises generally are lower than daytime levels. However, most household noise also decreases at night, and exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. To account for human sensitivity to evening and nighttime noise levels, the day-night sound level ($L_{dn}$) (also referred to as DNL) and the community noise equivalent level (CNEL) were developed. The $L_{dn}$ is a noise metric that accounts for the greater annoyance of noise during the nighttime hours (10 p.m. to 7 a.m.). The CNEL is a noise index that accounts for the greater annoyance of noise during both the evening hours (7 p.m. to 10 p.m.) and nighttime hours.

$L_{dn}$ values are calculated by averaging hourly $L_{eq}$ sound levels for a continuous 24-hour period on an energy basis, applying a weighting factor of 10 decibels (dB) to the nighttime values. CNEL values are calculated similarly, except that a 5-dB weighting factor also is added to evening $L_{eq}$ values. The applicable adjustments, which reflect the increased sensitivity to noise during evening and nighttime hours, are applied to each hourly $L_{eq}$ sound level for the calculation of $L_{dn}$ and CNEL. For the purposes of assessing noise, the 24-hour day is divided into three time periods, with the following adjustments:

- Daytime hours: 7 a.m. to 7 p.m. (12 hours)—adjustment of 0 dBA
- Evening hours (for CNEL only): 7 p.m. to 10 p.m. (3 hours)—adjustment of +5 dBA
- Nighttime hours (for both CNEL and $L_{dn}$): 10 p.m. to 7 a.m. (9 hours)—adjustment of +10 dBA

The hourly adjusted time-period noise levels are then averaged (on an energy basis) to compute the overall $L_{dn}$ or CNEL value. For a continuous noise source, the $L_{dn}$ value can be computed by adding 6.4 dBA to the overall 24-hour noise level ($L_{eq}$). For example, if the expected continuous noise level from a noise source is 60.0 dBA, the resulting $L_{dn}$ from the source will be 66.4 dBA. Similarly, the CNEL for a continuous noise source is computed by adding 6.7 dBA to the overall 24-hour $L_{eq}$.

The general human response to changes in noise levels that are similar in frequency content (such as comparing increases in continuous [$L_{eq}$] traffic noise levels) are summarized as follows:

- A 3-dB change in sound level is considered to be a barely noticeable difference.
- A 5-dB change in sound level typically is noticeable.
- A 10-dB increase is considered to be a doubling in loudness.

### *Corona Noise*

Corona generates audible noise during operation of high-voltage transmission lines. Under certain conditions, the localized electric field near an energized conductor can be sufficiently concentrated to produce a tiny electric discharge that can ionize air close to the conductors. This partial discharge of electrical energy is called corona discharge, or corona. Several factors, including conductor voltage, shape and diameter, and surface irregularities such as scratches, nicks, dust, or water drops, can affect a conductor's electrical surface gradient and its corona performance. Corona is the physical manifestation of energy loss, and can transform discharge energy into very small amounts of sound, radio noise, heat, and chemical reactions of the air components.

Transmission lines can generate a small amount of sound energy during corona activity. This audible noise from the line can barely be heard in fair weather conditions on higher voltage lines. During wet weather conditions (such as rain or fog), water drops collect on the conductor and increase corona activity so that a crackling or humming sound may be heard near the line. This noise is caused by small electrical discharges from the water drops. However, during heavy rain, the ambient noise generated by the falling raindrops will typically be greater than the noise generated by corona. Corona noise is generally more noticeable on high-voltage lines, and is usually not a design issue for power lines rated at 230 kV and lower.

#### *Vibration*

Generally speaking, vibration is energy transmitted in waves through the ground. Because energy is lost during the transfer of energy from one particle to another, vibratory energy is reduced with increasing distance from the source. Vibration attenuates at a rate of approximately 50 percent for each doubling of distance from the source. This approach only takes into consideration the attenuation from geometric spreading. Because additional factors reduce vibration over distance (e.g., damping from soil condition), this approach tends to provide for a conservative assessment of vibration level at the receiver.

## 3.12.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.12.2.1 Regulatory Background

#### *Federal*

No federal regulations that limit overall environmental noise levels are applicable to the project.

#### *State*

No state regulations limit environmental noise impacts.

#### *Local*

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary noise requirements. This section includes a summary of local noise standards or ordinances in the project area for informational purposes and to assist with CEQA review. Airport Land Use Compatibility Plans are discussed in Section 3.10, Land Use and Planning, and safety concerns around airports are discussed in Section 3.8, Hazards and Hazardous Material.

The project area spans portions of Butte, Yuba, and Sutter counties, and passes through small portions of Oroville, Marysville, and Yuba City. Modifications will be made to lines near the communities of Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus.

The adopted noise ordinances for Butte County and Yuba County area summarized below. Sutter County does not have an adopted noise ordinance.

*Butte County*

Chapter 41A of the Butte County Code of Ordinances relates to noise control. Construction is exempt from the code requirements under the conditions described below:

> Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property or public works project located within 1,000 feet of residential uses, provided said activities do not take place between the following hours:
>
> - Sunset to sunrise on weekdays and non-holidays;
> - Friday commencing at 6:00 p.m. through and including 8:00 a.m. on Saturday, as well as not before 8:00 a.m. on holidays;

- Saturday commencing at 6:00 p.m. through and including 10:00 a.m. on Sunday; and,
- Sunday after the hour of 6:00 p.m.

If an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner is allowed to continue work into the hours delineated above and to operate machinery and equipment necessary to complete the specific work in progress until that specific work can be brought to conclusion under conditions that will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

### *Yuba County*

The Yuba County noise ordinance applies to 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 has identified exterior noise exposure standards, which are shown in Table 3.12-3. These levels do not apply to construction noise.

**Table 3.12-3: Yuba County Noise Level Standards**

| Zone Permitted | Time | Sound Level | Maximum Noise Level |
|---|---|---|---|
| Single 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 |
| M-1 General Industrial | Anytime | 65 | 75 |
| M-2 Extractive Industrial | Anytime | 70 | 80 |
| Source: Yuba County Noise Ordinance | | | |

Section 8.20.310 of 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. and 7 a.m. (nighttime hours) “in such a manner that a reasonable person of normal sensitiveness [sic] residing in the area is caused discomfort or annoyance unless a permit has been duly obtained.” Project construction would not be subject to this local permitting requirement related to noise.

### *Sutter County*

Sutter County has not adopted a noise ordinance.

### *Yuba City*

Title 4, Public Safety, of the Yuba City Municipal Code includes noise-related ordinances. Applicable portions of the Yuba City Municipal Code sections are excerpted below:

> **Sec. 4-17.02. Prohibited Generally:** It shall be unlawful for any person to willfully or knowingly make, continue, or cause to be made, or continued any loud and raucous noise. The term "loud and raucous noise" shall mean any sound which because of its volume level, duration or character annoys, disturbs, injures or endangers the comfort, health, peace or safety of a reasonable person of ordinary sensibility within the limits of the City of Yuba City.
>
> Following are s examples of applicable "loud and raucous noise" according to the Yuba City Municipal Code Sec. 4-17.10(e):
>
> - The loud and raucous operation or use of any of the following before 6:00 a.m. or after 9:00 p.m. daily except Sunday and State or Federal holidays when the prohibited time shall be before 8:00 a.m. and after 9:00 p.m.:
>
>  1. A hammer or any other device or implement used to produce or strike an object.
>
>  2. An impact wrench or other tool or equipment powered by compressed air.
>
>  3. A hand powered saw.
>
>  4. Any tool or piece of equipment powered by an internal combustion engine such as, but not limited to, chain saw, backpack blower and lawn mower. Except as included in paragraph (6) below, motor vehicles powered by an internal combustion engine and subject to the California Vehicle Code are excluded from this prohibition.
>
>  5. Any electrically powered (whether by alternating current electricity or by direct current electricity) tool or piece of equipment used for cutting, drilling or shaping wood, plastic, metal or other materials or objects such as, but not limited to, a saw, drill, lathe or router.
>
>  6. Any of the following: Heavy equipment (such as, but not limited to, bulldozer, road grader, back hoe), ground drilling and boring equipment (such as, but not limited to, derrick or dredge), crane and boom equipment, portable power generator or pump, pavement equipment (such as, but not limited to, pneumatic hammer, pavement breaker, tamper, compacting equipment), pile driving equipment, vibrating roller, sand blaster, gunite machine, trencher, concrete truck and hot kettle pump.
>
>  7. Any construction, demolition, excavation, erection, alteration or repair activity.

### *City of Marysville*

The City of Marysville has not adopted a noise ordinance.

### *City of Oroville*

The City of Oroville Noise Ordinance (Municipal Code Chapter 9.20) describes noise regulations applicable to various noise sources and receiving land uses. Those relevant to the proposed project are detailed here.

Section 9.20.030, which pertains to residential property noise limits, states that no person shall produce, suffer or allow to be produced by any machine, animal or device, or any combination of same, on residential property, a noise level more than 5 dB above the local ambient at any point outside of the property plane.

Section 9.20.050, which pertains to the noise limits on public property, states that no person shall produce, suffer or allow to be produced by any machine or device, or any combination of same, on public property, a noise level more than 15 dB above the local ambient at a distance of 25 feet or more from the source unless otherwise provided in this chapter.

Note that, according to Section 9.20.060 (Exceptions), construction is exempted from these requirements between the hours of 7:00 a.m. and 9:00 p.m. on weekdays and 10:00 a.m. and 6:00 p.m. on Saturdays, Sundays and holidays, as long as it complies with at least one of the following limitations:

1. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source.

2. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.

### 3.12.3 METHODOLOGY

Evaluation of potential noise impacts from the project included reviewing all local county, community, and city noise standards, characterizing the existing noise environment, and predicting noise levels and related impacts during both construction and operation. Temporary construction noise associated with the operation of heavy equipment was evaluated using methods specified in the Federal Highway Administration's (FHWA's) *Roadway Noise Construction Model User's Guide* (FHWA 2006). Helicopter noise was evaluated using source levels specified in *Transportation Noise Reference Book* (Nelson 1987) and standard acoustical modeling methods. The potential for noise related to O&M was also assessed.

### 3.12.4 ENVIRONMENTAL SETTING

The project spans portions of Butte, Yuba, and Sutter counties between the communities of Oroville to the north and East Nicolaus to the south. Modifications will be made to power lines in small portions of the cities of Oroville, Marysville, and Yuba City, and near the communities of Palermo, Honcut, Tierra Buena, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus. Prominent geographic features that intersect the project area include the Feather River, Yuba River. The primary highways in the project area are SR 99, SR 70, SR 65, and SR 20.

Agriculture, primarily rice fields and orchards, is the predominant land use throughout much of the project alignment. In the portions of the project area near developed communities, the land use is primarily residential, interspersed with industrial development.

Contributors to the noise environment primarily consist of the continuous sound of traffic on highways and city roads, but also include intermittent noise from other sources, such as trains on nearby railroad tracks, agricultural equipment, and crop dusters.

#### 3.12.4.1 Sensitive Receptors

Noise-sensitive receptors generally are defined as locations where people reside or where the presence of unwanted sound may adversely affect the existing land use. Typically, noise-sensitive land uses include residences, hospitals, places of worship, libraries, performance spaces, offices, and schools, as well as nature and wildlife preserves, recreational areas, and parks. Sensitive receptors within 0.5 mile of the project alignment were analyzed for potential impacts as a result of project construction and operation.

Land uses along the project alignment are mostly agricultural lands and open-space areas, with some residential tracts and schools (Yuba Community College, East Nicolaus High School, Yuba Gardens Intermediate School, and Linda Elementary School, among others) located relatively close to the alignment. See Table 3.15-2 for a list of all schools within 0.5 mile of the project area. One school (Yuba Gardens Intermediate School) is as close as 100 feet from the alignment. In a few specific areas along the project alignment, residential land uses are within 10 feet of the project work areas and access roads, and within 25 feet of the power line or associated facilities. (See Photograph #16, Figure 3.1-3.) The majority of the residences located near the project alignment are in the communities of Linda, Olivehurst, Palermo, and Southern Plumas Lake. No hospitals are located within 1 mile of the project area.

Several parks are located within 1 mile of the project area, including Olivehurst Community Park, which is approximately 65 feet from the project alignment in the community of Olivehurst, and Palermo Park, which is 0.4 mile away from the alignment in the community of Palermo. POW/MIA Park is located 0.3 mile away from the project alignment in the community of Linda, and Regency Park is located 0.4 mile away from the alignment in Yuba City. Refer to Figure 3.15-1 in Section 3.15, Recreation, for a map of parks and recreational areas within 0.5 mile of the project.

#### 3.12.4.2 Airports and Airstrips

Two public airports are located within 2 miles of the project area. The Yuba County Airport is located 1 mile west of the central portion of the project alignment, in the community of Olivehurst, the Sutter County Airport is located approximately 1.9 miles northeast of the westernmost segment of the alignment. The Siller Brothers Incorporated Airport, a small private airstrip in Oroville, is approximately 1.6 miles west of the northern portion of the alignment.

In addition to these facilities, the Oroville Airport is located 4 miles northwest of the northern portion of the project alignment, the Sacramento International Airport is approximately 14.5 miles south of the southern portion of the alignment, and the privately-owned Rio Linda Airport is approximately 16.5 miles south of the southern portion of the alignment.

### 3.12.5 Applicant-Proposed Measures and Potential Impacts

The following sections describe significance criteria for noise-related impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational noise impacts.

### 3.12.5.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to noise were evaluated for each of the criteria listed in Table 3.12-1, as discussed in Section 3.12.5.3.

### 3.12.5.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

***APM NO-1: Employ Noise-Reducing Construction Practices during Temporary Construction Activities***

PG&E will employ standard noise-reducing construction practices such as the following:

- 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.
- Limit all construction activity near sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime project construction be necessary because of planned clearance restrictions, affected residents will be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.

### 3.12.5.3 Potential Impacts

Project impacts related to noise were evaluated against the CEQA significance criteria and are discussed below. This section evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts stemming from noise will occur. Accordingly, the impact analysis is focused only on construction activities that are required to install new conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing towers (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project result in 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? *Less than Significant***

As described in Section 3.12.4, land uses along the project alignment are mostly agricultural lands and open-space areas, with some residential tracts and schools. One school is located as close as 100 feet from the alignment. In a few areas, residential buildings are located within 10 feet of the project work areas and access roads, and within 25 feet of the alignment. Some residential outdoor use areas are located immediately adjacent to project work areas. The majority of the residences located near the project alignment are in the communities of Linda, Olivehurst, Palermo, and Southern Plumas Lake. However, in most areas, construction areas for the project are located near open-space or agricultural lands. To ensure a conservative analysis, the noise impact assessment focused on potential noise impacts on the residences located as close as 10 feet from the construction areas.

### *Construction*

Typical noise levels generated by some of the loudest construction equipment listed in Chapter 2, Project Description, and for project construction have been calculated previously and published in various reference documents. The expected equipment noise levels listed in the *FHWA Roadway Construction Noise Model User's Guide* (FHWA 2006) were used for this evaluation. The User's Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Table 3.12-4 shows noise levels for typical construction equipment, and Table 3.12-5 presents the average ($L_{eq}$) noise level at several distances for land-based construction equipment (not including helicopters, which are discussed separately below).

**Table 3.12-4: Typical Construction Equipment Noise Levels**

| Equipment Description | Acoustical Usage Factor (%) | Specified $L_{max}$ at 50 feet (dBA) | Calculated $L_{eq}$ at 100 feet (dBA) | Calculated $L_{eq}$ at 1,000 feet (dBA) | Calculated $L_{eq}$ at 2,000 feet (dBA) | Calculated $L_{eq}$ at 4,000 feet (dBA) |
|---|---|---|---|---|---|---|
| All Other Equipment > 5 horsepower | 50 | 85 | 76 | 56 | 50 | 44 |
| Auger Drill Rig | 20 | 85 | 72 | 52 | 46 | 40 |
| Backhoe | 40 | 80 | 70 | 50 | 44 | 38 |
| Crane | 16 | 85 | 71 | 51 | 45 | 39 |
| Dump Truck | 40 | 84 | 74 | 54 | 48 | 42 |
| Grader | 40 | 85 | 75 | 55 | 49 | 43 |
| Pickup Truck | 40 | 55 | 45 | 25 | 19 | 13 |
| Tractor | 40 | 84 | 74 | 54 | 48 | 42 |

Notes:
dBA = A-weighted decibels;
$L_{eq}$ = equivalent sound pressure level.
Source*: FHWA Roadway Construction Noise Model User's Guide* (FHWA 2006)
Equation to calculate $L_{max}$ at 1,000, 2,000 and 4,000 feet is as follows:
$L_{eq}(h) = L_{max} + 10*\log(A.U.F.) - 20*\log(D/Do)$
where:
$L_{max}$ = Maximum noise emission level of equipment based on work cycle at D/Do (decibel).
A.U.F. = Acoustical usage factor, which accounts for the percent time that equipment is in use over the time period of interest (1 hour).
D = Distance from the equipment to the receptor (feet).
Do = Reference distance (generally 50 feet) at which the $L_{max}$ was measured for the equipment of interest (feet).

As Table 3.12-4 shows, the loudest typical construction equipment generally emits noise in the range of 80 to 90 dBA at 50 feet, with usage factors of 40 percent to 50 percent. Noise at any specific receptor is dominated by the closest and loudest equipment. The types and numbers of construction equipment near any specific receptor location will vary over time. The following conservative assumptions (related to several pieces of construction equipment operating simultaneously) were used for modeling construction noise:

- One piece of equipment generating a reference noise level of 85 dBA (at 50 feet distance with a 40-percent usage factor) located on the power line route.
- Two pieces of equipment generating reference 85-dBA noise levels located 50 feet farther away on the power line route (100 feet distance with a 40-percent usage factor).
- Two additional pieces of equipment generating reference 85-dBA noise levels located 100 feet farther away on the power line route (200 feet distance with a 40-percent usage factor).

Table 3.12-5 presents land-based construction equipment noise levels at various distances based on this scenario (helicopters discussed separately below).

**Table 3.12-5: Land-Based Construction Equipment Noise Levels at Various Distances**

| Distance from Construction Activity (feet) | $L_{eq}$ Noise Level (dBA) |
|---|---|
| 50 | 83 |
| 100 | 79 |
| 200 | 74 |
| 400 | 69 |
| 800 | 63 |
| 1,600 | 58 |
| 3,200 | 52 |
| 6,400 | 46 |

Notes:
dBA = A-weighted decibels; $L_{eq}$ = equivalent sound pressure level
See text narrative preceding this table for the parameters of this noise modeling scenario.

As shown in Table 3.12-5, construction noise from land-based equipment could reach levels of 83 dBA $L_{eq}$ at a distance of 50 feet from the nearest construction activity. Construction activity areas could be located as close as 10 feet of residential structures. Accordingly, it is possible that noise levels from land-based equipment construction activities at some receptors may be higher than 83 dBA $L_{eq}$. Using the same assumptions used to calculate noise levels at 50 feet from the closest equipment, noise levels at a distance of 10 feet from the closest operating equipment (with one piece of equipment at 10 feet, two pieces of equipment 50 feet farther away, and two additional pieces of equipment 100 feet farther away) would be approximately 85 dBA $L_{eq}$. Land-based construction activities located as close as approximately 10 feet from noise-sensitive receptors could result in noise levels up to 95 dBA at these locations.

As described in Chapter 2.0, Project Description, to minimize ground disturbance, helicopters may be used near sensitive receptors to replace towers and reconductor. A large single-rotor helicopter such as a Bell 214 (commonly used for this type of work) 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 a 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 operating above pole installation locations could be as close as approximately 250 feet to residences during construction at certain locations. At this distance, helicopter noise levels could be in the range of about 83 to 87 dBA.

Construction of the project is expected to last a total of approximately 36 months. However, construction activities will be temporary at any given location (1 or 2 weeks) and limited primarily to daytime hours. Note that although some construction work would occur as close as 10 feet away from residential receptors, the majority of the project alignment is located near open-space or agricultural areas. Nighttime construction is not anticipated, but if it becomes

necessary for safety or clearance reasons (planned electrical outages), activities will be very short-term. The implementation of APM NO-1 will help minimize exposure of sensitive receptors to construction noise during project construction.

PG&E will observe the hourly restrictions for construction noise in local ordinances in all instances except where prevented by safety or line-clearance issues. If nighttime construction is required, impacts will be less than significant given the very short duration of construction activity at any one location.

Implementation of APM NO-1 will further reduce potential construction-related noise effects, including nighttime noise effects. Accordingly, construction of the project will result in less-than-significant impacts.

***Operation and Maintenance***

Corona noise is generally not an issue for power lines rated at 230 kV and lower. Because the replacement power line will be 115 kV and the same voltage as the existing line, no additional corona noise will be generated as a result of the project, and there will be no additional noise impacts from operation of the power line.

O&M activities for the reconductored power lines and existing substations will not change from current practices. There will be no new noise generated from maintenance activities associated with the project. As such, impacts related to noise resulting from the reconductoring project will not change from existing conditions. Accordingly, there will be no noise impacts associated with O & M of the project.

**b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?** ***Less than Significant***

The O&M activities required for the reconductored power lines will not change from those currently required for the existing system; thus, no operation-related impacts related to vibration or groundborne noise would occur.

Construction activities (e.g., ground-disturbing activities, including the movement of heavy construction equipment) may generate localized groundborne vibration and noise. Project construction, however, will not involve the use of impact equipment such as pile drivers, which have a higher potential to generate groundborne vibration. Operation of heavy equipment that may be used for project construction is not anticipated to result in excessive groundborne vibration. Any groundborne vibration and groundborne noise will occur during daytime hours and be of short duration. Therefore, construction of the project will result in a less-than-significant vibration impact.

**c) Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?** ***No Impact***

Project construction will not result in a permanent increase in ambient noise levels.

O&M activities for the power lines will be similar in scope to existing O&M activities. Minor modifications at substations will not result in increased ambient noise levels. The new conductor

will not change the amount of corona noise (the crackling, hissing, or humming that can be heard during foggy or wet conditions) generated by operation of the power line beyond the existing conditions. No permanent increase in ambient noise levels will occur in the project vicinity. Therefore, there will be no impact.

**d) Would the project result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? *Less than Significant***

Any increases in ambient noise levels in the project vicinity during construction will be intermittent and temporary. Proposed pieces of construction equipment and the typical dBA noise levels associated with their use (at a distance of 50 feet) are presented in Table 3.12-4.

Nighttime construction is not anticipated, and PG&E will observe the hourly restrictions for construction noise in local ordinances in all instances except where prevented by safety or line-clearance issues. If nighttime construction is required, it would occur for a very short period at any one location. Implementation of APM NO-1 would further reduce potential construction-related noise effects, including nighttime noise effects.

Given the short duration of construction activity at any one location and the noise reduction measures that will be applied under APM NO-1, increased noise levels from construction activity in any single location will be less than significant.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, will the project expose people residing or working in the project area to excessive noise levels? *Less than Significant***

The airport closest to the project is the Yuba County Airport, which is 1 mile west of the project alignment. No other airports are located within 2 miles of the project area. Although the project area is within 1 mile of the Yuba County Airport, and some of the project area is located within the airport influence area (as defined by the Yuba County Airport Land Use Compatibility Plan [Yuba County 2010]), the project area is entirely outside of the 55–60 dB CNEL contour. Because of this, project construction workers and people residing in the area will not be exposed to excessive noise levels from airport operations. Therefore, the project will result in a less-than-significant impact related to airport noise exposure.

**f) For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels? *Less than Significant***

The Siller Brothers Incorporated Airport, a small private airstrip in Oroville, is approximately 1.6 miles west of the northern portion of the alignment. Because of the distance of this facility from the project site, this small air strip will not expose residents or workers in the project area to excessive noise levels. Therefore, the project will result in a less-than-significant impact related to airstrip noise exposure.

## 3.12.6 REFERENCES

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# 3.13 POPULATION AND HOUSING

## 3.13.1 INTRODUCTION

This section describes existing conditions and potential impacts on population and housing as a result of project construction, operation, and maintenance. The analysis concludes that the project will have no impact. The project's potential effects on population and housing were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.13-1 and discussed in more detail in Section 3.13.4.

**Table 3.13-1: CEQA Checklist for Population and Housing**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☐ | ☒ |

## 3.13.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.13.2.1 Regulatory Background

No regulatory background information is relevant to addressing project-related impacts on population and housing.

### 3.13.2.2 Methodology

To evaluate potential effects on population and housing resources, the general plan housing elements were reviewed for Butte County, Yuba County, Sutter County, the City of Oroville, the City of Marysville, and Yuba City. U.S. Census Bureau data and the specific plans for the communities of East Linda and Plumas Lake were also reviewed.

## 3.13.3 ENVIRONMENTAL SETTING

### *Butte County*

Butte County encompasses approximately 1,670 square miles (1.07 million acres) and is divided into two topographical sections: a valley area that is the northeast portion of the Sacramento Valley, and a foothill/mountain region east of the valley. The primary land use in Butte County is agricultural.

### *Population*

As of 2013, Butte County had a population of 220,542 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, the county is projected to experience an approximately 58 percent increase in population to 348,790 people in 2035 (Butte County Association of Governments [BCAG] 2011). The project alignment is on unincorporated lands, which are not expected to increase in population as much as incorporated areas (e.g., Oroville).

**Table 3.13-2: Forecasted Population Trends**

| Jurisdiction | 2013 | 2035 | Projected Growth Between 2013 and 2035 (percent) |
|---|---|---|---|
| Butte County | 220,542 | 348,790 | 58 |
| Yuba County | 72,574 | 103,775 | 43 |
| Sutter County | 94,787 | 128,185 | 35 |
| City of Oroville | 15,858 | 31,995 | 102 |
| City of Marysville | 12,144 | 13,770 | 13 |
| Yuba City | 64,911 | 75,245 | 16 |
| Sources: U.S. Census Bureau 2013, Butte County Association of Governments 2011, Sacramento Area Council of Governments 2008 | | | |

### *Housing*

In 2010, the average household size in Butte County was 2.45 persons. Of the 95,835 housing units, approximately 42.9 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). As shown in Table 3.13-3, on the basis of the BCAG-projected population increases, the number of housing units is expected to grow by approximately 56 percent between 2010 and 2035 to 149,503 (BCAG 2011). The project alignment is adjacent to residential development— primarily single-family residences—in Butte County.

**Table 3.13-3: Forecasted Housing Unit Trends**

| Jurisdiction | 2010 | 2035 | Projected Growth Between 2010 and 2035 (percent) |
|---|---|---|---|
| Butte County | 95,835 | 149,503 | 56 |
| Sutter County | 33,858 | 45,986 | 36 |
| Yuba County | 27,635 | 37,670 | 36 |
| City of Oroville | 6,194 | 13,927 | 125 |
| City of Marysville | 5,196 | 5,720 | 10 |
| Yuba City | 23,174 | 26,099 | 13 |
| Sources: U.S. Census Bureau 2010; Butte County Association of Governments 2011; Sacramento Area Council of Governments 2008. | | | |

### *Yuba County*

Yuba County is located in the northern Sacramento Valley along the Feather River. The county encompasses approximately 644 square miles (412,160 acres) along the western slope of the Sierra Nevada. Marysville (the county seat) and most of the county's population are concentrated on the valley floor west of the mountains.

#### *Population*

As of 2013, Yuba County had a population of 72,574 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, by 2035, the population in Yuba County is expected to increase to 103,775 people (Sacramento Area Council of Governments [SACOG] 2008), an approximately 36 percent increase from 2013.

#### *Housing*

In 2010, the average household size in Yuba County was 2.9 persons. Of the 27,635 housing units, approximately 59.5 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). As shown in Table 3.13-3, on the basis of the SACOG-projected population increases, the number of housing units between 2008 and 2035 is expected to grow approximately 44 percent, to 37,670 units (SACOG 2008). The project alignment is adjacent to residential development— primarily single-family residences—in Yuba County.

### *Sutter County*

Sutter County is located along the Sacramento River in California's Central Valley and north of Sacramento. According to the U.S. Census Bureau, the county encompasses approximately 609 square miles (389,760 acres). The county's primary land use is agricultural.

#### *Population*

As of 2013, Sutter County had a population of 94,787 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, by 2035, the population in Sutter County is expected to increase to 128,185 (SACOG 2008), an approximately 35 percent increase from 2013.

#### *Housing*

In 2010, the average household size in Sutter County was 2.9 persons. Of the 33,858 housing units, approximately 61.1 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). As shown in Table 3.13-3, on the basis of the SACOG-projected population increases, the number of housing units between 2008 and 2035 is expected to grow approximately 36 percent to 45,986 units (SACOG 2008). The project alignment is adjacent to residential development— primarily single-family residences—in Sutter County.

### *City of Oroville*

Oroville is the county seat of Butte County and the site of the Oroville Dam. Oroville is situated on the banks of the Feather River, where the river flows from the Sierra Nevada onto the floor of the Sacramento Valley.

#### *Population*

As of 2013, Oroville had a population of 15,858 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, by 2035, the population of Oroville is expected to increase to 31,995 (BCAG 2011), an approximately 102 percent increase from 2013.

#### *Housing*

In 2010, the average household size in Oroville was 2.6 persons. Of the 6,194 housing units, approximately 42.9 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). By 2035, housing in Oroville is expected to increase to 13,927 housing units (BCAG 2011). As shown in Table 3.13-3, on the basis of the BCAG-projected population increases, the number of housing units is expected to increase by approximately 125 percent between 2010 and 2035. The project alignment is not adjacent to any residential development in Oroville.

### *City of Marysville*

Marysville is the county seat of Yuba County and is one of California's historic cities. Marysville is located approximately 40 miles north of Sacramento at the intersection of State Route (SR) 70 and SR 20.

#### *Population*

As of 2013, Marysville had a population of 12,144 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, by 2035, the population is expected to increase to 13,770 (SACOG 2008), an approximately 13 percent increase from 2013.

#### *Housing*

In 2010, the average household size in Marysville was 2.4 persons. Of the 5,196 housing units, approximately 39 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). As shown in Table 3.13-3, between 2010 and 2035, housing is expected increase by approximately 10 percent to 5,720 housing units (SACOG 2008).

### *Yuba City*

Yuba City is located in eastern Sutter County on the western bank of the Feather River and east of Marysville.

#### *Population*

As of 2013, Yuba City had a population of 64,911 people (U.S. Census Bureau 2013). As shown in Table 3.13-2, by 2035, the population is expected to increase to 75,245 (SACOG 2008), an approximately 16 percent increase from 2013.

#### *Housing*

In 2010, the average household size in Yuba City was 2.9 persons. Of the 23,174 housing units, approximately 57 percent were single-family, owner-occupied homes (U.S. Census Bureau 2010). As shown in Table 3.13-3, between 2010 and 2035, housing is expected increase by approximately 13 percent to 26,099 housing units (SACOG 2008).

There are eight hotels, motels, recreational vehicle parks, and long-term housing units located in the immediate project area that provide approximately 400 temporary housing units.

## 3.13.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts on population and housing derived from Appendix G of the CEQA Guidelines, and assess potential project-related construction and operational impacts. APMs are not required for this section.

### 3.13.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on population and housing were evaluated for each of the criteria listed in Table 3.13-1, as discussed in Section 3.13.4.3.

### 3.13.4.2 Applicant-Proposed Measures

No APMs are suggested because project construction, operation, and maintenance will have no impact on population and housing.

### 3.13.4.3 Potential Impacts

Project impacts on population and housing were evaluated against the CEQA significance criteria, as discussed below.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; therefore, no operations-related impacts related to population and housing will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), place cage-top extensions (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project induce substantial population growth in the area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?** ***No Impact***

The project will help meet future demand, maintain compliance with applicable grid reliability criteria, update aging equipment, and make it easier to maintain the transmission system. The project will not extend new power lines or other infrastructure into areas not already served; and the project does not facilitate growth that has not already been accounted for in long-range planning documents. While the project will improve electric transmission reliability, power availability and reliability are not constraints to population growth in the project area. The project will not generate new development. Furthermore, the project does not include new housing, businesses, or land use changes that will induce population growth in the area.

During peak construction times, PG&E will employ approximately 45 workers. It is anticipated that the work will be performed by local PG&E crews. However, some or all of the work may

be contracted to firms from outside the area. The project area has adequate hotels and motels available to provide accommodations to any workers that may temporarily relocate to the area during construction. Thus, the project would not directly or indirectly induce substantial population growth. No impact on population growth would occur.

**b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? *No Impact***

Project construction will not displace existing housing; therefore, no replacement housing will need to be constructed. No impact will occur.

**c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? *No Impact***

Project construction will not displace people, necessitating the construction of replacement housing, and accordingly, no impacts will occur.

## 3.13.5 REFERENCES

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# 3.14 PUBLIC SERVICES

## 3.14.1 INTRODUCTION

This section describes existing conditions and potential impacts on public services as a result of construction, operation, and maintenance of the project, and concludes no impacts will occur. Public services include fire and emergency protection, police protection, and maintenance of public facilities such as schools and parks. Emergency access is discussed in Section 3.16, Transportation and Traffic. Temporary construction-related impacts on schools and parks—such as dust and noise—are discussed in Sections 3.3, Air Quality, and 3.12, Noise, respectively. Project compatibility with future park-planning efforts is discussed in Section 3.10, Land Use and Planning. Potential impacts on parks and recreational facilities are discussed in Section 3.15, Recreation.

The project's potential effects on public services were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.14-1 and discussed in more detail in Section 3.14.4.

**Table 3.14-1: CEQA Checklist for Public Services**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| a) 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: | ☐ | ☐ | ☐ | ☒ |
| Fire protection? | ☐ | ☐ | ☐ | ☒ |
| Police protection? | ☐ | ☐ | ☐ | ☒ |
| Schools? | ☐ | ☐ | ☐ | ☒ |
| Parks? | ☐ | ☐ | ☐ | ☒ |
| Other public facilities? | ☐ | ☐ | ☐ | ☒ |

## 3.14.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.14.2.1 Regulatory Background

No regulatory background information for public services is relevant to the project.

### 3.14.2.2 Methodology

This section was prepared based on reviews of the Butte County General Plan, Sutter County General Plan, Yuba County General Plan, City of Oroville General Plan, Marysville General Plan, and Yuba City General Plan. Additional research for this section included examination of aerial photographs and personal communication with the Butte County Fire Department (BCFD), Butte County Sheriff's Department (BCSD), Sutter County Fire Services (SCFS), Sutter County Sheriff's Department, Yuba County Sheriff's Department, and Yuba City Fire Department (YCFD).

## 3.14.3 ENVIRONMENTAL SETTING

The project is located in Butte County, Sutter County, Yuba County, and the cities of Oroville, Marysville, and Yuba City. Details on the various jurisdictions are provided in the following subsections.

### 3.14.3.1 Fire Protection

#### *Butte County*

The BCFD operates 42 fire stations, 64 fire engines, 1 ladder truck, 2 heavy rescue vehicles, 16 water tenders, and 2 bulldozers. Two stations serve the portions of the project area located in Butte County.

*Station 72 – Palermo*

BCFD Station 72 (Station 72), located at 2290 Palermo Road in the community of Palermo, serves the community of Palermo including a portion of the South of Palermo Line. Two permanent personnel, including one full-time firefighter, staff this station 24 hours a day, 7 days a week. In addition, firefighters from Station 74 in the community of Gridley assist Station 72 staff with their duties, as needed (BCFD 2015a). Station 72 houses one front-line engine—often used to assist BCFD Station 74 (Station 74) staff members with their duties—and one reserve engine. The estimated response time to the portion of the project area served by Station 72 is approximately 4 minutes (BCFD 2015b).

*Station 74 – Gridley*

Station 74, located at 47 East Gridley Road in the community of Gridley, serves the area from south of the community of Palermo to the Yuba County border, including a portion of the South of Palermo Line. The station is staffed by four full-time firefighters, and two are assigned to each of the station's two engines 24 hours a day, 7 days a week. The station houses a ladder truck. 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 the project area is approximately 9 to 10 minutes.

#### *Yuba County*

Currently, 22 fire departments and fire stations serve Yuba County. Two departments serve the project area

#### *Olivehurst Public Utilities District*

The Olivehurst Public Utilities District (OPUD) is responsible for fire protection within the community of Olivehurst, including a portion of the South of Palermo Line and Bogue Sub Line Segment. The OPUD covers an approximately 5-square-mile service area that overlaps with the Linda Fire Protection District and serves a population of approximately 13,650. The OPUD has one station located at 1962 Ninth Avenue in the community of Olivehurst. The department is staffed by 1 fire chief, 4 captains, and 24 volunteer firefighters. The station is equipped with four engines, one ladder truck, one brush rig, and one command vehicle (Citygate Associates, LLC 2014).

#### *Linda Fire Department*

The Linda Fire Department (LFD) provides fire protection and emergency medical services to an approximately 52-square-mile area, covering the communities of Linda, West Linda, Arboga, and Plumas Lake, including a portion of the South of Palermo Line. The LFD is staffed by 1 chief officer, 1 administrative assistant, 4 captains, 14 engineers, and 13 firefighters.

Station 1, located at 1286 Scales Avenue in Marysville, serves the communities of Linda and West Linda, including a portion of the South of Palermo Line. Station 1 is staffed by 12 full-time firefighters, 1 paid chief, 1 chief's assistant, and 1 full-time secretary. Station 1 houses two grass engines, two structure engines, two utility units, one water tender, and one rescue rig. Response times vary depending on the call's location; however, the department's estimated response time to the project area is approximately 1 minute (LFD 2015).

Station 2, located at 1595 Broadway Road in the community of Arboga, serves the community of Arboga, including a portion of the South of Palermo Line. Station 2 is not staffed full time, but it houses one grass engine and one structure engine.

Station 3, located at 1765 River Oaks Boulevard in the community of Plumas Lake, serves the community of Plumas Lake, including a portion of the South of Palermo Line. Station 3 is not staffed full time, but it houses two grass engines and one structure engine.

### *Sutter County*

SCFS is composed of six different fire districts: three Board-dependent districts known as County Service Areas (CSAs), two independent districts that have their own governing boards, and the YCFD. Two districts serve the project area.

#### *Oswald – Tudor Fire Station*

The Oswald – Tudor Fire Station (OTFS), located at 1280 Barry Road in Yuba City, serves CSA-F in northeastern Sutter County, including a portion of the Pease Sub Line Segment. The station is staffed by approximately 30 to 40 volunteer firefighters and 16 paid firefighters. The station has three engines, one water tender, one rescue truck, and one patrol vehicle. Response times vary depending on the call's location. The maximum estimated response time is approximately 5 to 8 minutes (OTFS 2015).

#### *East Nicolaus Fire Department*

The East Nicolaus Fire Department, located at 1988 Nicolaus Avenue in the community of East Nicolaus, serves CSA-A in southeastern Sutter County, including portions of the South of

Palermo Line and the Rio Oso Sub Line Segment Loop. The station is staffed by 12 volunteer firefighters who are on-call and respond 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 8:00 a.m. to 5:00 p.m. The station has three engines and a water tender. Response times vary depending on the call's location. The maximum estimated response time is approximately 16 minutes. Response times may be shorter depending on the location of the volunteer firefighters and whether assistance is provided by Wheatland Fire Department for incidents located close the Yuba County border.

#### *City of Oroville*

*City of Oroville Fire Department*

Oroville Fire Station One, located at 2055 Lincoln Street, serves the city of Oroville including a portion of the South of Palermo Line. The City of Oroville Fire Department (OFD) consists of 18 full-time personnel, 1 full-time administrative assistant, and 10 part-time fire interns. Fire Station One houses three fire engines, three command vehicles, and two support vehicles. The OFD is committed to maintaining service levels that include placing a first-due unit at the scene of an emergency within 5 minutes travel time for 90 percent of the city's population (City of Oroville 2015).

#### *City of Marysville*

*Marysville Fire Department*

The Marysville Fire Department (MFD) serves residents of an approximately 85-square-mile area that includes the city of Marysville, community of Hallwood, and the surrounding areas. The MFD station is located at 107 Ninth Street, and serves an area north of Marysville to the Butte County border, including a portion of the South of Palermo Line The station is staffed by one battalion chief, one fire captain, and two fire apparatus engineers, all of whom are on duty daily. The MFD also has 16 volunteer firefighters. The station houses two engines, a ladder truck, and a water tender. The MFD's response time to the project area is estimated to be approximately 4 to 6 minutes (MFD 2015).

#### *Yuba City*

*Yuba City Fire Department*

The YCFD, located at 824 Clark Avenue, serves the portion of the project area in Yuba City. Five stations are staffed by 48 paid firefighters, 42 of whom work full time. Each station has a fire engine, totaling five for the entire department. Response times vary depending on the call's location. The maximum estimated response time is approximately 6.2 minutes (YCFD 2015).

### 3.14.3.2 Police Protection

#### *Butte County*

The BCSD serves the project area in unincorporated Butte County. The BCSD's main office is located at 33 County Center Drive in Oroville. Depending on an incident's proximity to Oroville, the BCSD may contact the Oroville Police Department (OPD) to assist with a call. Call response times are difficult to predict because the patrolling officers' locations vary. If officers are not already handling a call when a new call comes in, response times to the project area could

be several minutes. However, if officers are handling calls, the response time to a new call in the project area could be significantly longer (BCSD 2015).

#### *Yuba County*

The Yuba County Sheriff's Office serves the project area that is within Yuba County. The sheriff's office is headquartered at 215 Fifth Street, Suite 150, in Marysville, and is staffed by 55 patrol personnel. These personnel patrol the entire county, with seven patrols running during most of the day and five to six patrols running during the graveyard shift. The estimated response time depends on the type of call received. The average response time for high-priority calls is approximately 9 minutes. The response time for the lowest-priority call could be as long as 30 minutes.

#### *Sutter County*

The Sutter County Sheriff's Department, located at 1077 Civic Center Boulevard in Yuba City, serves the project area in Yuba City, the city of Live Oak, and unincorporated Sutter County. The department is staffed by 30 law enforcement deputies and K-9 units. Because the deputies patrol throughout the county, response times to the project area depend on the patrols running at the time of the incident, the nature of the incident, and the incident's proximity to Yuba City, where the Sheriff's Department sometimes utilizes Yuba City Police Department (YCPD) to assist with calls. Given these factors, the response time to the project area could vary from approximately 15 to 30 minutes (Sutter County 2011).

#### *City of Oroville*

The OPD provides service to an approximately 12.5-square-mile area. It operates a single central police station, located at 2055 Lincoln Street, that has 21 sworn personnel, including a K-9 officer, and 14 non-sworn positions. The OPD has a response time goal of less than 4 minutes for emergencies, and 20 minutes for non-emergencies (City of Oroville 2008).

#### *City of Marysville*

The Marysville Police Department (MPD) serves the project area within the city of Marysville. The MPD is staffed with approximately 18 full-time officers, including one chief, two lieutenants, four sergeants, and nine patrol officers. Additional staff members include 13 part-time reserve officers, 5 civilian employees, 6 public safety dispatchers, 9 volunteers, and 5 cadets (MPD 2015). The MPD has an average response time of approximately 3 minutes (MPD 2013).

#### *Yuba City*

The YCPD, located at 1545 Poole Boulevard, serves the project area in Yuba City. The department is staffed by 65 law enforcement officers. Response times depend on patrols running at the time of the incident, the nature of the incident, and the proximity to the station. Given these factors, response times to the project area could vary from approximately 1 to 5 minutes (YCPD 2015).

### 3.14.3.3 Schools

There are 17 schools within 0.5 mile of the project, including preschools, elementary schools, middle schools, high schools, and a community college. The school districts and approximate

distances from the project are provided in Table 3.15-2 and shown on Figure 3.15-1, in Section 3.15, Recreation.

#### 3.14.3.4 Parks

##### *Federal*

There are no federal recreational facilities located within 0.5 mile of the project.

##### *State*

There are no state recreational facilities located within 0.5 mile of the project.

##### *Local*

There are 19 parks and recreational areas within 0.5 mile of the project. The parks and approximate distances from the project are provided in Table 3.15-2 and shown on Figure 3.15-1 in Section 3.15, Recreation.

#### 3.14.3.5 Other Public Facilities

One public library and one hospital are located within 0.5 mile of the project. The Browns Branch Library is located at 1248 Pacific Avenue in the community of Rio Oso, approximately 0.3 mile east of the project. Harmony Medical Center is located at 1908 North Beal Road in Marysville, approximately 0.2 mile west of the project.

### 3.14.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts on public services derived from Appendix G of the CEQA Guidelines and assess potential project-related construction and operational impacts.

#### 3.14.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on public services was evaluated for each of the criteria listed in Table 3.14-1, as discussed in Section 3.14.4.3.

#### 3.14.4.2 Applicant-Proposed Measures

No APMs are suggested because project construction, operation, and maintenance will have no impact on public services.

#### 3.14.4.3 Potential Impacts

Project impacts on public services were evaluated against the CEQA significance criteria and are discussed in further detail below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; therefore, no operations-related impacts related to public services will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing structures (where required), and establish required access and work areas, as described in Chapter 2.0, Project Description.

**a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government 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 following public services: fire protection, police protection, schools, parks, other public facilities? *No Impact***

Project construction will result in a temporary, short-term increase of up to approximately 45 construction workers in the project area. Although construction workers traveling to the project area may use existing public services or amenities, this potential increase in demand will be minimal and temporary, and will not require new or altered government facilities. The project will not include development of new residential units that will directly or indirectly increase population; therefore, no increase in the demand for public services in the area will occur. Furthermore, no new or altered public facilities are needed. Therefore, no impact will occur.

### *Fire and Police Protection*

As described in Section 3.16, Transportation and Traffic, during project construction, PG&E will coordinate any road closures with emergency service providers so that response times will not be affected.

### *Schools*

As shown on Figure 3.15-1 and in Table 3.15-2 in Section 3.15, Recreation, there are 17 schools within 0.5 mile of the project. Potential air quality, noise, and hazards and hazardous materials impacts on these schools resulting from the project are described in Section 3.3, Air Quality, Section 3.11 Noise, and Section 3.8, Hazards and Hazardous Material, respectively. The project will not involve developing new residential units or services that will generate a new residential population in the area. Therefore, the project will not cause an increase in the demand on existing schools that would affect school enrollment or performance objectives. No impact will occur.

### *Parks*

As shown on Figure 3.15-1 and Table 3.15-2 in Section 3.15, Recreation, 19 parks are located within 0.5 mile of the project. The project will not involve developing new residential units or services that will generate a new daytime or residential population in the area that will increase the demand on parks. Construction workers traveling to the area may use existing public services or amenities such as parks; however, this potential increase in demand will be temporary and minimal (a maximum of approximately 45 crew members will be involved in project

construction at one time) and will not exacerbate the need for or deterioration of the park facilities or result in the need for new facilities. No impact will occur.

#### *Other Public Facilities*

One public library and one hospital are located within 0.5 mile of the project. The project will not require the expansion of, or result in an adverse impact on, other types of public facilities, including libraries and hospitals. The project will not involve developing new residential units or services that will generate a new residential population in the area and thus would not create an increased demand for public facilities. No impact will occur.

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# 3.15 RECREATION

## 3.15.1 INTRODUCTION

This section describes existing conditions and potential impacts on recreation as a result of construction, operation, and maintenance of the project and concludes that no impacts will occur in this resource area. The project will not introduce new housing or a significant number of jobs into the area that could increase the use of existing parks, and will not require the introduction of new park facilities. Temporary construction impacts on parks—such as dust, noise, and hazards—are discussed in Sections 3.3. Air Quality, 3.12. Noise, and 3.8. Hazards and Hazardous Material, respectively. The project's potential effects on recreation were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.15-1 and discussed in more detail in Section 3.15.4.

**Table 3.15-1: CEQA Checklist for Recreation**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☐ | ☒ |

## 3.15.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.15.2.1 Regulatory Background

No federal, state, or local regulations related to recreation are applicable to the project.

### 3.15.2.2 Methodology

Recreation resources considered in this analysis include recreational facilities such as private, local, state, and regional parks. The following sources were consulted to identify parks and recreation facilities within 0.5 mile of the project: California Department of Parks and Recreation's website, Public Facilities and Services Element of the Butte County General Plan, Public Services Element of the Sutter County General Plan, Natural Resources Element of the Yuba County General Plan, City of Oroville General Plan, City of Marysville General Plan, Yuba City General Plan, the Olivehurst Public Utility District and Feather River Recreation and Park District's websites, and aerial maps.

## 3.15.3 ENVIRONMENTAL SETTING

### 3.15.3.1 Regional Setting

The project area spans portions of Butte, Yuba, and Sutter Counties and the cities of Marysville, Oroville and Yuba City, and is located between the communities of Oroville to the north and East Nicolaus to the south, near the communities of Oroville, Palermo, Honcut, Tierra Buena, Yuba City, Marysville, Linda, Olivehurst, Plumas Lake, Rio Oso, and East Nicolaus. There are no regional recreational areas in the project area. The regional recreational areas closest to the project are the Oroville Wildlife Area, located approximately 4 miles northwest of the project area along Feather River; and the South Yuba River State Park, located approximately 22 miles east of the project area.

### 3.15.3.2 Local Setting

The Olivehurst Community Park is located adjacent to the project area. One PG&E structure is located within the Peach Tree Golf and Country Club, a private recreational facility. Table 3.15-2 lists existing parks and recreational facilities located within 0.5 mile of the project area. Refer to Figure 3.15-1 for a map of parks and recreational areas within 0.5 mile of the project.

**Table 3.15-2: Parks and Recreational Facilities within 0.5 Mile of the Project Area**

| Schools, Parks, and Recreational Facilities | County/City | Ownership/Management | Approximate Distance to Project Area |
|---|---|---|---|
| Palermo Community Day[1] Schools | Butte County/Palermo | Public/Palermo Union School District | 0.40 mile |
| Palermo Middle School[1] | Butte County/Palermo | Public/Palermo Union School District | 0.40 mile |
| Palermo Preschool[1] | Butte County/Palermo | Public/Palermo Union School District | 0.40 mile |
| Palermo Park | Butte County/Palermo | Public/Feather River Recreation and Park District | 0.40 mile |
| Peach Tree Golf and Country Club | Yuba County/Marysville | Privately owned | Within Project Area |
| Linda Elementary School | Yuba County/Marysville | Public/Marysville Joint Unified School District | 0.10 mile |
| Edgewater Elementary School | Yuba County/Marysville | Public/Marysville Joint Unified School District | 0.30 mile |
| Yuba College | Yuba County/Marysville | Privately owned | Adjacent, 0.15 mile |
| Gavin Park | Yuba County/Marysville | Public/Marysville | 0.40 mile |
| Ella Elementary School | Yuba County/Olivehurst | Public/Marysville Joint Unified School District | 0.50 mile |
| Yuba Gardens Intermediate School | Yuba County/Olivehurst | Public/ Marysville Joint Unified School District | Adjacent, 0.01 mile |

| Schools, Parks, and Recreational Facilities | County/City | Ownership/Management | Approximate Distance to Project Area |
|---|---|---|---|
| Lindhurst High School | Yuba County/Olivehurst | Public/ Marysville Joint Unified School District | 0.10 mile |
| Johnson Park Elementary School | Yuba County/Olivehurst | Public/ Marysville Joint Unified School District | 0.30 mile |
| Olivehurst Elementary School | Yuba County/Olivehurst | Public/ Marysville Joint Unified School District | 0.30 mile |
| Chestnut Park | Yuba County/Olivehurst | Public/Olivehurst Public Utility District | 0.50 mile |
| Johnson Park | Yuba County/Olivehurst | Public/Olivehurst Public Utility District | 0.30 mile |
| Lindhurst Memorial Park | Yuba County/Olivehurst | Public/Olivehurst Public Utility District | 0.50 mile |
| Olivehurst Community Park | Yuba County/Olivehurst | Public/Olivehurst Public Utility District | Adjacent, 0.01 mile |
| Tahiti Village Park | Yuba County/Olivehurst | Public/Olivehurst Public Utility District | 0.20 mile |
| Fernwood Park | Yuba County/Linda | Public/Yuba County Department of Public Works | 0.40 mile |
| Prisoner of War /Missing in Action (POW/MIA) Park (Edgewater Park Site) | Yuba County/Linda | Public/Yuba County Department of Public Works | 0.30 mile |
| Bear River Park | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.40 mile |
| Eufay Wood Sr. Memorial Park | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.40 mile |
| Orchard Glen Park | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.30 mile |
| Bill Pinkerton Memorial Park (Rio Del Oro Park 1) | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.30 mile |
| Rolling Hills Park | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.50 mile |
| Veteran's Park (Plumas Lake Park) | Yuba County/Plumas Lake | Public/Olivehurst Public Utility District | 0.50 mile |
| Rio Del Oro Elementary School | Yuba County/Plumas Lake | Public/Plumas Lake Elementary School District | 0.40 mile |
| Cobblestone Elementary | Yuba County/Plumas Lake | Public/Plumas Lake Elementary School District | 0.30 mile |
| Riverside Meadows Intermediate School | Yuba County/Plumas Lake | Public/Plumas Lake Elementary School District | 0.30 mile |

| Schools, Parks, and Recreational Facilities | County/City | Ownership/Management | Approximate Distance to Project Area |
|---|---|---|---|
| Yuba-Sutter Dog Park | Sutter County/Yuba City | Public/Off the Leash Non-Profit Organization | 0.50 mile |
| Mallard Lake Golf Center | Sutter County/Yuba City | Privately owned | 0.40 mile |
| Regency Park | Sutter County/Yuba City | Public/Yuba City | 0.40 mile |
| Barry Elementary School | Sutter County/Yuba City | Public/Yuba City Unified School District | 0.40 mile |
| Browns Elementary School | Sutter County/Rio Oso | Public/Browns Elementary School District | 0.30 mile |
| East Nicholas High School | Sutter County/Trowbridge | Public/East Nicolas Joint High School District | 0.10 mile |
| [1] These schools are located at the same address and are symbolized by one school symbol in Figure 3.15-1. | | | |

## 3.15.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for recreation impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational recreation impacts.

### 3.15.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on recreation were evaluated for each of the criteria listed in Table 3.15-1, as discussed in Section 3.15.4.3.

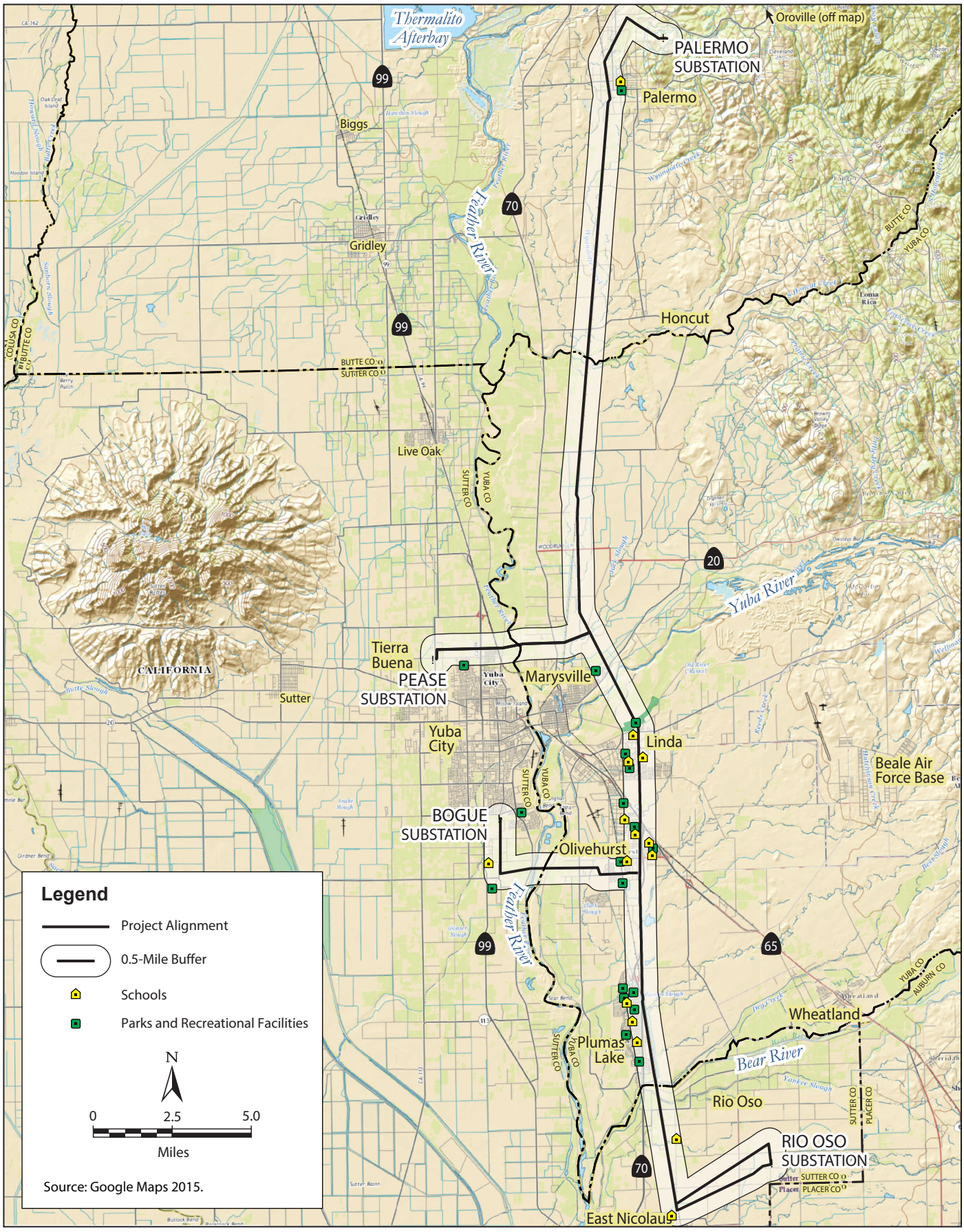
### 3.15.4.2 Applicant-Proposed Measures

No APMs related to recreation are proposed for the project. APMs for temporary construction-related impacts on schools and parks—such as dust, noise, and hazards—are discussed in Sections 3.3, Air Quality, 3.12, Noise, and 3.8, Hazards and Hazardous Material, respectively.

### 3.15.4.3 Potential Impacts

Potential project impacts on recreation were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; therefore, no operations-related impacts related to recreation will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new




Graphics ... 00441.15 Palermo_South (12-22-2015)

**Figure 3.15-1**
**Schools, Parks, and Recreational Facilities within ½ Mile of Project Alignment**
South of Palermo 115 kV Power Line Reinforcement Project

structures (towers and poles), remove old structures (towers and poles), modify existing structures, and establish required access and work areas, as described in Chapter 2.0, Project Description.

**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? *Less than Significant***

The project will not result in any residential or commercial development that will result in increased use of existing parks or other recreational facilities. Workers may use nearby park facilities during project construction, but any increase associated with such use would be small in number and temporary because construction activities would generally take place at any given location for a limited period, estimated to be approximately 1 week. Project construction will not contribute substantially to the physical deterioration of existing facilities. Accordingly, the impact will be less than significant.

The project area crosses a portion of the Peach Tree Golf and Country Club where one existing structure is located. The area adjacent to the existing structure will be closed to club users during construction. However, the remaining facilities at the Peach Tree Golf and Country Club will not be affected during construction. Any restrictions required for public safety during construction will be temporary, as construction activities will generally take place at any given project site for a limited amount of time, estimated to be approximately 1 week. Accordingly, the impact will be less than significant.

**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 will not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, no impact will occur.

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# 3.16 TRANSPORTATION AND TRAFFIC

## 3.16.1 INTRODUCTION

This section describes existing conditions and potential impacts on transportation and traffic as a result of construction, operation, and maintenance of the project. The analysis concludes that, although existing traffic conditions may be temporarily affected by construction of the project, project-related impacts on traffic and transportation will be less than significant. The Applicant-Proposed Measures (APMs), as described in Section 3.16.4.2, will further reduce less-than-significant impacts. The project's potential effects on transportation and traffic were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.16-1 and discussed in more detail in Section 3.16.4.

**Table 3.16-1: CEQA Checklist for Transportation and Traffic**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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? | ☐ | ☐ | ☒ | ☐ |

## 3.16.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.16.2.1 Regulatory Background

#### *Federal*

*Transportation of Hazardous Materials*

The U.S. Department of Transportation (USDOT) and the California Department of Transportation (Caltrans) are the administrating agencies for the following regulations:

- Title 49 Code of Federal Regulations Sections 171 through 177 (49 CFR 171–177) governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399 and Appendixes A through G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs USDOT to establish criteria and regulations for the safe transportation of hazardous materials.

#### *State*

Caltrans owns the rights-of-way for State Routes (SRs), including any on- and off-ramps that provide access to the project area. Any project-related work within SR rights-of-way requires a ministerial encroachment permit from Caltrans.

Caltrans is also the administrating agency for regulations related to traffic safety, including the licensing of drivers, weight and load limitations, transportation of hazardous and combustible materials, and the safe operation of vehicles.

#### *Local*

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local transportation policies, plans or programs for informational purposes and to assist with CEQA review.

*Butte County*

*Butte County General Plan*

The *Butte County General Plan* establishes that the level of service (LOS) for county-maintained roads within the unincorporated areas of the county, but outside municipalities' spheres of influence (SOIs), should be LOS[1] C or better during the PM peak hour (Policy CIR-P6.1). Within a municipality's SOI, the LOS shall meet the municipality's LOS policy (Policy CIR-P6.1). The General Plan also establishes that the LOS on state highways shall at least match the concept LOS for the facility, as defined by Caltrans **(**Policy CIR-P6.2).

[1] LOS—a simple grading system—is used to compare the traffic volume carried by a road with the capacity of that road. The scale ranges from LOS A, which indicates free-flowing traffic, to LOS F, which indicates significant delays (California Department of Transportation 2015). (See Table 3.16-3.)

### *Butte County Bicycle Plan*

The *Butte County Bicycle Plan*, adopted in 2011, is an update of the previously adopted Countywide Bikeway Master Plan. The updated plan includes an emphasis on the regional connectivity between Biggs, Chico, Gridley, Oroville, and Paradise, in addition to several rural communities and recreational opportunities in Butte County. The *Butte County Bicycle Plan* does not contain any policies relevant to the project.

## *Yuba County*

### *Yuba County General Plan*

The *Yuba County General Plan* establishes that county roads in the Valley Growth Boundary should maintain LOS D during the PM peak hour at signalized intersections, as feasible (CD16.2 Level of Service: Roadway System). The General Plan also establishes that county roads in the rural areas shall maintain LOS D during the PM peak hour, as feasible (Policy CD16.3 Level of Service: Roadway System). In addition, the General Plan encourages that the LOS goals included in the adopted Yuba-Sutter Congestion Management Plan for state highways be maintained, as feasible (Policy CD16.4 Level of Service: Roadway System). The General Plan encourages the County to limit truck traffic in the unincorporated area to appropriate routes, with enforcement of maximum weight limits (Policy CD22.2 Goods Movement).

### *Yuba County Bikeway Master Plan*

The *Yuba County Bikeway Master Plan*, adopted in January 2013, is an update to the 1995 *Yuba-Sutter Bikeway Master Plan*. The Bikeway Master Plan establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in Yuba County, as envisioned by the General Plan. The *Yuba County Bikeway Master Plan* does not contain any policies relevant to the project.

## *Sutter County*

### *Sutter County General Plan*

The *Sutter County General Plan* establishes that county roadway segments and intersections should maintain LOS D or better during peak hour, and LOS C or better at all other times, unless otherwise addressed in an adopted specific plan or community plan (Policy M2.5 Streets and Highways).

### *Sutter County Pedestrian and Bicycle Master Plan*

The *County of Sutter Pedestrian & Bicycle Master Plan* provides guidance on new bike facilities as funding becomes available. This plan is also intended to address issues associated with pedestrian circulation in the county. The *County of Sutter Pedestrian & Bicycle Master Plan* does not contain any policies relevant to the project.

## *City of Oroville*

### *City of Oroville General Plan*

The *City of Oroville General Plan* establishes that roadways and intersections should maintain LOS D or better, except as specified in the following (Policy P2.1, Vehicular Circulation):

City/County Roadways:

- Lincoln Boulevard – Baggett Marysville Road to Ophir Road (LOS E)
- Ophir Road – Highway 70 to Lincoln Boulevard (LOS E)
- Ophir Road – Lincoln Boulevard to Lower Wyandotte Road (LOS F)
- Table Mountain Boulevard – Cottonwood Road to Garden Drive (LOS E)

State Facilities:

- Olive Highway – Oroville Dam Boulevard to Lower Wyandotte Road (LOS F)
- Olive Highway – Lower Wyandotte Road to Foothill Boulevard (LOS F)
- Olive Highway – Foothill Boulevard to Oakvale Avenue (LOS F)
- Olive Highway – Oakvale Avenue to Kelley Ridge Road (LOS E)
- Oroville Dam Boulevard – Feather River Boulevard to Olive Highway (LOS F)

Additional exceptions to this policy may be allowed by the City Council on a case-by-case basis, for projects subject to City review.

### *City of Marysville*

#### *The City of Marysville General Plan*

The *City of Marysville General Plan* does not contain any policies relevant to the project.

#### *City of Marysville Bicycle and Pedestrian Plan*

The *City of Marysville Bicycle & Pedestrian Plan*—a working document as of August 2015—describes the existing walking and bicycling conditions in Marysville. The Bicycle and Pedestrian Plan also contains a set of goals and objectives to guide facility development in the city and the community. The Bicycle & Pedestrian Plan does not contain any policies relevant to the project.

### *Yuba City*

#### *Yuba City General Plan*

The *Yuba City General Plan* was adopted on April 8, 2004. The *Yuba City General Plan* establishes that all major roadways and intersections in the City should maintain LOS D or better (Policy 5.2-I-12 Traffic LOS). Exceptions may be allowed by the City Council in areas where allowing a lower LOS would result in clear public benefits. This policy does not extend to residential streets or bridges across the Feather River, nor does the policy apply to state highways and their intersections, where Caltrans policies apply. Specific exceptions include the following (Policy 5.2-I-12, Traffic LOS):

- SR 20 (SR 99 to Feather River Bridge) – LOS F is acceptable;
- SR 20 (Feather River Bridge) – LOS F is acceptable;
- Bridge Street (Twin Cities Bridge) – LOS F is acceptable; and
- Lincoln Road (New Bridge across the Feather River) – LOS F is acceptable.

#### *Yuba City Bicycle Master Plan*

The *Yuba City Bicycle Master Plan* serves as a blueprint for the developing bikeway system between the Marysville and Yuba City and between Yuba and Sutter Counties. The Bicycle Master Plan does not contain any policies relevant to the project.

*Sacramento Area Council of Governments*

*Metropolitan Transportation Plan/Sustainable Communities Strategy 2035*

The *Metropolitan Transportation Plan/Sustainable Communities Strategy 2035* was adopted in 2012 by the Sacramento Area Council of Governments (SACOG). This implementation-focused plan addresses overcoming challenges to plan implementation and making progress on the policy commitments with the goal of accelerating the region's progress toward the transportation, air quality, and quality of life goals.

*Butte County Association of Governments*

*Transit and Non-Motorized Plan*

The *Transit and Non-Motorized Plan* was adopted by the Butte County Association of Governments (BCAG) in May 2015. This transportation plan outlines the transit service and non-motorized transportation enhancements that can be made in Butte County to expand mobility, improve intermodality, improve bikeways and bicycle paths, and improve pedestrian access to transit.

### 3.16.2.2 Methodology

Traffic data and other transportation system information were obtained from maps, literature searches, aerial photographs, and personal communication with state and local government officials. The information was used to evaluate the project, using the CEQA checklist to determine potential impacts. Project activities during construction and operation were evaluated within the context of surrounding transportation and traffic facilities and resources, to determine whether the project may result in changes that will directly or indirectly affect those facilities or resources.

## 3.16.3 ENVIRONMENTAL SETTING

This section includes a description of the roadways that will be used by workers and delivery trucks during construction. Access routes will vary depending on the origin of the worker or truck, and the type of activity that day. Therefore, the roads that are most likely to be affected are described. The highest-volume roadways are described first.

### 3.16.3.1 Regional Roadways

SR 20, SR 65, SR 70, and SR 99 will be used for access to the project area during construction and operation and maintenance. Table 3.16-2 summarizes the characteristics of these roadways.

The operational characteristics of the roadways were evaluated using the average through-vehicle travel speed, as defined in the *Highway Capacity Manual* (Transportation Research Board 2000). The urban street LOS criteria are based on average travel speed and urban street class. Table 3.16-3 lists the urban street LOS criteria as defined in the *Highway Capacity Manual*. The average speed along urban streets is influenced both by density of signals (i.e., the number per mile) and by the intersection control delay. Less-than-optimal signal timing and increased traffic demand can degrade the LOS.

**Table 3.16-2: Existing Traffic Operations**

| Roadway | Peak-Hour Existing Volume (vehicles) | Peak-Hour Design Capacity (vehicles) | Peak Hour V/C[1] Ratio | LOS |
|---|---|---|---|---|
| SR 20 (at 22nd Street) | 1,500 | 1,875 – 2,113 | 0.71 – 0.80 | C |
| SR 65 (at McGowan Road) | 1,850 | 2,313 – 2,605 | 0.71 – 0.80 | C |
| SR 65 (at SR 70 junction) | 1,800 | 0 – 3,000 | 0.00 – 0.60 | A |
| SR 70 (at SR 65 junction) | 3,450 | 0 – 5,750 | 0.00 – 0.60 | A |
| SR 99 (at Oswald Road) | 1,650 | 2,357 – 2,704 | 0.61 – 0.70 | B |
| SR 99 (at Barry Road) | 1,800 | 2,571 – 2,950 | 0.61 – 0.70 | B |
| SR 99 (at Bogue Road) | 2,150 | 3,071 – 3,524 | 0.61 – 0.70 | B |

[1] V/C is volume/capacity ratio, which is an indicator of traffic conditions, speeds, and driver maneuverability.
Sources: Caltrans 2014; Sutter County 2011; Yuba County 2007a.

**Table 3.16-3: Definitions of Study Area Roadway Characteristics**

| LOS | V/C[1] Ratio | Traffic Flow Characteristics |
|---|---|---|
| A | 0.00 – 0.60 | Free flow; insignificant delays |
| B | 0.61 – 0.70 | Stable operations; minimal delays |
| C | 0.71 – 0.80 | Stable operation, acceptable delays |
| D | 0.81 – 0.90 | Approaching unstable flow; queues develop rapidly, but no excessive delays |
| E | 0.91 – 1.00 | Unstable operation; significant delays |
| F | >1.00 | Forced flow; jammed conditions |

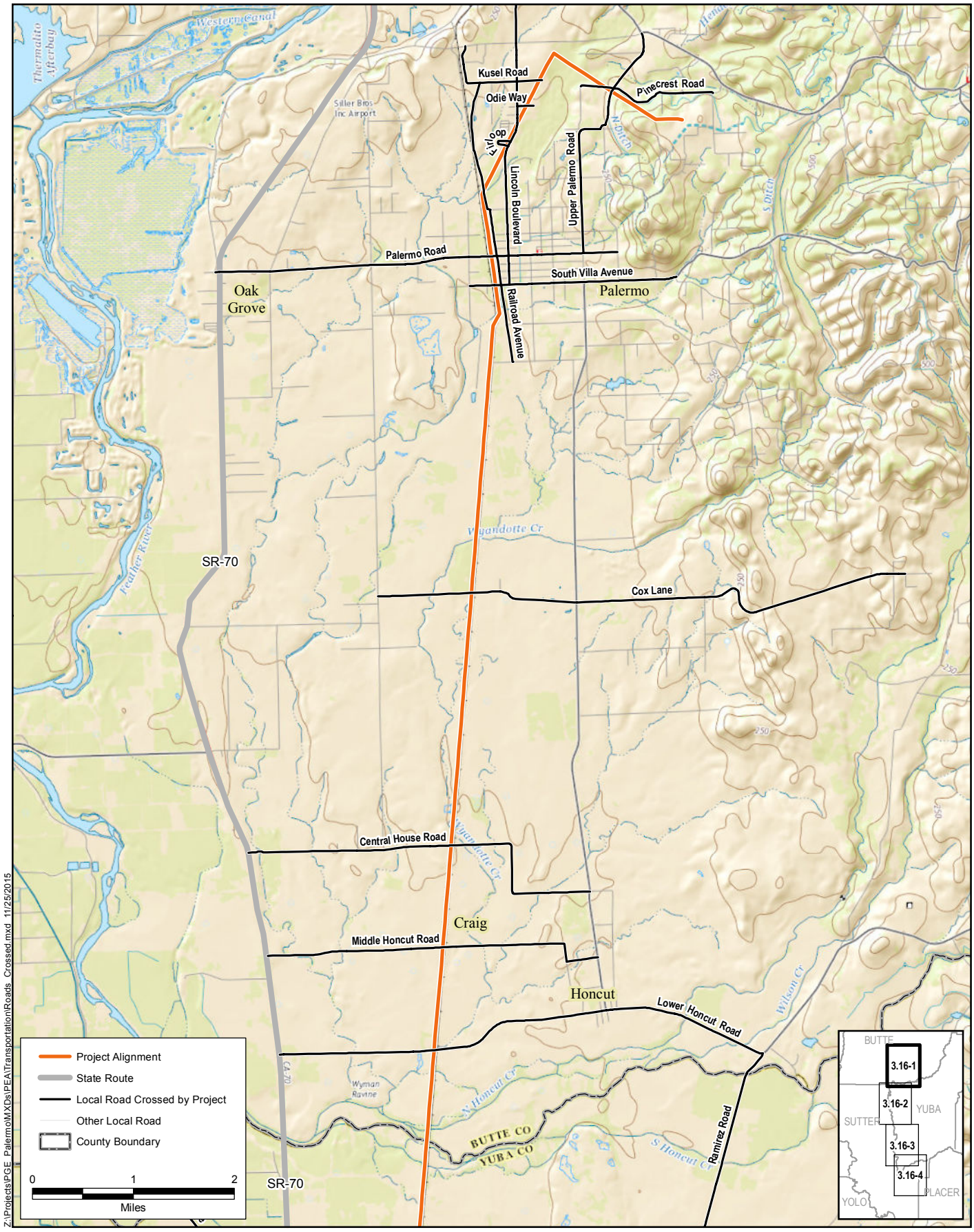
[1] V/C is volume/capacity ratio, which is an indicator of traffic conditions, speeds, and driver maneuverability.
Source: Transportation Research Board 2000.

### 3.16.3.2 Local Roadways

The local transportation network in the project vicinity includes the county- and city-maintained roadways. In addition, rural and farm roads, as well as existing power line maintenance access roads, occur along most of the power line corridors.

*Butte County*

The county roadways crossed by the project in unincorporated Butte County are shown on Figure 3.16-1. Upper Palermo Road, Lincoln Boulevard, Palermo Road, and Lower Honcut Road have an LOS C or better projected to year 2025. The LOS for the remaining roadways was not identified in the Butte County Setting and Trends Report, which shows 2006 peak-hour LOS for local roads of regional significance that connect population centers with industrial, commercial, recreational, and other important uses (Butte County 2010).




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**Figure 3.16-1**
**Roadways Crossed in Butte County**
South of Palermo 115 kV Power Line Reinforcement Project

*Yuba County*

The county roadways crossed by the project in unincorporated Yuba County are shown on Figure 3.16-2. Ramirez Road, Hammonton Smartville Road, North Beale Road, Erle Road, McGowan Parkway, Arboga Road, and Feather River Boulevard currently operate at LOS C or better. The LOS for the remaining roadways was not identified in the *Yuba County General Plan Update Background Report*, which shows 2006 peak-hour LOS for local roads of regional significance (Yuba County 2007a).

*Sutter County*

The county roadways crossed by the project in unincorporated Sutter County are shown on Figure 3.16-3. Sutter County has adopted LOS D as the minimum acceptable standard for county roadways. Rio Oso Road and Pleasant Grove Road operate at LOS C or better, and therefore currently meet the adopted standard. The LOS for the remaining listed roadways (Cornelius Avenue, Pacific Avenue, Warren Avenue, Hicks Road, and Waltz Road) was not identified in the Sutter County *General Plan Technical Background Report*, which shows 2006 peak-hour LOS for local roads of regional significance (Sutter County 2008).

*City of Oroville*

In Oroville, the project will cross Railroad Avenue. The LOS for Railroad Avenue was not identified in the *City of Oroville General Plan* Circulation and Transportation Element (City of Oroville 2015).

*City of Marysville*

The project will cross Levee Road in Marysville. The LOS for Levee Road was not identified in the *City of Marysville General Plan* and the *Yuba County General Plan Update Background Report*, which shows 2006 peak-hour LOS for local roads of regional significance (Yuba County 2007a).

*Yuba City*

The project will cross East Onstott Road in Yuba City. The LOS for East Onstott Road was not identified in the *Yuba City General Plan* (Yuba City 2004).

### 3.16.3.3 Existing Traffic Volumes and Levels of Service

*State Routes*

Four SRs—SR 20, SR 65, SR 70, and SR 99—are located in the project area and will provide access the project. Table 3.16-2 summarizes the operational information for these SRs. On state highway segments, Caltrans considers LOS D or better to be acceptable for planning purposes. No segments of these SRs operate at an unacceptable LOS within the project area.

### 3.16.3.4 Bicycle Facilities

*Butte County*

The *Butte County Bicycle Plan* describes existing bikeways in Butte County. None of the bikeways in the Butte County Bicycle Plan are in the project vicinity.

### *Yuba County*

The *Yuba County Bikeway Master Plan* describes existing bikeways in Yuba County. Bikeways within 1 mile of the project include Class II bike lanes,[2] Class II bike lanes with minor deficiencies,[3] and Class II bike lanes with major deficiencies.[4]

These existing bikeways include the following:

Class II Bike Lanes:

- North Beale Road
- Ella Avenue
- Argoba Road
- River Oaks Boulevard
- Plumas Argoba Road
- River Oaks Boulevard

Class II Bike Lanes with Minor Deficiencies:

- Linda Avenue
- Beale Road
- Hammonton Smartville Road
- Dunning Avenue
- Erle Road
- McGowan Parkway
- Powerline Road
- Plumas Argoba Road
- River Oaks Road
- River Oaks Boulevard

Class II Bike Lanes with Major Deficiencies:

- Dunning Avenue
- Hammonton Smartville Road
- Erle Road
- Griffith Avenue
- McGowan Parkway

### *Sutter County*

The *Sutter County Pedestrian and Bicycle Master Plan* describes the existing bikeways in Sutter County. None of the bikeways in the Sutter County bicycle plan are in the project vicinity.

[2] According to the *Yuba County Bikeway Master Plan*, Class II Bike Lanes are "bike lanes within paved streets identified with striping, stencils, and signs for preferential (semi-exclusive) bicycle use."

[3] According to the *Yuba County Bikeway Master Plan*, Class II Bike Lanes with Minor Deficiencies "do not meet all applicable design criteria, but could meet Class II standards with relatively minor improvements (i.e., additional signage, striping, stencils, etc.)"

[4] According to the *Yuba County Bikeway Master Plan*, Class II Bike Lanes with Major Deficiencies "do not meet all applicable design criteria, and would require relatively high cost improvements to do so (i.e., roadway widening)

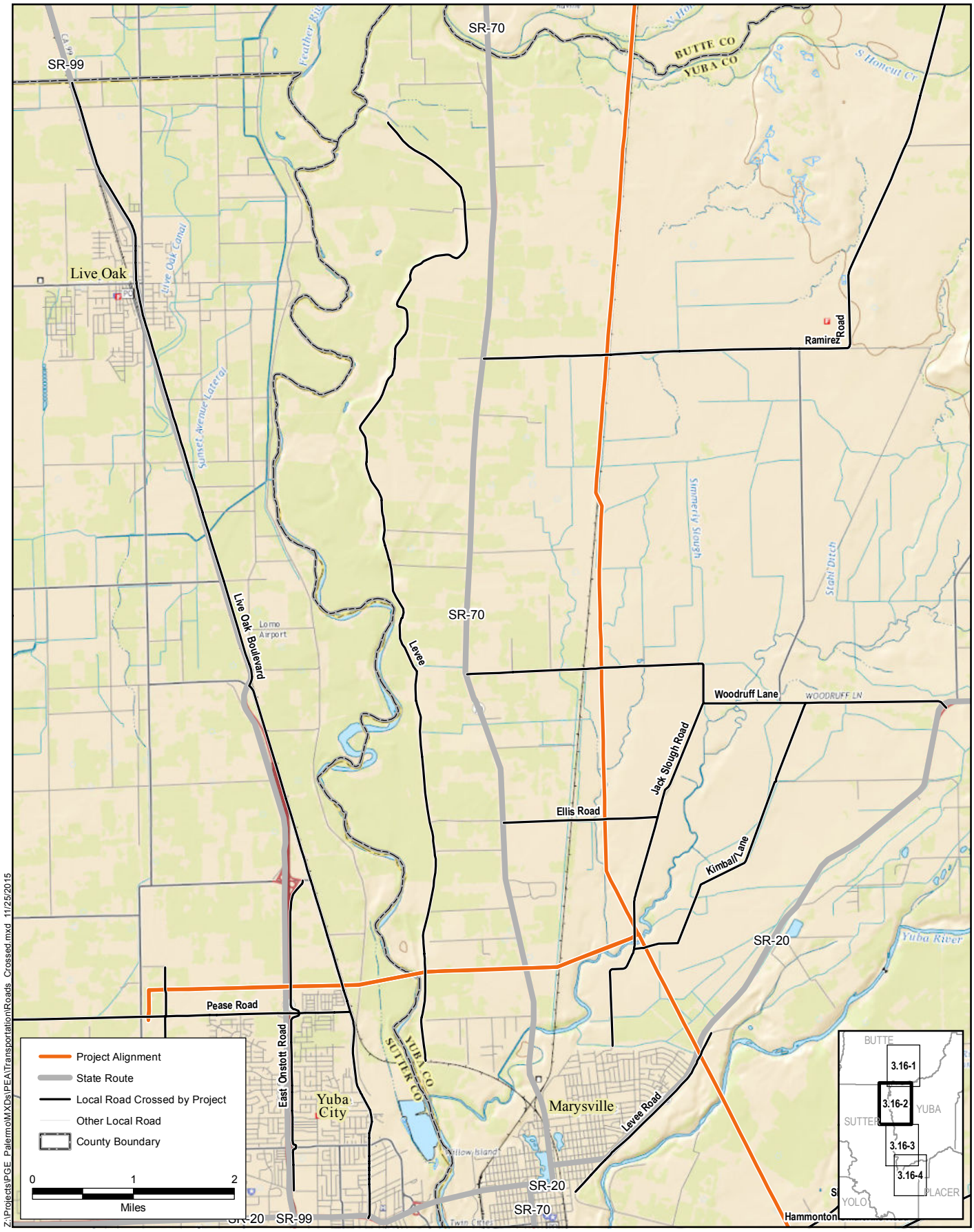
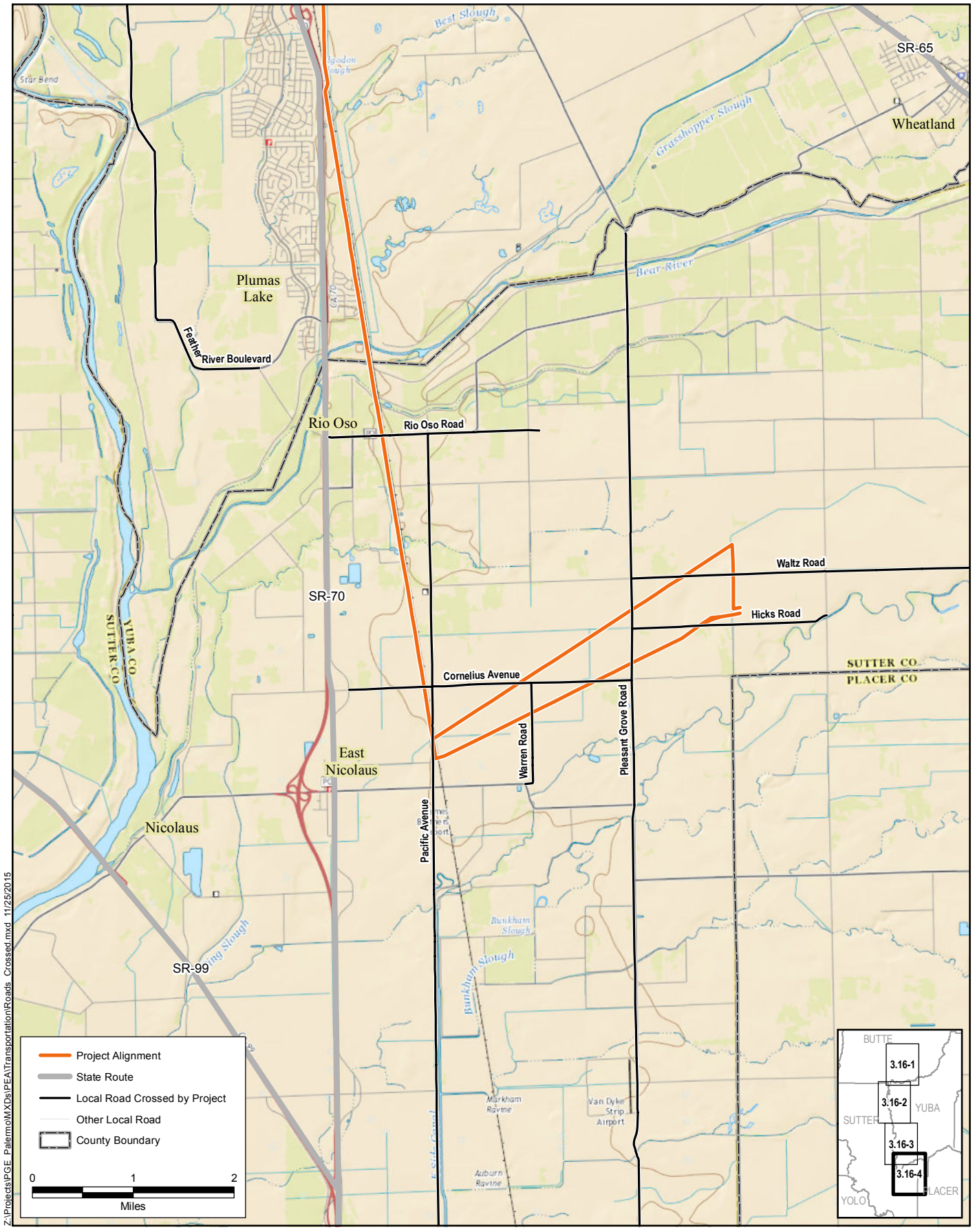



**Figure 3.16-2**
**Roadways Crossed in Yuba County Map 1**
South of Palermo 115 kV Power Line Reinforcement Project




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**Figure 3.16-3**
**Roadways Traversed or Crossed in Yuba County Map 2**
South of Palermo 115 kV Power Line Reinforcement Project




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**Figure 3.16-4**
**Roadways Traversed or Crossed in Sutter County**
South of Palermo 115 kV Power Line Reinforcement Project

*City of Marysville*

The *City of Marysville Bicycle & Pedestrian Plan* describes the existing bikeway facilities in the City of Marysville. Only one bikeway, Levee Road, is in the project vicinity. This bikeway is a Class I shared use path.[5]

*Yuba City*

The *Yuba City Bicycle Master Plan* describes the existing bicycle facilities in Yuba City. None of the bikeways in the Yuba City Bicycle Master Plan are in the project vicinity.

### 3.16.3.5 Air Traffic

Two public airports are located within 2 miles of the project area: Yuba County Airport and Sutter County Airport, approximately 1.2 miles of the central portion of the project alignment project and 1.9 mile northeast of the westernmost segment of the alignment, respectively. One private use airport—Siller Bros Inc. Airport—is located approximately 1.6 miles west of the northern portion of the project alignment.

In addition to these facilities, the Oroville Airport is located 4 miles northwest of the northern portion of the project alignment, the Sacramento International Airport is approximately 14.5 miles south of the southern portion of the alignment, and the privately-owned Rio Linda Airport is approximately 16.5 miles south of the southern portion of the alignment.

### 3.16.3.6 Transit and Rail Services

*Butte Regional Transit*

Butte Regional Transit, also known as the B-Line, is Butte County's regional public transit system. The B-Line serves the cities of Chico and Oroville and the Town of Paradise, and also accommodates travel within Butte County 7 days a week. However, some routes do not operate every day (Butte County 2015).

*Yuba-Sutter Transit*

Yuba-Sutter Transit operates six bus routes, providing Yuba City, Marysville, Linda, and Olivehurst with 24-hour service Monday through Friday and 12-hour service on Saturdays. Fixed local route service is available on weekdays from 6:30 a.m. to 6:30 p.m. and from 8:30 a.m. to 5:30 p.m. on Saturdays (Yuba County 2015). Yuba-Sutter Transit also offers two weekday commuter bus routes—the Sacramento Commuter Express and the Sacramento Midday Express—operating between Marysville and Sacramento (Yuba County 2007b).

The local Dial-A-Ride service provides curb-to-curb shared ride service within approximately 2 miles of Yuba-Sutter Transit's local fixed routes in Yuba County (Yuba County 2007b). This service operates during regular weekday and Saturday fixed-route service hours and on weekdays from 6:00 a.m. to 9:30 p.m. Ridership is available only to seniors age 62 and older, persons with disabilities, and those with a destination that is more than 0.5 mile from a fixed route.

[5] According to the *City of Marysville Bicycle & Pedestrian Plan*, Class I Bicycle of Shared Use Paths "provide for bicycle and pedestrian travel on a paved right-of-way completely separated form streets or highways."

Commercial bus service is provided in Yuba County by Greyhound and Amtrak, with service stops in Marysville. Greyhound and Amtrak also provide connecting service to Chico and Sacramento, with statewide and national connections (Yuba County 2007b).

## 3.16.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for transportation and traffic impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operation and maintenance impacts on transportation and traffic.

### 3.16.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to transportation and traffic were evaluated for each of the criteria listed in Table 3.16-1, as discussed in Section 3.16.4.3.

### 3.16.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

***APM TRA-1: Temporary Traffic Controls***

PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to state route crossings and the transport of oversized loads and certain materials, and will comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. PG&E will develop road and lane closure or width reduction or traffic diversion plans as required by the encroachment permits. Construction activities that are in or along or that cross local roadways will follow best management practices and local jurisdictional encroachment permit requirements—such as traffic controls in the form of signs, cones, and flaggers—to minimize impacts on traffic and transportation in the project area.

***APM TRA-2: Air Transit Coordination***

PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E will comply with all applicable Federal Aviation Administration (FAA) regulations regarding air traffic within 2 miles of the project alignment.
- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction.
- Helicopter use and landing zones will be managed to minimize impacts on local residents. PG&E will submit to CPUC staff a Helicopter Use Plan, which will identify the anticipated landing zones, flight paths and general helicopter operation procedures.

***APM TRA-3: Coordinate Road Closures with Emergency Service Providers***

At least 24 hours prior to implementing any road or lane closure, PG&E will coordinate with applicable emergency service providers in the project vicinity. PG&E will provide emergency service providers with information regarding the road or lanes to be closed; the anticipated date, time, and duration of closures; and a contact telephone number.

### 3.16.4.3 Potential Impacts

Project impacts on transportation and traffic were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; therefore, no operations-related impacts related to transportation and traffic will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing structures, and establish required access and work areas, as described in Chapter 2.0, Project Description.

**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***

Most construction activities will occur within PG&E's existing easements and use of regional or local roadways will be limited. Where possible, helicopters will be used to remove, modify, and install structures, which will minimize ground disturbance. Where helicopter use is not feasible, cranes will be used. Trucks will be used to access and bring materials to structure sites. During reconductoring, crossing structures will be installed where the project alignment crosses major roads, such as SRs 20, 65, 70, and 99, and other major roadways, to allow traffic to safely use the road while existing conductor is removed and new conductor is put in place. Temporary road or lane closures may be required at various locations to ensure public safety. However, if road and lane closures are necessary, they will be temporary and any effect on the operations of these roadways or the overall circulation system at any given location along the route will be minimal.

Operation of Class I and Class II bike routes and mass transit routes in the project area may be temporarily affected when truck traffic is accessing a structure location and when road or lane closures are necessary. Several roadways in Yuba County and Levee Road in Marysville have designated bike routes within the project area. Temporary closures of these bike lanes may occur along with the road and lane closures. Mass transit, particularly bus routes operated by Yuba-Sutter Transit along McGowan Parkway and North Beale Road, may also be subject to delays caused by temporary road closures during reconductoring. However, road and lane closures that

may affect these routes will also be temporary and will only result in temporary delays of service. Based on the temporary nature of any necessary closures to roadways, bike lanes, or bus routes and with PG&E's implementation of APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities, impacts will 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***

The project is located in an area that is sparsely populated and, as described in Section 3.16.3.2, roadways in the project area generally operate at LOS C or better. Although construction activities may generate slight increases in traffic on interstate highways, SRs, and local roads, the effects will be minimal, short term, and periodic, and will not affect the overall LOS standards on regional roadways established by the county congestion management agencies. In addition, PG&E will implement APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities. Accordingly, impacts will be less than significant.

**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***

Helicopters will be used in addition to ground equipment to remove, modify, and install structures to minimize ground disturbance. To accommodate helicopter use, up to 27 helicopter landing zones have been preliminarily identified. Helicopter landing zones are typically up to 1 acre in size, but the exact locations and footprint of a landing zone will depend on conditions on the ground at the time of construction. PG&E will prepare a Helicopter Use Plan, which will identify the anticipated landing zones, flight paths and general helicopter operation procedures and will be submitted separately to CPUC staff. In accordance with APM TRA-2, PG&E's helicopter operator will follow protocols regarding air traffic and will comply with FAA requirements before and during all construction-related helicopter operations. With implementation of APM TRA-2, impacts on air traffic patterns will be less than significant.

The majority of construction activities that will involve the use of helicopters will be located within a PG&E right-of-way, away from residences, and will not result in substantial safety risks. Helicopters that are carrying equipment or construction materials will not pass directly over major highways or habitable structures. Accordingly, the impact will be 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)? *No Impact***

Project construction will not alter any public roadways or intersections, including access roads to power lines, towers or poles, and substations, nor will it introduce incompatible uses to the project area. Some existing access roads may be reestablished as part of construction activities, as necessary; however, these roads have been previously used for maintenance activities for the existing power lines. In some cases, additional temporary overland routes may be required. Any

road or lane closures that will occur on private and county roads will be temporary and short term, consistent with applicable regulations, and will be coordinated with the county or property owner(s). Therefore, the project will not increase hazards due to design features of roadways. No impact will occur. In addition, where the installation of crossing guard structures is required, APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities, will further reduce any impacts.

**e) Would the project result in inadequate emergency access? *Less than Significant***

Emergency access routes will be maintained throughout project construction and operation. Construction vehicles and equipment are anticipated to access project construction areas for towers and poles by using existing paved, dirt, or gravel roads and overland travel routes. In addition, helicopters will be used to access more than one tower. Construction vehicles and equipment needed at the pull sites are expected to be staged or parked within project area rights-of-way, approved temporary construction easements, or alongside access roads. Any road or lane closures will be temporary and short-term, and these closures will be coordinated with Caltrans and local jurisdictions to reduce the potential temporary and short-term effects on emergency access. Although such closures can indirectly affect emergency access by causing congestion that could slow response times, emergency vehicles will be provided access even in the event of temporary road or lane closures. In addition, PG&E will implement APM TRA-3, which requires that PG&E coordinate road and lane closures with emergency service providers. Accordingly, impacts will be less than significant. APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities, will further minimize any less-than-significant impact on traffic congestion.

**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***

Construction will generally occur within existing transmission line easements and will not involve any activities that conflict with transportation policies, plans, or programs.

The project will have no lasting impact on demand for alternative transportation or on alternative transportation facilities because the project will not result in population growth in the project area. Project construction could temporarily disrupt bus access. Bus routes on streets may need to be temporarily detoured, and bus stops temporarily relocated. PG&E will implement APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities, to minimize impacts on bus access.

Class I and Class II bike lanes could be temporarily affected by construction. Road and lane closures may temporarily detour bikeways, but impacts will be short-term and temporary. In addition, alternate bike routes are available nearby. PG&E will implement APM TRA-1, which requires that traffic controls and other traffic safety measures are in place to maintain proper traffic flow on both local and regional roadways during temporary construction activities, and may address developing detours for these closures.

Pedestrian access on sidewalks may be halted during stringing activities; however, these closures will be temporary.

Any impacts on public transit, bicycle, or pedestrian facilities will be temporary and less than significant.

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# 3.17 UTILITIES AND SERVICE SYSTEMS

## 3.17.1 INTRODUCTION

This section describes existing conditions and potential impacts on utilities and service systems as a result of construction, operation, and maintenance of the project, and concludes that no impacts will occur in these areas. Under CEQA, utilities and service systems include water, wastewater, and solid waste collection and treatment. This section also addresses potential impacts on power, natural gas, and communications systems.

The project's potential effects on utilities and service systems were evaluated to using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.17-1 and discussed in more detail in Section 3.17.4.

**Table 3.17-1: CEQA Checklist for Utilities and Service Systems**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | 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 storm water 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? | ☐ | ☐ | ☐ | ☒ |

## 3.17.2 REGULATORY BACKGROUND AND METHODOLOGY

### 3.17.2.1 Regulatory Background

#### *Federal*

No federal regulations pertaining to utilities and service systems are applicable to the project.

#### *State*

*California Government Code*

Section 4216 of the California Government Code protects underground structures during excavation. Under this law, excavators are required to contact a regional notification center at least 2 days prior to excavation of any subsurface installations. In the project area, Underground Service Alert (USA) is the regional notification center. USA notifies utility providers with buried lines within 1,000 feet of the excavation, and those providers are required to mark the specific location of their facilities prior to excavation. The code also requires excavators to probe and expose existing utilities, in accordance with state law, before using power equipment.

#### *Local*

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. The following summary of local statues and regulations relating to solid waste is provided for informational purposes and to assist with CEQA review.

*Butte County*

The *Butte County General Plan* establishes that construction sites shall provide for the salvage, reuse, or recycling of construction and demolition materials (Policy PUB-P11.2 Solid Waste and Waste Diversion). In addition, the General Plan establishes that innovative strategies shall be employed to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer, and processing (Policy PUB-9 Solid Waste and Waste Diversion).

*Yuba County*

The *Yuba County General Plan* does not contain any policies pertaining to utilities.

*Sutter County*

The *Sutter County 2030 General Plan* includes various policies to ensure safe and efficient disposal of solid waste, while reducing the county's waste stream (Goal I 4 Solid Waste). The General Plan also encourages implementation of the County's climate action plan, completed in 2010, reduction measures targeted to reduce the county's waste stream, including solid waste reduction, construction waste diversion, and public education on solid waste reduction and recycling (Policy I 4.1 Solid Waste).

*City of Oroville*

The *City of Oroville 2030 General Plan* encourages the collection, storage, transportation, recycling, and disposal of solid waste in ways that are safe, sanitary, and environmentally acceptable, while striving to reduce overall generation of solid waste (Goal PUB-9 Solid Waste).

*City of Marysville*

The *City of Marysville General Plan* does not contain any policies pertaining to utilities.

*Yuba City*

The *Yuba City General Plan* includes a guiding policy that the City meet its solid waste disposal needs, while maximizing opportunities for waste reduction and recycling (Policy 7.3-G-1 Solid Waste Management and Recycling).

#### 3.17.2.2 Methodology

Existing conditions were determined from a review of published literature and an examination of aerial photographs. Descriptions of public utilities in the project area were derived from current general plans and municipal service review background reports for Butte County, Yuba County, Sutter County, the City of Marysville, the City of Oroville, and Yuba City.

### 3.17.3 ENVIRONMENTAL SETTING

#### 3.17.3.1 Wastewater Collection and Treatment Services

The project would not require either connection to sewer service or installation of a private septic system because it is a temporary construction project. Portable toilets will be provided as needed at work sites and waste will be disposed of at appropriately licensed off-site facilities. The following information is provided for background.

***Butte County***

Butte County has approximately 50,000 on-site sewage disposal systems (i.e., septic systems) that serve approximately half of the county's population. Approximately 75 percent of the systems fall under County jurisdiction. Standard septic tank leach field systems have historically been the common practice in most of the unincorporated areas of the county, requiring and receiving relatively limited oversight from the County Environmental Health Division and the Central Valley RWQCB (Butte County 2007).

***Yuba County***

A variety of wastewater service providers serve Yuba County and the project area, including the following:

- The Linda County Water District (LCWD), which includes the community of Linda and provides wastewater collection, treatment, and disposal services to approximately 3,360 connections. The LCWD owns and operates a wastewater treatment plant and sewer collection infrastructure, and there are no septic systems inside the district's boundaries. In 2012, the LCWD completed an upgrade and expansion of the existing 1-million-gallon-per-day (MGD) wastewater plant to a 5 MGD Title 22 Reclaimed Water Facility (Lyles Construction Group 2015).

- The Olivehurst Public Utilities District (OPUD), which includes the communities of Olivehurst and Plumas Lake, provides wastewater collection, treatment, and disposal services to 5,221 connections. The OPUD owns and operates a wastewater treatment plant and sewer collection infrastructure, but relies on outside contractors for system repairs.

Portions of the project area that lie outside the service areas of these providers do not receive central wastewater treatment services. Instead, these areas rely on septic systems. Septic systems are located on individual properties and provide treatment of wastewater on-site.

Septic systems are allowed in most areas of the county, but only if no public sewer system exists nearby. Property owners must maintain the septic system. Approximately 9,000 septic systems exist throughout Yuba County (Yuba Local Agency Formation Commission [Yuba LAFCo] 2008).

### *Sutter County*

Wastewater in the project area within Sutter County is treated at individual parcels with septic systems (on-site treatment facilities) or by the Water Works District No. 1 and the Rio Ramaza Community Services District.

### *City of Oroville*

The City of Oroville is served by three wastewater collection agencies: the City of Oroville, the Thermalito Irrigation District (TID), and the Lake Oroville Area Public Utility District (LOAPUD). The City of Oroville provides wastewater collection services to approximately 13,500 individuals.

The City discharges wastewater to the Sewerage Commission – Oroville Region (SCOR) plant for treatment. The City collection system is sufficient to meet current demands.

The TID provides wastewater collection services to approximately 1,985 customers. Wastewater flows currently average approximately 0.37 MGD and are expected to grow to approximately 0.67 MGD within the next 20 years.

The LOAPUD provides sewer collection services to approximately 12,000 individuals. Its service area is primarily in unincorporated areas east and south of Oroville. The LOAPUD collects an average of approximately 384 million gallons of wastewater annually..

### *City of Marysville*

The City of Marysville sewer system is a collection system that consists of separate piping systems for the city's sanitary sewers and storm drains. The sewage collection and conveyance facilities include approximately 63 miles of main sewer lines and six pumping stations. The storm drain piping system includes approximately 27 miles of piping and three pump stations (City of Marysville 2013).

### *Yuba City*

The sanitary sewer service in Yuba City is provided by the Utilities Division of the City's Department of Public Works. The City operates an approximately 7-MGD municipal sewage treatment plant and collection system, including 13 lift stations throughout the city with pipe sizes ranging in diameter from 6 to 36 inches. The City's urban water management plan projects wastewater disposal amounts of approximately 12 MGD in the year 2020, based on population projections of 97,000, an average per capita demand of 110 gallons per day, and a relatively

steady industrial demand (approximately 1.2 MGD). Although wastewater treatment improvements to meet this demand have not been funded, projects have been identified in Yuba City's 1997 Waste Water System Master Plan. These projects will be developed when the need arises for increased treatment capacity (Yuba City 2015).

### 3.17.3.2 Water Supply

#### *Butte County*

A portion of the project area in unincorporated Butte County will be supplied with water by the South Feather Water and Power Agency. The South Feather Water and Power Agency encompasses approximately 38,320 acres and serves a population of approximately 21,400. It has approximately 6,120 domestic water accounts and 525 irrigation accounts.

The agency supplies water used for agricultural, residential, and commercial purposes, and owns six reservoirs: Forbestown, Little Grass Valley, Lost Creek, Miners Ranch, Ponderosa, and Sly Creek. Together, these reservoirs provide approximately 172,064 acre-feet of storage. Three canal systems in the South Feather Water and Power Agency's district—Forbestown, Bangor, and Palermo—provide raw water to agricultural customers.

While the South Feather Water and Power Agency does not use groundwater, there are independent private wells in some areas covered by the agency's district. The South Feather Water and Power Agency has water rights totaling 800,000 acre-feet, and can take approximately 172,145 acre-feet of water from the South Fork of the Feather River and the Yuba River for storage in its reservoirs. The agency's primary treatment plant, located at the Miners Ranch Reservoir, has capacity to treat approximately 14.5 MGD. The South Feather Water and Power Agency uses approximately 27,000 acre-feet of water within its service area. The remainder of the project area not served by the agency extracts water from groundwater basins through privately owned wells (Butte County 2007).

#### *Yuba County*

Nine domestic (potable) water providers operate in Yuba County and two also provide irrigation water. Eleven irrigation water purveyors also operate in Yuba County. The following water providers serve the project area:

- The OPUD provides groundwater to 5,221 connections, and distributed approximately 3,430 acre-feet in 2005. The OPUD's water supply is provided entirely by the South Yuba Groundwater Subbasin.

- The Brophy Water District distributes water to 30 customers—primarily rice farmers—and has a boundary area encompassing approximately 17,200 acres. The primary source of water is Yuba River surface water, though portions of the boundary area are not irrigated by surface water.

- The Cordua Irrigation District distributes water to 133 customers and has a boundary area of approximately 11,500 acres. The water supply comes from Yuba River surface water, and is primarily used for rice farming. The district holds water rights to 60,000 acre-feet in Yuba River flows, and contracts with the Yuba County Water Agency for 12,000 acre-feet.

- The South Yuba Water District provides raw water to approximately 8,500 acres located south of the community of Olivehurst and west of the city of Wheatland. The district's water supply comes from surface water from the Yuba River, along with approximately 4,000 acre-feet of spill water. District customers rely on a canal and ditch system for water delivery.

- The LCWD serves approximately 3,360 customers in the community of Linda, and distributed 3,521 acre-feet in 2005. The LCWD's water supply comes from the South Yuba Groundwater Subbasin. Contaminants are removed from the water at four wellhead treatment facilities (Yuba LAFCo 2008).

### *Sutter County*

Potable water in Sutter County is provided from the Feather River, Water Works District No. 1, and the Rio Ramaza Community Services District, although most of Sutter County uses groundwater pumped by privately owned wells for potable water supplies. The project area is not within the service area of either Sutter County district, and it is entirely served by private wells (Sutter County 2015).

Several irrigation water companies and districts provide irrigation water within Sutter County. Their main source of water is diverted from the Feather and Sacramento Rivers. When surface water supplies are reduced or unavailable during the summer, groundwater is also used.

The South Sutter Water District (SSWD) is a public agency serving the project area in Sutter County. The SSWD provides irrigation water to approximately 52,000 acres of land. The SSWD's surface water is taken from the Camp Far West Reservoir, located within the SSWD service area. The district has also purchased surplus water from the Nevada Irrigation District in the past (Sutter County 2008).

### *City of Oroville*

Potable water for the city of Oroville is provided by W. Within Oroville, most of the water provided to customers is surface water from the west branch of the Feather River; this water is processed at a treatment plant. This surface water supply is supplemented by local groundwater produced by four wells. The water supply system includes approximately 52 miles of pipeline, two storage tanks, and six booster pumps. If needed, a connection with the TID can be utilized during emergencies or during treatment plant maintenance (Cal Water 2015b).

### *City of Marysville*

Potable water for the city of Marysville is provided by the California Water Services Company (Cal Water). Within the Marysville District, eight wells are utilized to pump up to 6 million gallons of groundwater per day, which is delivered using approximately 55 miles of pipeline, two storage tanks, and three booster pumps (Cal Water 2015a).

### *Yuba City*

The Yuba City Utilities Department provides water within the city limits, and also manages three water treatment plants and 15 wells to provide water service beyond the city limits through the Yuba City Groundwater Service. Most residents in the sphere of influence outside the city

limits obtain their water from either private wells or the Hillcrest Water Company, which had approximately 4,500 water service connections in 2002. There are several other small, private water districts in Yuba City, such as Wildwood East, Wildwood West, and El Margarita. These water districts serve over 250 homes. The total projected water supply for 2015 is approximately 40,100 acre-feet per year (Yuba City 2004).

### 3.17.3.3 Stormwater Drainage

#### *Butte County*

Butte County does not maintain a storm drainage system in the project area. Stormwater drainage is handled by the individual incorporated cities.

#### *Yuba County*

In the unincorporated areas of Yuba County, the drainage system consists of roads with catch basins, and 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 the communities of Linda and Olivehurst to address problems with the current system (Yuba LAFCo 2008). In 2011, a South Yuba Drainage Master Plan was completed, and 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 that identified 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 LAFCo 2008).

#### *Sutter County*

The Sutter County portion of the project area is in the RD 1001 watershed, which is located in southeast Sutter County and has an area of approximately 54 square miles. This watershed drains south to the Verona Pump Station, which has a total capacity of approximately 577 cubic feet per second and lifts the water into the Cross Canal. RD 1001 also has three small pump stations that lift stormwater from the northern portion of the watershed into the Yankee Slough. Minor and infrequent flooding of agricultural fields has occurred; flooding of homes and other structures has not occurred (Sutter County 2008).

#### *City of Oroville*

The City of Oroville is responsible for managing stormwater drainage for the project area within the Oroville city limits. The City of Oroville currently maintains six regional detention basins. The City of Oroville is subject to the NPDES General Permit for Municipal Separate Storm Sewer Systems. Under this program, the City of Oroville is required to develop and implement a comprehensive stormwater management program to promote stormwater pollutant load reduction (City of Oroville 2015).

#### *City of Marysville*

The City of Marysville is responsible for managing the wastewater collection and treatment system (i.e., sanitary sewer) and the storm drainage system for the project area within the Marysville city limits. The City of Marysville discharges stormwater to the Yuba River and the Feather River through pumping stations located along the levees. Stormwater pollution control is implemented through measures defined in the City of Marysville Storm Water Management Plan.

#### *Yuba City*

Stormwater discharge and pollution control are managed within the project area in Yuba City under the Yuba City-Sutter County Storm Water Management Plan. Stormwater in Yuba City is discharged to the Sutter Bypass and the Feather River through pumping stations located along the levees.

### 3.17.3.4 Solid Waste Disposal

#### *Butte County*

The primary solid waste disposal site in the county is the County-owned and operated Neal Road Landfill. The Butte County Division of Environmental Health, Department of Public Health functions as the local enforcement agency operating under the guidelines of the County Solid Waste Enforcement program and under the oversight of the California Integrated Waste Management Bureau (CIWMB).

The Neal Road Landfill is located 7 miles southeast of the city of Chico and is permitted to accept a variety of waste types, including municipal solid waste, inert industrial waste, demolition materials, special wastes containing nonfriable asbestos, and seepage. The permitted maximum disposal amount at the Neal Road Landfill is 1,500 tons per day, and the total capacity of the site is estimated to be approximately 20,217,600 cubic yards (CY) (equivalent to 13,141,300 tons).

The Neal Road Landfill has the capacity to receive solid waste until at least the year 2033. The Butte County Department of Public Works is responsible for monitoring the remaining capacity of the landfill site (Butte County 2007).

#### *Yuba County*

Yuba-Sutter Disposal, Inc. (YSDI) provides residential and commercial solid waste collection, disposal, and recycling services to Yuba County, and is discussed in greater detail in the next section. The Ostrom Road Landfill, also described in the next section, is the only active solid waste landfill in Yuba County.

#### *Sutter County*

YSDI provides collection, recycling, and disposal of municipal solid waste in Sutter County. YSDI collects more than 100,000 tons of materials and serves more than 30,000 residential customers and 5,000 commercial customers annually. Yuba and Sutter Counties disposed of 127,289 tons of trash in 1995 and 139,649 tons of trash in 2006.

The Ostrom Road Landfill is owned and operated by Norcal Waste Systems and will be used for waste disposal in the project area (Sutter County 2008). As a Class II landfill, the facility has a total disposal area of approximately 225 acres. The Ostrom Road Landfill has a permitted capacity of over 41.8 million CY, and more than 97 percent of its capacity is still available. The landfill can accept a maximum of 3,000 tons of waste per day. The estimated closure date of the landfill is December 31, 2066. The CIWMB indicates that the Ostrom Road Landfill has adequate capacity to accommodate the current and projected demand for service (Yuba LAFCo 2008).

#### *City of Oroville*

Recology Yuba-Sutter is responsible for solid waste disposal in Oroville. Recycling, green waste, refuse collection, and debris box and compactor services are available to residents. Recology Yuba-Sutter operates a transfer station, a household hazardous waste facility, a public recycling drop-off center, and a construction and demolition sorting facility in Oroville.

#### *City of Marysville*

The City of Marysville negotiates the contract for solid waste service and street sweeping through the Yuba-Sutter Regional Waste Management Authority (YSRWMA). Currently, residential garbage and recycling programs are available through Recology Yuba-Sutter.

#### *Yuba City*

Solid waste within Yuba City is managed by the YSRWMA. Currently, the YSRWMA contracts with Recology Yuba-Sutter to serve more than 43,000 residential customers and 3,500 commercial customers and to collect more than 100,000 tons of material annually. Recology Yuba-Sutter provides service to the project area within Yuba City.

### 3.17.3.5 Electricity and Natural Gas

PG&E provides electrical and natural gas service to the project area within Butte County, Sutter County, Yuba County, Oroville, Marysville, and Yuba City.

### 3.17.3.6 Communications

Comcast Cable Company, AT&T, Succeed Net, and DISH Network provide television and internet service in the project area within Butte County, Yuba County, Sutter County, Oroville, Marysville, and Yuba City. AT&T provides local and long-distance telephone service, and a variety of wireless companies (e.g., AT&T, Sprint, T-Mobile, Verizon, etc.) provide wireless phone and internet services to the project area.

## 3.17.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for utilities and service systems impacts derived from Appendix G of the CEQA Guidelines, and assess potential project-related construction and operational impacts on utilities and service systems.

### 3.17.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on utilities and service systems was evaluated for each of the criteria listed in Table 3.17-1, as discussed in Section 3.17.4.3.

### 3.17.4.2 Applicant-Proposed Measures

No APMs are included because project construction, operation, and maintenance will have no impact on utilities and service systems.

### 3.17.4.3 Potential Impacts

Project impacts on utilities and service systems were evaluated against the CEQA significance criteria as discussed below. This section evaluates potential project impacts from both the construction phase and the O&M phase.

The project includes replacing existing conductor, modifying existing lattice steel towers, and replacing existing lattice steel towers and poles along approximately 59.5 miles of PG&E's Palermo-Rio Oso 115 kV transmission system. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; therefore, no operations-related impacts related to utilities and service systems will occur. Accordingly, the impact analysis is focused only on construction activities that are required to replace existing conductor, install new structures (towers and poles), remove old structures (towers and poles), modify existing structures, and establish required access and work areas, as described in Chapter 2.0, Project Description.

PG&E's engineering team has taken into consideration the location of other underground and overhead utilities in designing the project. Additional utilities identification will occur in the final design stages. As required by state law, PG&E will notify other utility companies (via USA) to locate and mark existing underground structures along the proposed alignments prior to any excavation or augering activities. In addition, PG&E will probe and expose existing utilities, in accordance with state law, before using power equipment. PG&E has conducted existing utilities surveys as part of its feasibility study and routing analysis. Based on these surveys and during detailed design, PG&E will design the project to have no permanent impact on power, natural gas, communications systems, or any other utilities that are specifically documented.

Also during the detailed design phase, PG&E will assess whether the temporary interruption of other utilities will be necessary. If deemed necessary, PG&E will obtain timely approval from other utilities and closely coordinate with them until those utilities are returned to service. Prior to construction, PG&E will obtain emergency contact information for utilities that may be in close proximity or require monitoring during construction of the project. In case of accidental service interruption to another utility, PG&E will immediately contact the affected utility to coordinate actions to restore service in a safe and timely manner.

**a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? *No Impact***

A minimal amount of effluent will be generated temporarily by up to approximately 45 construction workers during peak project construction periods. Because the construction workforce is relatively small, the amount of wastewater generated will be negligible and wastewater treatment requirements will not be exceeded. Therefore, no impact will occur.

**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***

Although project construction will require the use of water and wastewater facilities for dust control and worker needs, this use will be temporary and short-term. Furthermore, the construction workforce will be relatively small (up to approximately 45 workers at peak construction activity), and will generate only minimal water use and wastewater. Wastewater service will be provided by portable toilets, and waste will be disposed of at appropriately licensed off-site facilities. This temporary and short-term use will not require expansion of existing water and wastewater treatment facilities or construction of new facilities. Existing water and wastewater facilities are sufficient to serve project needs. Therefore, no impact will occur.

**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? *No Impact***

The project will not require construction of new stormwater drainage facilities or expansion of existing facilities. The project will involve reconductoring of existing power lines, which will not require stormwater drainage facilities, and it will involve only minor modifications to existing substations. The project will not result in changes to existing stormwater facilities or require the construction of new facilities; therefore, no impact will occur.

**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***

Potable water will be supplied to construction workers for drinking and will be delivered to project work areas by construction vehicles and equipment. During construction, approximately 9.16 acre-feet (2,985,000 gallons) of water will be used for dust control and worker needs. The water may be obtained from municipal sources, including hydrants, or another available source. Existing off-site water entitlements and resources will be sufficient to accommodate the project's minor temporary and short-term water needs and relatively small number of construction workers. No impact will occur.

**e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? *No Impact***

Portable toilets will be provided for construction workers during construction. Sanitary waste will be disposed of at appropriately licensed facilities in the project area that have adequate capacity to accommodate project needs. Therefore, no impact will occur.

**f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?** ***No Impact***

Construction debris, including removed steel towers and steel and wood poles, will be taken on a line truck with a trailer to an area service center for recycling or disposal. Additional construction debris will be picked up from substation construction areas and stored in approved containers on-site, and will be hauled away for recycling or disposal periodically during construction.

Removed wood poles would either be reused or collected in containers at a PG&E service center designated as a PG&E consolidation site, and scheduled for transport to an appropriate licensed Class 1 or composite lined portion of a solid waste landfill. The project will also generate minimal solid waste from the food, glass, paper, plastic, and packing materials produced by the up to approximately 45 construction workers who will be on-site at peak construction periods. Neal Road Landfill in Butte County and Ostrom Road Landfill in Sutter County are the most likely landfills to be used for project waste. The Neal Road Landfill has the capacity to receive solid waste until at least the year 2033 and has an estimated total capacity of approximately 20.2 million CY. The Ostrom Road Landfill has a permitted capacity of over 41.8 million CY, and more than 97 percent of its capacity is still available. Existing landfills in the project area have adequate capacity to accommodate this negligible amount of solid waste; therefore, no impact will occur.

**g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?** ***No Impact***

All construction debris will be collected and hauled off-site for recycling or disposal during construction. PG&E will comply with all federal, state, and local statutes and regulations related to solid waste. Therefore, no impact will occur.

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# 3.18 MANDATORY FINDINGS OF SIGNIFICANCE AND CUMULATIVE IMPACT ANALYSIS

## 3.18.1 INTRODUCTION AND METHODOLOGY

This section discusses mandatory findings of significance as well as potential cumulative impacts related to the South of Palermo 115 kV Power Line Reinforcement Project. Cumulative impacts, as defined in Section 15355 of the California Environmental Quality Act (CEQA) Guidelines, refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts occurring over time.

An analysis of potential cumulative impacts for each relevant resource topic is provided in Section 3.18.5, immediately following Table 3.18-2, Cumulative Projects in the Project Vicinity, which lists projects within approximately 2 miles of the project area. The projects listed in Table 3.18-2, developed from available information on websites and with input and review by the involved agencies, were included if they had potential environmental impacts, geographic scope and location, and timing and duration of implementation similar to those of the South of Palermo 115 kV Power Line Reinforcement Project. The analysis considered the potential cumulative impacts that could result when impacts of the proposed project are considered in combination with impacts of other past, present, and reasonably foreseeable future projects. Some reasonably foreseeable future projects listed in Table 3.18-2 might not be approved or could be modified prior to approval; however, for the purpose of this analysis, approval and construction of identified projects was assumed.

## 3.18.2 MANDATORY FINDINGS OF SIGNIFICANCE

The analysis presented in this section is based on consideration of the CEQA checklist questions presented in Table 3.18-1. The analysis indicates that there is no substantial evidence, in light of the whole record, that any of the conditions set forth in Table 3.18-1 will occur.

**Table 3.18-1: CEQA Checklist for Mandatory Findings of Significance**

| Would the project: | Potentially Significant Impact | Less-than-Significant Impact with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| a) 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, substantially 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) Have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals? | ☐ | ☐ | ☐ | ☒ |
| c) Have possible environmental effects that are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☐ | ☒ | ☐ |
| d) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ☒ | ☐ |

**a) Would the project have the potential to substantially 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; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory? *Less than Significant***

No. As discussed in Section 3.4, Biological Resources, construction activities may have minor, short-term impacts on species habitat, populations, or communities, resulting in less-than-significant impacts, but none of the minor impacts would result in the effects listed in question a). Out of the 25 special-status plant species listed in Table 3.4-2: Special-Status Plant Species Identified as Occurring in the Project Region, only 13 plant species were considered to have the potential to occur in the project area based on further review of suitable habitat in the project area and known geographic range. Twenty-eight special status wildlife species were determined to be present, seasonally present, likely to occur, or have the potential to occur in the project area (as summarized in Table 3.4-3). PG&E will implement applicant-proposed measures (APMs) BIO-1 through APM BIO-14 to ensure that project impacts will be avoided or less than significant. Thus, the project will not have the potential to substantially 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, or substantially reduce the number or restrict the range of an endangered, rare or threatened species.

Likewise, the project will not eliminate important examples of the major periods of California history or prehistory. Cultural resources surveys and records searches identified 10 built-environment resources that fall directly within the project study area and field investigations identified four historic-era archaeological sites within the project study area. Of the 10 built-environment resources, six (P-51-000222, P-51-000223, P-51-000224, P-58-001618, Palermo-ICF-J&S-01-H, Palermo Substation) have been determined ineligible for listing on either the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR); two (P-58-001372 and P-51-000150) have been determined eligible for listing on the NRHP/CRHR; and two (P-58-001369 and Old Marysville Road) have not been evaluated for either the NRHP or CRHR. Construction will avoid the historical resources and all of the unevaluated sites, which are assumed to be historical resources for management purposes.

Field investigations identified four historic-era archaeological sites within the project study area. Three of the sites (Nicolaus-ICF J&S-01-H, PL-Palermo-02H, and PL-Palermo-03H) were determined not eligible for either the NRHP or the CRHR. The remaining site (PL-Palermo-11H) has not been evaluated for inclusion in the NRHP or CRHR. Three isolates were also identified within the APE; isolates are not eligible for the NRHP or CRHR. Construction will avoid the archaeological resources and all unevaluated sites, which are assumed to be archaeological resources for management purposes.

In the unlikely event that unknown cultural resources are discovered during construction activities, APMs outlined in Section 3.5.4.2 will be implemented to ensure that the project will not eliminate important examples of major periods of California history or prehistory. The impact will be less than significant.

As to paleontological resources, none are known of in the project area but the area is near or on unique geologic features or formations that have paleontological sensitivity ratings ranging from PFYC 1 to PFYC 3. Only drilling and excavation activities affecting the moderate-sensitivity Laguna, Modesto, and Riverbank Formations in the project area have the potential to affect paleontological resources. APMs outlined in Section 3.5.4.2 will be implemented to reduce potential impacts by managing unanticipated paleontological resources discoveries properly and monitoring excavation activities that may encounter paleontologically sensitive sediments. The impact will be less than significant, and the project will not eliminate important examples of major periods of California paleontological prehistory.

**b) Would the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals*? No impact***

No, the project will not achieve short-term environmental goals to the disadvantage of long-term environmental goals and will result in either no impact or less-than-significant impacts in both the short and long terms. The project will be compatible with local environmental goals and will not conflict with federal or state environmental policies and regulations. Therefore, no impact will occur.

**c) Would the project have possible environmental effects that are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are significant 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***

No. A cumulative impact analysis for each resource area is presented in Section 3.18.5, Analysis of Cumulative Impacts. The project will contribute incrementally to cumulative impacts in the project area related to air quality, biological resources, greenhouse gas (GHG) emissions, hazardous materials, traffic, and water quality; however, project impacts will be a minor contribution to those cumulative impacts. Thus, the project will not have environmental effects that are individually limited but cumulatively considerable. The impact will be less than significant.

## 3.18.3 CUMULATIVE IMPACTS

Projects included in the cumulative impact assessment were identified by using a list approach (CEQA Guidelines Section 15130[b][1][A]), including all pending development projects within an approximately 2-mile radius of the project area. This area includes Butte, Yuba, and Sutter Counties. Table 3.18-2 (presented at the end of this section) summarizes these pending development projects.

## 3.18.4 KEY PROJECTS IN THE PROJECT VICINITY

Of the projects in Table 3.18-2, the following projects are located immediately adjacent to a component of the South of Palermo 115 kV Power Line Reinforcement Project and may overlap with its construction timeline. Therefore, additional information is provided on the timeline and status of these projects.

### 3.18.4.1 Butte County

#### *Rio d'Oro Specific Plan*

This project encompasses approximately 689 acres, with 413 development acres (including developed parkland) and 276 acres to remain in environmental conservation and scenic open spaces within unincorporated Butte County, south of the city of Oroville and west of Palermo. This project proposes up to 2,700 dwelling units and 248,000 square feet of commercial uses. The Butte County Board of Supervisors certified the specific plan final EIR and approved the project on May 19, 2015. The Rio d'Oro Specific Plan area is located approximately 2 miles from the project area.

### 3.18.4.2 Yuba County

#### *Plumas Lake Specific Plan*

This project encompasses approximately 5,263 acres, with up to 11,747 dwelling units, commercial uses, industrial uses, open space, and schools. The Plumas Lake Specific Plan was approved on September 21, 1993 by the Board of Supervisors, with subsequent amendments approved on April 19, 2005 and September 6, 2005 (Yuba County 2016). The proposed Plumas Lake Specific Plan area is located adjacent to the project area.

#### *Olivehurst Avenue Specific Plan*

This project encompasses approximately 55 acres, with up to 20 acres of commercial/office uses. The Olivehurst Avenue Specific Plan was approved by the Board of Supervisors in December 1995. The Olivehurst Specific Plan area is located adjacent to the project area.

#### *North Arboga Study Area*

This project encompasses approximately 1,300 acres, with up to 2,500 dwelling units, 205 acres of industrial use, and 10 to 20 acres of commercial use. The North Arboga Study Area Environmental Impact Report was certified by the Planning Commission on November 18, 1992. The North Abrogate Study Area is located adjacent to the project area.

#### *Western Pacific Interceptor Canal 200-Year Standard Project*

This project consists of improvements at various reaches along the approximately 5.9 miles of the West Levee of the Western Pacific Interceptor Canal (WPIC) east of State Route 70, to meet the California Department of Water Resources' Urban Levee Design Criteria for 200-year flood protection by correcting deficiencies related to seepage and slope stability. Remedial construction activities would be focused on approximately 2 miles of the West Levee. A new landside access road would be constructed along the approximately 3.3-mile northern portion of the West Levee for future operations and maintenance activities. The draft Environmental Assessment/Finding of No Significant Impact (EA/FONSI) and Initial Study (IS) and proposed Mitigated Negative Declaration (IS/MND) was released in June 2015. The WPIC project area overlaps the project area.

#### *PG&E Projects*

Two PG&E projects are located in Yuba County immediately adjacent to the project: Pease Transformer Addition and Bus Upgrade, and Pease–Marysville 60 kV Line. Additional information on these projects can be found in Table 3.18-2, Cumulative Projects in the Project Vicinity.

### 3.18.4.3 Sutter County

#### *PG&E Projects*

Seven PG&E projects are located in Sutter County immediately adjacent to the project: Rio Oso 115 kV BAAH GIS, Rio Oso 230 kV BAAH GIS, Rio Oso 115 kV MPAC, Rio Oso 230 kV MPAC, Rio Oso Transformer #1 and 2 Replacement, Rio Oso Voltage Support, and Rio Oso-Atlantic 230 kV Line. Additional information on these projects can be found in Table 3.18-2, Cumulative Projects in the Project Vicinity.

**Table 3.18-2: Cumulative Projects in the Project Vicinity**

| Project Name | Description / Location | Proximity to Project Route* (miles) | Timeframe |
|---|---|---|---|
| Rio d'Oro Specific Plan | Development of approximately 413 development acres and 276 acres to remain in environmental conservation and scenic open spaces. Includes up to 2,700 dwelling units and 248,000 square feet of commercial uses. | 2.0 miles | Full build out 2035 |
| Plumas Lake Specific Plan | Development of approximately 5,254 acres. Includes up to 11,747 dwelling units, commercial uses, industrial uses, open space, and schools. | Adjacent | Approved 1992; approximately 2,500 dwelling units have been constructed |
| North Arboga Study Area | Development of approximately 1,300 acres. Includes up to 2,500 dwelling units, 205 acres of industrial use, and 225 acres of commercial use. | Adjacent | Approved 1992; approximately 690 dwelling units have been constructed |
| Olivehurst Avenue Specific Plan | Development of approximately 55 acres. Includes up to 20 acres of commercial/office uses. | Adjacent | Approved 1995 |
| Pease Transformer Addition and Bus Upgrade | Install second 115/60 kV transformer and upgrade Pease 115 kV bus | Adjacent | In service 06/2018 |
| Pease—Marysville 60 kV Line | Construct a new 60 kV line from Pease to Marysville. | Adjacent | In service 06/2022 |
| Western Pacific Interceptor Canal 200-Year Standard Project | Improve various reaches along the approximately 5.9 miles of the Western Pacific Interceptor Canal West Levee that is east of State Route 70. | Adjacent | Beginning as soon as summer 2016 and ending by December 2016 |
| Rio Oso 115 kV BAAH GIS | Convert Rio Oso 115 kV bus | Adjacent | In service 02/2020 |
| Rio Oso 230 kV BAAH GIS | Convert Rio Oso 230 kV bus | Adjacent | In service 12/2019 |
| Rio Oso 115 kV MPAC | Install 115 kV control building | Adjacent | In service 12/2020 |
| Rio Oso 230 kV MPAC | Install 230 kV control building | Adjacent | In service 02/2021 |
| Rio Oso Transformer #1 and 2 Replacement | Replace Rio Oso 230/115 kV transformer | Adjacent | In service 01/2020 |
| Rio Oso Voltage Support | Install SVC at Rio Oso 230 kV bus and Install 170 MVAR shunt capacitors at Atlantic 230 kV bus | Adjacent | In service 12/2020 |
| Rio Oso—Atlantic 230 kV Line | New 230 kV line from Rio Oso to Atlantic | Adjacent | On hold |
| Note:<br>* Distances are approximate. | | | |

## 3.18.5 ANALYSIS OF CUMULATIVE IMPACTS

The intent of this project is to improve reliability for existing users, and no long-term impacts have been identified. Implementation of APMs will further minimize less-than-significant short-term construction impacts related to air quality, biology, cultural resources, GHGs, hazards, hydrology and water quality, noise, and traffic. As shown in Chapter 3.0, for aesthetics, agricultural and forest resources, land use, minerals, population, public services, recreation, and utilities, either the project has no impacts or the impacts are so minor they will have no contribution to cumulative impacts in the area. In addition, for most of the resource areas discussed below, temporary impacts are localized. Localized impacts generally are not cumulative. A discussion regarding each relevant resource area is provided below.

### *Air Quality*

The air emissions from construction of the project, as well as the nearby projects, will lead to a temporary increase in criteria air pollutants. Exhaust emissions result from the combustion of fossil fuels in both off-road construction equipment and on-road vehicles. Construction emissions would not exceed BCAQMD's construction emissions thresholds. While construction emissions may exceed FRAQMD's ROG and $NO_X$ thresholds, the emissions will be temporary and will only occur during limited portions of the construction period, and the project will not have a substantial contribution to the region's air quality. PG&E will implement APM AQ-3 - offsite mitigation to reduce ROG and NOx to below FRAQMD thresholds. This APM and APMs AQ-1, AQ-2 and GHG -1 will further minimize the significance of the project's contribution to regional air quality. Accordingly, construction emissions are anticipated to be less than significant with mitigation and will not be cumulatively considerable.

### *Biological Resources*

Ground disturbances associated with temporary construction activities, such as work areas, staging areas, pull sites, and temporary access roads, vegetation removal or trimming, construction of new structures, and removal of old structures, have the potential to result in temporary and permanent impacts on special-status plant and wildlife species and other biological resources, including vernal pool species, valley elderberry long horn beetle, California red-legged frog, western spadefoot toad, coast horned lizard, giant garter snake, western pond turtle, nesting birds, and bats. To the extent possible, the project has been designed and located to avoid features that may provide habitat for these species. Impacts related to the project will be temporary and once construction is completed, all temporary access roads and construction work areas will be restored. Other related development or transmission line projects in the area may also potentially affect biological resources through similar construction activities. However, projects within sensitive areas are expected to include monitoring and other measures to minimize the potential for these effects. As analyzed in detail in Section 3.4.4.3 Potential Impacts, although work areas for the WPIC project and the South of Palermo Line project will overlap, the project features that will be impacted by the WPIC project are outside of the project footprint of the South of Palermo Line project and therefore the WPIC project will not have overlapping biological impacts with the South of Palermo Line project. With implementation of the APMs presented in Section 3.4.4, Applicant-Proposed Measures and Potential Impacts, the project's effects on biological resources will not be cumulatively considerable.

### *Cultural and Paleontological Resources*

The record search identified 48 cultural resources reports and the fieldwork inventory included identification of four previously undocumented resources, 10 previously documented resources, and three isolated finds. Site types identified with the area of potential effects include historic period debris scatters, an irrigation complex (ditches), roads, levees, railroads, agricultural and ranching complexes, and power conveyance facilities (transmission lines and substation). To the extent possible, the project has been designed to avoid any known cultural resources. Unanticipated discoveries will be addressed by APMs. Overlap of cultural resources impacts with other projects is not anticipated. Implementation of APM CR-1 through APM CR-3, discussed in Section 3.5.4, Applicant-Proposed Measures and Potential Impacts, will result in less-than-significant impacts and no cumulatively considerable impacts on known or unknown cultural resources from project construction combined with other related projects.

Only activities affecting the Riverbank, Modesto, and Laguna Formations have the potential to affect paleontological resources. To the extent possible, the project has been designed to avoid any known resources, and overlap with other projects is not anticipated. Implementation of APM CR-3 and APM CR-4 will result in a less-than-significant impact on potential paleontological resources during project construction. In addition, the project combined with other related projects will not result in a cumulatively considerable impact on paleontological resources.

### *Geology and Soils*

The project is located in a seismically active area with underlying young geologic deposits. Geologic and seismic hazards with the greatest potential to affect the project include strong ground shaking and seismic-induced ground failure. Soil hazards with the greatest potential to affect the project include expansive, soft, loose, and/or compressible soils. However, with implementation of the APMs presented in Section 3.6.4, Applicant-Proposed Measures and Potential Impacts, any potential impacts will be reduced to less-than-significant levels or eliminated entirely. The impacts of the project are not individually significant and will not contribute significantly to any potential hazard when considered with other related projects that have been identified for development in the area.

### *Greenhouse Gas Emissions*

GHG emissions directly generated during construction will result in a less-than-significant, short-term impact on climate change. GHG emissions will be further reduced with implementation of APMs presented in Section 3.7.4, Applicant-Proposed Measures and Potential Impacts. As shown in Table 3.7-2, the total GHG construction emissions associated with project construction, amortized over 30 years, will be less than 800 metric tons of $CO_2e$ per year without APMs, which is well below the threshold of 10,000 metric tons. With the implementation of APMs, the total emissions will be approximately 752 metric tons of $CO_2e$, per year. Greenhouse gas emissions associated with the construction of other projects in the project area will generally be temporary, occurring during construction. Therefore, the GHG emissions that will be generated by the project will not be cumulatively considerable and will not significantly contribute to global climate change.

### *Hazards and Hazardous Materials*

All potential impacts related to hazards and hazardous materials are considered less than significant or nonexistent with implementation of the APMs described in Section 3.8.4, Applicant-Proposed Measures and Potential Impacts. During construction activities, there will be a temporarily increased potential for accidental release of fluids from a vehicle or motorized piece of equipment. Any potential for accidental release will be avoided by implementing the APMs. The implementation of PG&E's standard hazardous substance control, emergency response, and health and safety procedures will further minimize any potential less-than-significant impacts.

The impacts of the proposed project related to hazards or hazardous materials are not individually significant and will be localized. Accordingly, the cumulative effects of this and other related excavation projects will not be significant. Each project must similarly follow the applicable federal and state rules and regulations required to ensure that no substantial impacts occur.

### *Hydrology and Water Quality*

Project construction activities will have temporary and less-than-significant impacts on water quality near water bodies through: (1) short-term localized disturbance of sediments during grading for construction laydown and staging areas, pull sites, helicopter landing pads, and temporary access roads; (2) crossing wetlands or small streams to access some work locations; and (3) potential for accidental releases of hazardous materials that are used during construction (see Section 3.9, Hydrology and Water Quality). Given the very small area, short duration, and localized nature of activities described in Section 3.9, the project is not expected to have a cumulative contribution to the water quality issues in the project area. Implementation of the APMs described in Section 3.9.4, Applicant-Proposed Measures and Potential Impacts, including preparation of a Storm Water Pollution Prevention Plan and implementation of spill prevention and response measures, will further reduce less-than-significant impacts on hydrology and water quality, and the project's contribution to any potential cumulative impacts on water quality will not be cumulatively considerable.

### *Noise*

The project will not have any long-term ambient noise-level impacts. Short-term construction noise impacts may occur simultaneously at a few work locations along the overall length of the project but will be primarily limited to daytime hours and compatible with local noise ordinances. Most of the project is located in rural areas without any sensitive receptors. With implementation of the APMs presented in Section 3.12.5, Applicant-Proposed Measures and Potential Impacts, which provide for noise-reducing construction practices, any potential impacts will be reduced to less-than-significant levels. The project will not make a cumulatively considerable contribution to cumulative noise impacts.

### *Transportation and Traffic*

All potential impacts related to transportation will be less than significant with implementation of the APMs described in Section 3.16.4, Applicant-Proposed Measures and Potential Impacts.

During construction activities, temporary road or lane closures will be required and bike routes and mass transit routes may be temporarily affected when truck traffic accesses or exits a structure location, or when roads or lanes are closed. Construction activities may generate slight increases in traffic on interstate highways, state routes, and local roads. However, the effects will be minimal, short term, and periodic, and will not affect the overall level of service on regional roadways. Implementation of the APMs described in Section 3.16.4 will further reduce less-than-significant impacts on transportation, and the project will not result in a cumulatively considerable contribution to any potential cumulative impacts on transportation.

**d) Would the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? *Less than significant***

The project will not adversely affect human beings, either directly or indirectly. Potential construction impacts associated with human health include the presence of hazards, hazardous materials use, potential for wildland fires, and temporary air quality impacts. As discussed in Section 3.3, Air Quality, and Section 3.8, Hazards and Hazardous Material, construction impacts associated with air quality and with hazards and hazardous materials will be less than significant. APMs described in Sections 3.3.4.2 and 3.8.4.2 will further reduce the potential for adverse effects.

## 3.18.6 REFERENCES

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# A AFFECTED PROPERTIES WITHIN 300 FEET

# A AFFECTED PROPERTIES WITHIN 300 FEET

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| BUTTE | 028-030-042-000 | COLUSA | PO BOX 1424 | CA | 959321424 |
| BUTTE | 078-070-030-000 | OROVILLE | 2441 PINECREST RD | CA | 959669015 |
| BUTTE | 028-030-016-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-010-068-000 | SAN FRANCISCO | 113 CENTRAL AVE | CA | 941173021 |
| BUTTE | 078-070-021-000 | OROVILLE | 6310 UPPER PALERMO RD | CA | 959669017 |
| BUTTE | 078-070-026-000 | OROVILLE | 2395 PINECREST RD | CA | 959669015 |
| BUTTE | 079-250-024-000 | OROVILLE | 2588 PINECREST RD | CA | 959669016 |
| BUTTE | 026-100-026-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 078-090-044-000 | SAN JOSE | 801 S WINCHESTER BLVD 3406 | CA | 951282972 |
| BUTTE | 026-100-003-000 | OROVILLE | 1225 PINE ST | CA | 959654832 |
| BUTTE | 078-080-006-000 | SAN FRANCISCO | PO BOX 770000 | CA | 941770001 |
| BUTTE | 026-090-006-000 | PALERMO | 7049 RAILROAD AVE | CA | 959689739 |
| BUTTE | 078-090-048-000 | OROVILLE | 2343 VIA CEDRO | CA | 959667223 |
| BUTTE | 078-050-013-000 | OROVILLE | 3950 ORO DAM BLVD E E | CA | 959663754 |
| BUTTE | 078-050-032-000 | FREMONT | 48611 FLAGSTAFF RD | CA | 945397710 |
| BUTTE | 027-040-007-000 | SAN FRANCISCO | PO BOX 770000 | CA | 941770001 |
| BUTTE | 079-250-028-000 | OROVILLE | 6379 UPPER PALERMO RD | CA | 959669017 |
| BUTTE | 026-020-043-000 | ROCKLIN | 6412 PUFFIN CT | CA | 957655832 |
| BUTTE | 027-220-037-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 078-050-025-000 | OROVILLE | 6319 LINCOLN BLVD | CA | 959667732 |
| BUTTE | 026-100-036-000 | OROVILLE | 25 COUNTY CENTER DR | CA | 959653316 |
| BUTTE | 026-050-019-000 | FLAGSTAFF | 2233 N HEMBERG DR | AZ | 86004 |
| BUTTE | 026-020-034-000 | OROVILLE | 6571 LINCOLN BLVD | CA | 959667713 |
| BUTTE | 026-020-036-000 | HILLSBOROUGH | 1515 BLACK MOUNTAIN RD | CA | 940107103 |
| BUTTE | 026-090-037-000 | PALERMO | 7240 PALERMO HONCUT HWY | CA | 959689704 |
| BUTTE | 027-220-037-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 078-040-024-000 | OAKLAND | 2188 ROSEDALE AVE | CA | 946014326 |
| BUTTE | 026-020-033-000 | OROVILLE | 6660 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 078-050-030-000 | OROVILLE | 2010 FEATHER RIVER BLVD | CA | 959655705 |
| BUTTE | 026-020-001-000 | HILLSBOROUGH | 1515 BLACK MOUNTAIN RD | CA | 940107103 |
| BUTTE | 078-050-022-000 | OROVILLE | 24 ODIE WAY | CA | 959669563 |
| BUTTE | 078-080-005-000 | SAN CLEMENTE | 301 CAMINO SAN CLEMENTE | CA | 926723705 |
| BUTTE | 026-141-018-000 | OROVILLE | 6081 UPPER PALERMO RD | CA | 959669020 |
| BUTTE | 026-050-018-000 | FLAGSTAFF | 2233 N HEMBERG DR | AZ | 86004 |
| BUTTE | 078-050-026-000 | WEST SACRAMENTO | 1505 DEERWOOD ST | CA | 956913611 |
| BUTTE | 078-040-021-000 | OROVILLE | 6332 LINCOLN BLVD | CA | 959667734 |
| BUTTE | 078-080-008-000 | OROVILLE | 2344 WHEELER AVE | CA | 959669019 |
| BUTTE | 078-080-007-000 | SAN FRANCISCO | PO BOX 770000 | CA | 941770001 |
| BUTTE | 026-020-048-000 | OROVILLE | 6661 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 078-050-002-000 | OROVILLE | 2160 KUSEL RD | CA | 959669589 |
| BUTTE | 078-050-004-000 | OROVILLE | PO BOX 2041 | CA | 959652041 |
| BUTTE | 078-050-003-000 | OROVILLE | 2150 KUSEL RD | CA | 959669589 |
| BUTTE | 079-250-005-000 | OROVILLE | 6265 UPPER PALERMO RD | CA | 959669018 |
| BUTTE | 078-070-025-000 | OROVILLE | 6285 CARMEL AVE | CA | 959669014 |
| BUTTE | 079-250-006-000 | BROWNSVILLE | 9654 LA PORTE RD | CA | 959199712 |
| BUTTE | 027-220-012-000 | OROVILLE | 1184 COX LN | CA | 959669670 |
| BUTTE | 026-020-006-000 | OROVILLE | PO BOX 5954 | CA | 959660954 |
| BUTTE | 026-020-044-000 | OROVILLE | 6650 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 078-050-033-000 | OROVILLE | 6493 LINCOLN BLVD | CA | 959667713 |
| BUTTE | 078-070-024-000 | OROVILLE | 2410 PINECREST RD | CA | 959669015 |
| BUTTE | 026-020-004-000 | OROVILLE | 6511 LINCOLN BLVD | CA | 959667713 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| BUTTE | 026-020-003-000 | OROVILLE | 83 DISTRICT CENTER DR | CA | 959669383 |
| BUTTE | 026-113-019-000 | PALERMO | 1911 BALDWIN AVE | CA | 959689734 |
| BUTTE | 028-020-076-000 | NEVADA CITY | 10707 BANNER MINE WAY | CA | 959593702 |
| BUTTE | 078-050-001-000 | OROVILLE | 2150 KUSEL RD | CA | 959669589 |
| BUTTE | 026-280-010-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-280-027-000 | PALERMO | PO BOX 435 | CA | 959680435 |
| BUTTE | 028-030-052-000 | NEVADA CITY | 10707 BANNER MINE WAY | CA | 959593702 |
| BUTTE | 026-280-026-000 | CHICO | PO BOX 1388 | CA | 959271388 |
| BUTTE | 028-030-051-000 | SAN RAFAEL | 150 PELICAN WAY | CA | 949015550 |
| BUTTE | 026-010-014-000 | TULELAKE | PO BOX 235 | CA | 961340235 |
| BUTTE | 028-020-074-000 | SAN RAFAEL | 150 PELICAN WAY | CA | 949015550 |
| BUTTE | 027-220-130-000 | CHICO | PO BOX 556 | CA | 959270556 |
| BUTTE | 028-020-028-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-111-011-000 | PALERMO | 1908 BALDWIN AVE | CA | 959689734 |
| BUTTE | 078-060-004-000 | KILA | PO BOX 423 | MT | 599200423 |
| BUTTE | 079-250-025-000 | WEST SACRAMENTO | 616 YOLO ST | CA | 956051813 |
| BUTTE | 027-220-072-000 | VENTURA | 516 CHARLESTON PL | CA | 930043783 |
| BUTTE | 078-040-015-000 | OROVILLE | 2103 DEBBIE ANN CT | CA | 959669668 |
| BUTTE | 078-050-027-000 | OROVILLE | 1555 3RD AVE | CA | 959654751 |
| BUTTE | 026-010-015-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-010-070-000 | MILL VALLEY | 908 VERNAL WAY | CA | 949414422 |
| BUTTE | 026-020-042-000 | OROVILLE | 1900 ORO DAM BLVD E 12 | CA | 959665934 |
| BUTTE | 026-020-035-000 | OROVILLE | 6524 LINCOLN BLVD | CA | 959667713 |
| BUTTE | 078-050-031-000 | OROVILLE | 1555 3RD AVE | CA | 959654751 |
| BUTTE | 079-250-021-000 | SAN JOSE | 14241 JERILYN DR | CA | 951273242 |
| BUTTE | 026-050-034-000 | OROVILLE | 6715 LINCOLN BLVD | CA | 959667712 |
| BUTTE | 028-020-075-000 | SAN RAFAEL | 150 PELICAN WAY | CA | 949015550 |
| BUTTE | 079-250-027-000 | OROVILLE | 6379 UPPER PALERMO RD | CA | 959669017 |
| BUTTE | 079-250-026-000 | OROVILLE | 196 STRINGTOWN RD | CA | 959668988 |
| BUTTE | 027-040-037-000 | OROVILLE | 174 STAGELINE RD | CA | 959669393 |
| BUTTE | 079-250-004-000 | OROVILLE | 1527 14TH ST | CA | 959654209 |
| BUTTE | 078-050-015-000 | OROVILLE | 6269 LINCOLN BLVD | CA | 959669530 |
| BUTTE | 078-060-001-000 | OROVILLE | PO BOX 5697 | CA | 959660697 |
| BUTTE | 026-141-013-000 | PARADISE | 6598 FIRLAND DR | CA | 959692406 |
| BUTTE | 026-100-009-000 | OROVILLE | 2260 PLACER AVE | CA | 959665426 |
| BUTTE | 078-070-027-000 | OROVILLE | 2395 PINECREST RD | CA | 959669015 |
| BUTTE | 079-250-020-000 | OROVILLE | 50 RIDGEWELL CT | CA | 959669021 |
| BUTTE | 026-020-027-000 | OROVILLE | 1900 ORO DAM BLVD E 153 | CA | 959665934 |
| BUTTE | 079-250-007-000 | OROVILLE | 2589 PINECREST RD | CA | 959669016 |
| BUTTE | 027-220-010-000 | GRIDLEY | 380 ORD RANCH RD | CA | 959489403 |
| BUTTE | 027-220-011-000 | OROVILLE | 1605 LOWER HONCUT RD | CA | 959669680 |
| BUTTE | 026-090-025-000 | PALERMO | 7063 RAILROAD AVE | CA | 959689739 |
| BUTTE | 079-250-023-000 | OROVILLE | 2590 PINECREST RD | CA | 959669016 |
| BUTTE | 026-020-040-000 | OROVILLE | 6619 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 079-250-008-000 | OROVILLE | 2589 PINECREST RD | CA | 959669016 |
| BUTTE | 026-111-001-000 | PALERMO | 7123 RAILROAD AVE | CA | 959689737 |
| BUTTE | 026-100-010-000 | OROVILLE | 2950 LOUIS AVE | CA | 959669336 |
| BUTTE | 078-050-011-000 | WOODBRIDGE | PO BOX 970 | CA | 952580970 |
| BUTTE | 078-050-021-000 | OROVILLE | 46 ODIE WAY | CA | 959669563 |
| BUTTE | 078-050-024-000 | OROVILLE | 6317 LINCOLN BLVD | CA | 959667732 |
| BUTTE | 078-050-020-000 | SACRAMENTO | PO BOX 278822 | CA | 958278822 |
| BUTTE | 078-050-016-000 | OROVILLE | 6267 LINCOLN BLVD | CA | 959669530 |
| BUTTE | 026-113-011-000 | PALERMO | 7263 RAILROAD AVE | CA | 959689736 |
| BUTTE | 026-090-039-000 | PALERMO | 7097 RAILROAD AVE | CA | 959689739 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| BUTTE | 026-020-041-000 | HILLSBOROUGH | 1515 BLACK MOUNTAIN RD | CA | 940107103 |
| BUTTE | 026-090-005-000 | PALERMO | 7055 RAILROAD AVE | CA | 959689739 |
| BUTTE | 026-100-006-000 | PALERMO | 1868 N VILLA AVE | CA | 959689752 |
| BUTTE | 078-080-004-000 | SAN CLEMENTE | 301 CAMINO SAN CLEMENTE | CA | 926723705 |
| BUTTE | 026-020-028-000 | OROVILLE | 6565 LINCOLN BLVD | CA | 959667713 |
| BUTTE | 026-020-026-000 | OROVILLE | 6635 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 026-090-007-000 | JUNCTION CITY | 738 W 13TH ST | KS | 664412152 |
| BUTTE | 079-250-018-000 | OROVILLE | 75 RIDGEWELL CT | CA | 959669021 |
| BUTTE | 027-200-044-000 | LODI | PO BOX 1600 | CA | 952411600 |
| BUTTE | 026-141-001-000 | PALERMO | 1970 ESPERANZA AVE | CA | 959689735 |
| BUTTE | 027-200-046-000 | OROVILLE | 250 AIRPORT PKWY | CA | 959659249 |
| BUTTE | 027-200-025-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-111-012-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-141-019-000 | OROVILLE | 6081 UPPER PALERMO RD | CA | 959669020 |
| BUTTE | 027-200-019-000 | GRIDLEY | 380 ORD RANCH RD | CA | 959489403 |
| BUTTE | 027-220-212-000 | CHICO | 1367 E LASSEN AVE A1 | CA | 959737881 |
| BUTTE | 026-020-039-000 | OROVILLE | 6575 LINCOLN BLVD | CA | 959667713 |
| BUTTE | 026-050-033-000 | OROVILLE | 6761 LINCOLN BLVD | CA | 959667712 |
| BUTTE | 078-050-028-000 | OROVILLE | 1555 3RD AVE | CA | 959654751 |
| BUTTE | 079-250-022-000 | OROVILLE | PO BOX 2380 | CA | 959652380 |
| BUTTE | 078-050-012-000 | OROVILLE | 6243 LINCOLN BLVD | CA | 959669530 |
| BUTTE | 078-050-023-000 | WEST SACRAMENTO | 1505 DEERWOOD ST | CA | 956913611 |
| BUTTE | 078-040-020-000 | OROVILLE | 4360 PACIFIC HEIGHTS RD | CA | 959659237 |
| BUTTE | 028-020-036-000 | BIGGS | 719 HASELBUSCH LN | CA | 95917 |
| BUTTE | 028-020-054-000 | OROVILLE | 725 CENTRAL HOUSE RD | CA | 959659652 |
| BUTTE | 026-242-025-000 | OROVILLE | 1616 GRAND AVE | CA | 959654120 |
| BUTTE | 028-020-026-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-050-003-000 | OROVILLE | 6760 LINCOLN BLVD | CA | 959667712 |
| BUTTE | 026-020-011-000 | OROVILLE | 3820 MYERS ST | CA | 959666724 |
| BUTTE | 026-143-012-000 | PALERMO | PO BOX 332 | CA | 959680332 |
| BUTTE | 026-143-018-000 | PALERMO | 7425 RAILROAD AVE | CA | 959689612 |
| BUTTE | 027-200-061-000 | GRIDLEY | 380 ORD RANCH RD | CA | 959489403 |
| BUTTE | 027-200-028-000 | LODI | PO BOX 1600 | CA | 952411600 |
| BUTTE | 026-020-049-000 | OROVILLE | 6368 LINCOLN BLVD 36 | CA | 959669531 |
| BUTTE | 026-230-017-000 | OROVILLE | 7986 RAILROAD AVE | CA | 959669349 |
| BUTTE | 027-200-045-000 | OROVILLE | 250 AIRPORT PKWY | CA | 959659249 |
| BUTTE | 026-171-004-000 | PALERMO | 7550 LINCOLN BLVD | CA | 959689615 |
| BUTTE | 026-173-001-000 | SACRAMENTO | 7228 SWALE RIVER WAY | CA | 958313310 |
| BUTTE | 026-240-002-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-242-023-000 | OROVILLE | 1616 GRAND AVE | CA | 959654120 |
| BUTTE | 026-143-019-000 | PALERMO | 1921 PALERMO RD | CA | 959689613 |
| BUTTE | 026-230-037-000 | PALERMO | PO BOX 213 | CA | 959680213 |
| BUTTE | 026-143-014-000 | PALERMO | 1934 KENILWORTH AVE | CA | 959689614 |
| BUTTE | 026-241-002-000 | PALERMO | PO BOX 881 | CA | 959680881 |
| BUTTE | 026-201-003-000 | OROVILLE | 223 VALLEY VIEW DR | CA | 959663719 |
| BUTTE | 026-171-010-000 | PALERMO | PO BOX 365 | CA | 959680365 |
| BUTTE | 026-143-011-000 | LOS ANGELES | 1131 N EVERGREEN AVE | CA | 900332008 |
| BUTTE | 028-020-065-000 | BIGGS | 719 HASELBUSCH LN | CA | 95917 |
| BUTTE | 027-040-038-000 | MARYSVILLE | 4413 STATE HIGHWAY 20 | CA | 959019012 |
| BUTTE | 026-050-004-000 | OROVILLE | 6772 LINCOLN BLVD | CA | 959667728 |
| BUTTE | 026-020-038-000 | OROVILLE | 6660 LINCOLN BLVD | CA | 959669546 |
| BUTTE | 028-020-025-000 | SAN FRANCISCO | PO BOX 770000 | CA | 941770001 |
| BUTTE | 028-020-064-000 | BIGGS | 719 HASELBUSCH LN | CA | 95917 |
| BUTTE | 026-020-032-000 | OROVILLE | 6660 LINCOLN BLVD | CA | 959669546 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| BUTTE | 078-050-029-000 | OROVILLE | 6343 LINCOLN BLVD | CA | 959667732 |
| BUTTE | 026-020-045-000 | SPRING | 2727 SPRING CREEK DR | TX | 773736130 |
| BUTTE | 027-200-075-000 | LODI | PO BOX 1600 | CA | 952411600 |
| BUTTE | 026-230-021-000 | PALERMO | PO BOX 953 | CA | 959680953 |
| BUTTE | 026-230-018-000 | PALERMO | PO BOX 83 | CA | 959680083 |
| BUTTE | 026-242-024-000 | PALERMO | PO BOX 436 | CA | 959680436 |
| BUTTE | 026-240-006-000 | PALERMO | PO BOX 627 | CA | 959680627 |
| BUTTE | 027-200-024-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-240-005-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-201-002-000 | OROVILLE | 223 VALLEY VIEW DR | CA | 959663719 |
| BUTTE | 026-230-027-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-242-029-000 | OROVILLE | 1616 GRAND AVE | CA | 959654120 |
| BUTTE | 026-242-005-000 | OROVILLE | PO BOX 1552 | CA | 959651552 |
| BUTTE | 026-230-047-000 | OROVILLE | 7940 RAILROAD AVE | CA | 959669349 |
| BUTTE | 026-230-028-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| BUTTE | 026-230-036-000 | BELMONT | 2408 BUENA VISTA AVE | CA | 940021528 |
| BUTTE | 027-200-029-000 | OROVILLE | 250 AIRPORT PKWY | CA | 959659249 |
| BUTTE | 026-230-034-000 | PALERMO | PO BOX 274 | CA | 959680274 |
| BUTTE | 027-200-073-000 | OROVILLE | 250 AIRPORT PKWY | CA | 959659249 |
| BUTTE | 026-230-066-000 | OROVILLE | 23 MCCABE CT | CA | 959663930 |
| BUTTE | 026-143-022-000 | PALERMO | PO BOX 332 | CA | 959680332 |
| BUTTE | 026-230-065-000 | OROVILLE | 7855 RAILROAD AVE | CA | 959669022 |
| BUTTE | 026-230-015-000 | PALERMO | PO BOX 672 | CA | 959680672 |
| BUTTE | 078-040-033-000 | OROVILLE | 1805 FEATHER AVE | CA | 959654180 |
| BUTTE | 078-040-022-000 | OROVILLE | 22 NELSIER PL | CA | 959669575 |
| BUTTE | 026-050-005-000 | OAKLAND | 5118 CONGRESS AVE | CA | 946015404 |
| BUTTE | 026-020-017-000 | PALERMO | PO BOX 187 | CA | 959680187 |
| BUTTE | 028-030-036-000 | FRESNO | PO BOX 25006 | CA | 937295006 |
| BUTTE | 028-020-056-000 | OROVILLE | 771 CENTRAL HOUSE RD | CA | 959659652 |
| BUTTE | 078-090-043-000 | SAN JOSE | 801 S WINCHESTER BLVD 3406 | CA | 951282972 |
| BUTTE | 078-040-031-000 | CHANDLER | 2320 W RAY RD 3 | AZ | 852243516 |
| BUTTE | 078-040-032-000 | CHANDLER | 2320 W RAY RD 3 | AZ | 852243516 |
| BUTTE | 078-070-029-000 | OROVILLE | 2441 PINECREST RD | CA | 959669015 |
| BUTTE | 028-030-021-000 | GRIDLEY | PO BOX 929 | CA | 959480929 |
| SUTTER | 60-010-055 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| SUTTER | 60-010-054 | SACRAMENTO | 9476 SAINT LOUIS WAY | CA | 958271037 |
| SUTTER | 60-010-065 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| SUTTER | 60-010-067 | MARYSVILLE | 2088 N BEALE RD | CA | 959017605 |
| SUTTER | 28-040-022 | RIO OSO | 1959 CORNELIUS AVE | CA | 956749616 |
| SUTTER | 60-010-046 | SACRAMENTO | 9476 SAINT LOUIS WAY | CA | 958271037 |
| SUTTER | 28-190-042 | RIO OSO | 1745 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-190-003 | SANTA CLARITA | 25303 HEATHER VALE ST | CA | 913503312 |
| SUTTER | 28-190-049 | RIO OSO | 1755 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-190-058 | RIO OSO | 1639 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-040-003 | RIO OSO | 3120 BEAR RIVER DR | CA | 956749622 |
| SUTTER | 28-092-002 | RIO OSO | 810 GREENE ST | CA | 956749644 |
| SUTTER | 28-092-005 | RIO OSO | PO BOX 7 | CA | 956740007 |
| SUTTER | 28-200-014 | RIO OSO | 1998 PLEASANT GROVE RD | CA | 956749649 |
| SUTTER | 28-190-050 | RIO OSO | 1783 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-190-055 | RIO OSO | 1691 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-092-007 | RIO OSO | 846 GREENE ST | CA | 956749644 |
| SUTTER | 28-093-014 | RIO OSO | 2299 RIO OSO RD RD-B | CA | 956749652 |
| SUTTER | 28-190-053 | RIO OSO | 1653 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-190-057 | RIO OSO | PO BOX 65 | CA | 956740065 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| SUTTER | 28-190-025 | RIO OSO | 1919 PACIFIC AVE | CA | 956749639 |
| SUTTER | 28-140-003 | FALLBROOK | 460 RANCHO CAMINO | CA | 920289092 |
| SUTTER | 28-200-004 | PLEASANT GROVE | 2787 PLEASANT GROVE RD | CA | 956689732 |
| SUTTER | 28-150-048 | RIO OSO | PO BOX 38 | CA | 956740038 |
| SUTTER | 28-190-063 | TROWBRIDGE | 1991 PACIFIC AVE | CA | 956599601 |
| SUTTER | 28-190-044 | RIO OSO | 1929 PACIFIC AVE | CA | 956749639 |
| SUTTER | 28-060-004 | RIO OSO | 999 PACIFIC AVE | CA | 956749618 |
| SUTTER | 28-150-046 | YUBA CITY | 3428 JEFFERSON AVE | CA | 959938711 |
| SUTTER | 28-190-045 | RIO OSO | 1939 PACIFIC AVE | CA | 956749639 |
| SUTTER | 28-190-048 | RIO OSO | 1829 PACIFIC AVE | CA | 956749638 |
| SUTTER | 28-060-003 | RIO OSO | PO BOX 1 | CA | 956740001 |
| SUTTER | 28-092-004 | OLIVEHURST | 3458 PLUMAS ARBOGA RD | CA | 959619652 |
| SUTTER | 28-200-010 | YUBA CITY | 494 JONES RD | CA | 959915723 |
| SUTTER | 28-190-062 | RIO OSO | 1965 PACIFIC AVE | CA | 956749639 |
| SUTTER | 28-190-054 | RIO OSO | 1671 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-240-004 | YUBA CITY | 415 CENTURY PARK DR | CA | 959915772 |
| SUTTER | 28-150-032 | RIO OSO | PO BOX 1 | CA | 956740001 |
| SUTTER | 28-092-006 | OLIVEHURST | 3458 PLUMAS ARBOGA RD | CA | 959619652 |
| SUTTER | 28-200-006 | SACRAMENTO | 3931 IVY ST | CA | 958383826 |
| SUTTER | 28-092-008 | RIO OSO | 826 GREENE ST | CA | 956749644 |
| SUTTER | 28-060-001 | RIO OSO | PO BOX 5 | CA | 956740005 |
| SUTTER | 28-150-042 | RIO OSO | 1407 PACIFIC AVE | CA | 956749618 |
| SUTTER | 28-200-009 | GRIDLEY | 880 TOWNSHIP RD | CA | 959489538 |
| SUTTER | 28-200-007 | YUBA CITY | 494 JONES RD | CA | 959915723 |
| SUTTER | 28-200-002 | RIO OSO | 3270 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 28-200-003 | RIO OSO | 3270 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 28-150-018 | RIO OSO | PO BOX 38 | CA | 956740038 |
| SUTTER | 28-200-001 | BIGGS | 213 B ST | CA | 959179701 |
| SUTTER | 28-070-004 | RIO OSO | PO BOX 116 | CA | 956740116 |
| SUTTER | 28-150-041 | BROOKDALE | PO BOX 308 | CA | 950070308 |
| SUTTER | 28-150-008 | RIO OSO | PO BOX 1 | CA | 956740001 |
| SUTTER | 28-200-011 | WHEATLAND | PO BOX 29 | CA | 956920029 |
| SUTTER | 28-240-034 | YUBA CITY | 2285 STONYBROOK DR | CA | 959918311 |
| SUTTER | 28-070-013 | RIO OSO | PO BOX 116 | CA | 956740116 |
| SUTTER | 28-040-002 | SACRAMENTO | 1807 13TH ST 103 | CA | 958117137 |
| SUTTER | 28-040-001 | SACRAMENTO | 1807 13TH ST 103 | CA | 958117137 |
| SUTTER | 28-093-015 | RIO OSO | 2299 RIO OSO RD C | CA | 956749652 |
| SUTTER | 28-070-006 | RIO OSO | PO BOX 5 | CA | 956740005 |
| SUTTER | 28-093-012 | RIO OSO | 2303 RIO OSO RD | CA | 956749608 |
| SUTTER | 28-190-056 | RIO OSO | 1601 PACIFIC AVE | CA | 956749637 |
| SUTTER | 28-190-007 | WEST SACRAMENTO | 2865 DAVIS RD | CA | 956915212 |
| SUTTER | 28-190-018 | RIO OSO | 1869 PACIFIC AVE | CA | 956749638 |
| SUTTER | 28-150-056 | RIO OSO | 1315 PACIFIC AVE | CA | 956749618 |
| SUTTER | 28-190-013 | RIO OSO | 3126 BETZ RD | CA | 956749642 |
| SUTTER | 28-190-002 | PLEASANT GROVE | 2787 PLEASANT GROVE RD | CA | 956689732 |
| SUTTER | 28-093-013 | RIO OSO | 2299 RIO OSO RD A | CA | 956749652 |
| SUTTER | 28-150-052 | PLEASANT GROVE | 5881 PLEASANT GROVE RD | CA | 956689701 |
| SUTTER | 23-120-021 | YUBA CITY | 889 BARRY RD | CA | 959919712 |
| SUTTER | 23-040-082 | YUBA CITY | 1196 STEWART RD | CA | 959919707 |
| SUTTER | 23-072-006 | MARYSVILLE | 8880 STATE HIGHWAY 70 | CA | 959013041 |
| SUTTER | 23-120-026 | YUBA CITY | 7250 S GEORGE WASHINGTON BLVD | CA | 959939743 |
| SUTTER | 23-040-058 | YUBA CITY | 2431 RAILROAD AVE | CA | 959919254 |
| SUTTER | 23-040-059 | YUBA CITY | 2431 RAILROAD AVE | CA | 959919254 |
| SUTTER | 23-430-015 | YUBA CITY | 950 LOS BRAVOS DR | CA | 959919227 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| SUTTER | 23-430-016 | BAKERSFIELD | 9008 GOLDEN HAWK CT | CA | 933126602 |
| SUTTER | 23-430-017 | YUBA CITY | 949 STEWART RD | CA | 959919708 |
| SUTTER | 23-430-018 | YUBA CITY | 1201 CIVIC CENTER BLVD | CA | 959933005 |
| SUTTER | 23-430-023 | YUBA CITY | 949 LOS BRAVOS DR | CA | 959919252 |
| SUTTER | 23-072-007 | YUBA CITY | 1904 DEERFIELD DR | CA | 959939276 |
| SUTTER | 23-072-022 | YUBA CITY | 1022 BARRY RD | CA | 959919230 |
| SUTTER | 23-180-006 | YUBA CITY | 4107 GARDEN HWY | CA | 959919728 |
| SUTTER | 23-180-007 | SACRAMENTO | 4400 AUBURN BLVD 102 | CA | 958414145 |
| SUTTER | 23-430-001 | YUBA CITY | 929 EL VALLAS CIR | CA | 959919225 |
| SUTTER | 23-430-002 | YUBA CITY | 955 EL VALLAS CIR | CA | 959919225 |
| SUTTER | 23-040-020 | YUBA CITY | 243 2ND ST | CA | 959915520 |
| SUTTER | 23-101-019 | YUBA CITY | 2444 TUSCAN RD | CA | 959919115 |
| SUTTER | 23-130-011 | YUBA CITY | 3909 GARDEN HWY | CA | 959919714 |
| SUTTER | 23-130-010 | YUBA CITY | 3909 GARDEN HWY | CA | 959919714 |
| SUTTER | 23-130-012 | YUBA CITY | PO BOX 3546 | CA | 959923546 |
| SUTTER | 23-130-015 | YUBA CITY | 894 BARRY RD | CA | 959919712 |
| SUTTER | 23-130-016 | YUBA CITY | 894 BARRY RD | CA | 959919712 |
| SUTTER | 23-072-033 | YUBA CITY | 1854 CREEKWOOD DR | CA | 959938307 |
| SUTTER | 23-120-067 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-130-018 | YUBA CITY | 892 BARRY RD | CA | 959919712 |
| SUTTER | 23-073-001 | YUBA CITY | 1130 CIVIC CENTER BLVD | CA | 959933008 |
| SUTTER | 23-074-010 | YUBA CITY | 3818 RAILROAD AVE | CA | 959919724 |
| SUTTER | 23-074-014 | YUBA CITY | PO BOX 3378 | CA | 95992 |
| SUTTER | 23-074-012 | YUBA CITY | 1160 REED RD | CA | 959919107 |
| SUTTER | 23-074-013 | YUBA CITY | 3818 RAILROAD AVE | CA | 959919724 |
| SUTTER | 23-074-015 | YUBA CITY | PO BOX 3378 | CA | 95992 |
| SUTTER | 23-053-029 | YUBA CITY | 958 STEWART RD | CA | 959919708 |
| SUTTER | 23-053-039 | YUBA CITY | 2847 RAILROAD AVE | CA | 959919228 |
| SUTTER | 23-053-031 | YUBA CITY | 2877 RAILROAD AVE | CA | 959919228 |
| SUTTER | 23-053-038 | YUBA CITY | 2821 RAILROAD AVE | CA | 959919228 |
| SUTTER | 23-053-041 | YUBA CITY | 2941 RAILROAD AVE | CA | 959919229 |
| SUTTER | 23-120-068 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-120-069 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-350-017 | YUBA CITY | 2125 RAILROAD AVE | CA | 959919238 |
| SUTTER | 23-350-013 | YUBA CITY | 2073 RAILROAD AVE | CA | 959919238 |
| SUTTER | 23-350-015 | YUBA CITY | PO BOX 3658 | CA | 959923658 |
| SUTTER | 23-350-016 | SACRAMENTO | 5003 SIENNA LN | CA | 958352058 |
| SUTTER | 23-130-025 | YUBA CITY | 3661 GARDEN HWY | CA | 959919714 |
| SUTTER | 23-130-026 | YUBA CITY | 690 BARRY RD | CA | 959919726 |
| SUTTER | 23-130-027 | YUBA CITY | 690 BARRY RD | CA | 959919726 |
| SUTTER | 23-130-028 | YUBA CITY | 1361 JONES RD | CA | 959916706 |
| SUTTER | 23-130-030 | YUBA CITY | 1749 SANBORN RD | CA | 959936042 |
| SUTTER | 23-380-003 | YUBA CITY | 2323 RAILROAD AVE | CA | 959919254 |
| SUTTER | 23-380-004 | YUBA CITY | 2341 RAILROAD AVE | CA | 959919254 |
| SUTTER | 23-380-007 | MARYSVILLE | PO BOX 591 | CA | 959010015 |
| SUTTER | 23-380-005 | LAKE ELSINORE | 31902 MANZANITA LN | CA | 925322612 |
| SUTTER | 23-380-006 | YUBA CITY | 1060 WAVERLY CT | CA | 959916915 |
| SUTTER | 23-380-008 | YUBA CITY | 2267 RAILROAD AVE | CA | 959919254 |
| SUTTER | 23-130-032 | YUBA CITY | 250 BARRY RD | CA | 959919713 |
| SUTTER | 23-120-031 | YUBA CITY | 7250 S GEORGE WASHINGTON BLVD | CA | 959939743 |
| SUTTER | 23-120-055 | YUBA CITY | 1611 RIO VISTA WAY | CA | 959936111 |
| SUTTER | 23-120-058 | YUBA CITY | PO BOX 3732 | CA | 959923732 |
| SUTTER | 23-102-002 | YUBA CITY | 2909 CAMINITO AVE | CA | 959919711 |
| SUTTER | 23-102-003 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| SUTTER | 23-380-009 | YUBA CITY | 3307 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-380-010 | YUBA CITY | 2127 RAILROAD AVE | CA | 959919224 |
| SUTTER | 23-380-011 | YUBA CITY | 2127 RAILROAD AVE | CA | 959919224 |
| SUTTER | 23-102-005 | YUBA CITY | 882 STEWART RD | CA | 959919709 |
| SUTTER | 23-102-011 | YUBA CITY | 898 STEWART RD | CA | 959919740 |
| SUTTER | 23-102-006 | YUBA CITY | 3307 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-102-007 | YUBA CITY | 2909 CAMINITO AVE | CA | 959919711 |
| SUTTER | 23-102-009 | YUBA CITY | 898 STEWART RD | CA | 959919740 |
| SUTTER | 23-102-012 | YUBA CITY | 2836 RAILROAD AVE | CA | 959919228 |
| SUTTER | 23-101-046 | YUBA CITY | 2618 RAILROAD AVE | CA | 959919226 |
| SUTTER | 23-101-044 | YUBA CITY | 688 SCIROCCO DR | CA | 959917573 |
| SUTTER | 23-101-045 | YUBA CITY | 2596 RAILROAD AVE | CA | 959919212 |
| SUTTER | 23-101-047 | YUBA CITY | 2648 RAILROAD AVE | CA | 959919226 |
| SUTTER | 23-101-048 | YUBA CITY | 2696 RAILROAD AVE | CA | 959919226 |
| SUTTER | 23-065-056 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-065-055 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-065-057 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-430-008 | PINOLE | 1221 BELFAIR DR | CA | 945641920 |
| SUTTER | 23-430-007 | YUBA CITY | 3307 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-430-009 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-065-041 | YUBA CITY | 933 BARRY RD A | CA | 959919230 |
| SUTTER | 23-065-038 | LIVE OAK | 3814 SANDERS RD | CA | 959539730 |
| SUTTER | 23-065-042 | YUBA CITY | 4793 GARDEN HWY | CA | 959919424 |
| SUTTER | 23-065-004 | YUBA CITY | 1793 REGENCY WAY | CA | 959935177 |
| SUTTER | 23-101-007 | SACRAMENTO | 7032 EL SERENO CIR | CA | 958313125 |
| SUTTER | 23-065-008 | YUBA CITY | 925 BARRY RD | CA | 959919230 |
| SUTTER | 23-101-010 | YUBA CITY | 1914 RAMERIZ DR | CA | 959937151 |
| SUTTER | 23-101-011 | YUBA CITY | 889 STEWART RD | CA | 959919709 |
| SUTTER | 23-101-012 | YUBA CITY | 430 S GEORGE WASHINGTON BLVD | CA | 959939154 |
| SUTTER | 23-065-046 | YUBA CITY | 851 MURRAY CT | CA | 959916121 |
| SUTTER | 23-065-048 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-065-050 | YUBA CITY | 3281 CAMINITO AVE | CA | 959919705 |
| SUTTER | 23-065-051 | YUBA CITY | 851 MURRAY CT | CA | 959916121 |
| SUTTER | 23-065-012 | YUBA CITY | 1452 COUNTRYSIDE DR | CA | 959935233 |
| SUTTER | 23-065-015 | YUBA CITY | 3463 RAILROAD AVE | CA | 959919229 |
| SUTTER | 23-120-036 | YUBA CITY | 2600 LINCOLN RD | CA | 959939762 |
| SUTTER | 23-130-021 | YUBA CITY | 1910 FRAN CT | CA | 959937122 |
| SUTTER | 23-130-022 | YUBA CITY | 1910 FRAN CT | CA | 959937122 |
| SUTTER | 23-053-045 | YUBA CITY | 2911 RAILROAD AVE | CA | 959919229 |
| SUTTER | 23-053-048 | YUBA CITY | 2929 RAILROAD AVE | CA | 959919229 |
| SUTTER | 23-120-052 | YUBA CITY | 370 N WALTON AVE | CA | 959939349 |
| SUTTER | 23-040-066 | YUBA CITY | 915 STEWART RD | CA | 959919708 |
| SUTTER | 23-040-077 | YUBA CITY | 1201 CIVIC CENTER BLVD | CA | 959933005 |
| SUTTER | 23-040-081 | YUBA CITY | 1196 STEWART RD | CA | 959919707 |
| SUTTER | 23-040-084 | MARYSVILLE | PO BOX 911 | CA | 959010911 |
| SUTTER | 33-101-032 | TROWBRIDGE | 2289 PACIFIC AVE | CA | 956599604 |
| SUTTER | 33-101-031 | TROWBRIDGE | 2251 PACIFIC AVE | CA | 956599604 |
| SUTTER | 10-250-058 | YUBA CITY | 3319 TIERRA BUENA RD | CA | 959939603 |
| SUTTER | 10-250-060 | YUBA CITY | 3025 TIERRA BUENA RD | CA | 959938524 |
| SUTTER | 10-250-063 | YUBA CITY | 2179 REDDING AVE | CA | 959931319 |
| SUTTER | 10-250-064 | YUBA CITY | 1639 HOOPER RD | CA | 959938839 |
| SUTTER | 33-070-001 | RIO OSO | 3270 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 33-070-002 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 10-260-074 | YUBA CITY | PO BOX 3730 | CA | 959923730 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| SUTTER | 10-260-075 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| SUTTER | 10-260-078 | YUBA CITY | 1365 HONOR OAK LN | CA | 959932312 |
| SUTTER | 10-250-023 | LIVE OAK | 2311 EAGER RD | CA | 959539741 |
| SUTTER | 33-102-047 | E NICOLAUS | PO BOX 95 | CA | 95622 |
| SUTTER | 23-040-080 | YUBA CITY | 1196 STEWART RD | CA | 959919707 |
| SUTTER | 33-080-012 | RIO OSO | PO BOX 42 | CA | 956740042 |
| SUTTER | 33-080-011 | TROWBRIDGE | 2219 PACIFIC AVE | CA | 956599604 |
| SUTTER | 33-080-024 | RIO LINDA | 7125 2ND ST | CA | 956732129 |
| SUTTER | 23-072-010 | YUBA CITY | 1000 OSWALD RD K | CA | 959919719 |
| SUTTER | 33-080-009 | RIO OSO | 2991 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 33-080-008 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 10-260-009 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| SUTTER | 17-052-012 | YUBA CITY | 2550 ELMER AVE | CA | 959931408 |
| SUTTER | 10-250-024 | LIVE OAK | 2311 EAGER RD | CA | 959539741 |
| SUTTER | 10-250-025 | YUBA CITY | 3302 ELMER AVE | CA | 959939605 |
| SUTTER | 10-250-026 | LIVE OAK | 2311 EAGER RD | CA | 959539741 |
| SUTTER | 10-250-032 | YUBA CITY | 2079 S GEORGE WASHINGTON BLVD | CA | 959939212 |
| SUTTER | 33-080-027 | HENDERSON | 942 CALAMITY JANE LN | NV | 890029450 |
| SUTTER | 33-080-025 | CENTRAL POINT | 5924 UPTON RD | OR | 975029469 |
| SUTTER | 10-250-004 | SANTA CRUZ | 1420 W CLIFF DR | CA | 950606357 |
| SUTTER | 33-080-019 | RIO OSO | 999 PACIFIC AVE | CA | 956749618 |
| SUTTER | 33-080-017 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 33-080-020 | RIO OSO | 999 PACIFIC AVE | CA | 956749618 |
| SUTTER | 33-080-023 | RIO OSO | 999 PACIFIC AVE | CA | 956749618 |
| SUTTER | 33-080-016 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 33-080-035 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 33-080-013 | RIO OSO | 2777 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 33-080-014 | RIO OSO | 2777 CORNELIUS AVE | CA | 956749627 |
| SUTTER | 33-080-034 | RIO OSO | 3126 BETZ RD | CA | 956749642 |
| SUTTER | 33-080-010 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 33-080-007 | NEWCASTLE | 6920 RAVINE CT | CA | 956589481 |
| SUTTER | 33-080-050 | RIO OSO | 2441 CORNELIUS AVE | CA | 956749617 |
| SUTTER | 33-080-006 | RIO OSO | 2449 CORNELIUS AVE | CA | 956749617 |
| SUTTER | 10-270-007 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| SUTTER | 33-101-016 | TROWBRIDGE | 2327 PACIFIC AVE | CA | 956599604 |
| SUTTER | 10-270-010 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| YUBA | 022-060-003-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-176-004-000 | MARYSVILLE | 1905 FERNWOOD DR | CA | 959017213 |
| YUBA | 021-162-026-000 | PROVIDENCE | 125 DUPONT DR | RI | 029073105 |
| YUBA | 021-185-016-000 | MARYSVILLE | 5760 WILDWOOD DR | CA | 959017320 |
| YUBA | 014-350-065-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 013-370-047-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 021-183-007-000 | MARYSVILLE | 1889 FERNWOOD DR | CA | 959017324 |
| YUBA | 021-184-003-000 | MARYSVILLE | 1894 FERNWOOD DR | CA | 959017331 |
| YUBA | 021-162-042-000 | BIGGS | 219 HASTINGS AVE | CA | 959179707 |
| YUBA | 021-162-041-000 | BIGGS | 219 HASTINGS AVE | CA | 959179707 |
| YUBA | 021-176-003-000 | MARYSVILLE | 1988 PINEWOOD WAY | CA | 959017345 |
| YUBA | 021-175-003-000 | MARYSVILLE | 1904 FERNWOOD DR | CA | 959017331 |
| YUBA | 021-185-017-000 | YUBA CITY | 2340 SAINT FRANCIS WAY | CA | 959939345 |
| YUBA | 019-230-080-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 014-010-027-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 014-031-022-000 | ORANGEVALE | 9124 CHERRY AVE | CA | 956622206 |
| YUBA | 014-350-044-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 021-176-005-000 | MARYSVILLE | 1901 FERNWOOD DR | CA | 959017213 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 021-176-006-000 | MARYSVILLE | 1973 BIRCH CT | CA | 959017304 |
| YUBA | 021-162-044-000 | YUBA CITY | PO BOX 3084 | CA | 959923084 |
| YUBA | 013-360-051-000 | YUBA CITY | 1845 OSWALD RD | CA | 959939728 |
| YUBA | 014-153-002-000 | YUBA CITY | 1698 PORTOFINO DR | CA | 959931678 |
| YUBA | 019-230-081-000 | BOISE | 30 W HORIZON DR | ID | 837024419 |
| YUBA | 016-110-002-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-104-008-000 | CROWN POINT | 1730 W 98TH PL | IN | 463072411 |
| YUBA | 014-360-010-000 | WHEATLAND | PO BOX 91 | CA | 956920091 |
| YUBA | 013-640-002-000 | OLIVEHURST | 1888 17TH ST | CA | 959614708 |
| YUBA | 021-162-028-000 | SACRAMENTO | 7841 INKSTER WAY | CA | 958296592 |
| YUBA | 021-184-004-000 | MARYSVILLE | 5578 KIRKHILL DR | CA | 959018325 |
| YUBA | 021-162-049-000 | MARYSVILLE | 1960 N BEALE RD | CA | 959016921 |
| YUBA | 016-040-049-000 | MARYSVILLE | PO BOX 2427 | CA | 959010087 |
| YUBA | 021-185-015-000 | MARYSVILLE | 1882 FERNWOOD DR | CA | 959017332 |
| YUBA | 014-143-025-000 | OLIVEHURST | 4031 GEORGE AVE | CA | 959619315 |
| YUBA | 013-640-038-000 | OLIVEHURST | 1572 BLACK ANGUS WAY | CA | 959619389 |
| YUBA | 021-162-040-000 | BIGGS | 219 HASTINGS AVE | CA | 959179707 |
| YUBA | 016-040-063-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 016-040-019-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 016-040-104-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 013-010-017-000 | PLEASANT GROVE | 7193 B PLEASANT GROVE RD | CA | 956689710 |
| YUBA | 013-360-014-000 | OLIVEHURST | 1251 ELLA AVE | CA | 959618807 |
| YUBA | 013-010-016-000 | GRANITE BAY | 4745 TROWBRIDGE CT | CA | 957467240 |
| YUBA | 021-184-010-000 | MARYSVILLE | 5765 WILDWOOD DR | CA | 959017319 |
| YUBA | 013-010-050-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 014-143-018-000 | OLIVEHURST | 4161 GEORGE AVE | CA | 959619328 |
| YUBA | 021-175-004-000 | MARYSVILLE | 5711 WILDWOOD DR | CA | 959018302 |
| YUBA | 021-184-005-000 | SACRAMENTO | 826 17TH ST 10 | CA | 958112027 |
| YUBA | 019-230-030-000 | AUSTIN | PO BOX 1742 | TX | 787671742 |
| YUBA | 014-091-016-000 | OLIVEHURST | 1993 BAUGH ST | CA | 959614715 |
| YUBA | 014-091-017-000 | OLIVEHURST | 1373 BUTTERFLY LN | CA | 959619649 |
| YUBA | 014-091-018-000 | OLIVEHURST | 1979 BAUGH ST | CA | 959614715 |
| YUBA | 014-091-019-000 | OLIVEHURST | 1971 BAUGH ST | CA | 959614715 |
| YUBA | 021-184-008-000 | MARYSVILLE | 5777 WILDWOOD DR | CA | 959017319 |
| YUBA | 013-360-034-000 | MARYSVILLE | 4316 RANCHO RD | CA | 959019647 |
| YUBA | 013-360-021-000 | MARYSVILLE | PO BOX 2377 | CA | 959010085 |
| YUBA | 013-360-031-000 | OLIVEHURST | 4087 HAZEL ST | CA | 959619613 |
| YUBA | 013-360-033-000 | OLIVEHURST | 4096 HAZEL ST | CA | 959619613 |
| YUBA | 016-060-043-000 | ARBOGA | 1594 BROADWAY ST | CA | 959618821 |
| YUBA | 014-530-019-000 | PLUMAS LAKE | 2934 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-350-066-000 | ARBOGA | 3024 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 014-530-018-000 | ARBOGA | 3024 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 014-010-032-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 014-143-021-000 | OLIVEHURST | 4139 GEORGE AVE | CA | 959619328 |
| YUBA | 014-010-030-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 014-010-005-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-143-026-000 | TORRANCE | 1983 W 190TH ST | CA | 905046234 |
| YUBA | 021-042-010-000 | MARYSVILLE | 5962 GROVE AVE | CA | 959016817 |
| YUBA | 021-042-012-000 | MARYSVILLE | 2015 HAMMONTON RD | CA | 95901 |
| YUBA | 021-162-014-000 | MARYSVILLE | 1926 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-174-002-000 | FOLSOM | PO BOX 6660 | CA | 957636660 |
| YUBA | 019-230-059-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-162-008-000 | ROSEVILLE | 224 NUNZIA CT | CA | 956613979 |
| YUBA | 021-162-050-000 | ROSEVILLE | 2087 BLACKHEATH LN | CA | 956783410 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 021-162-027-000 | DISCOVERY BAY | 4445 DISCOVERY PT | CA | 945059467 |
| YUBA | 021-183-009-000 | MARYSVILLE | 5789 WILDWOOD DR | CA | 959017335 |
| YUBA | 018-040-031-000 | YUBA CITY | 1130 BRIDGE ST | CA | 959913662 |
| YUBA | 018-040-020-000 | GRANITE BAY | 8200 TURNER DR | CA | 957468107 |
| YUBA | 018-040-012-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-530-008-000 | ARBOGA | 2862 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-400-040-000 | ARBOGA | 2514 OLD MARYSVILLE RD | CA | 959619661 |
| YUBA | 013-660-029-000 | ROSEVILLE | 3300 DOUGLAS BLVD | CA | 956613844 |
| YUBA | 021-500-082-000 | STOCKTON | PO BOX 7506 | CA | 952670506 |
| YUBA | 021-162-013-000 | MARYSVILLE | 1924 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-162-012-000 | MARYSVILLE | 1922 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-173-012-000 | MARYSVILLE | 1917 FERNWOOD DR | CA | 959017241 |
| YUBA | 014-160-042-000 | MARYSVILLE | 1919 B ST | CA | 959013731 |
| YUBA | 014-031-027-000 | OLIVEHURST | 4496 POWERLINE RD | CA | 959614631 |
| YUBA | 014-031-018-000 | OLIVEHURST | 1731 SKINNER AVE | CA | 959614810 |
| YUBA | 014-031-019-000 | OLIVEHURST | 1965 GLENMORE DR | CA | 959614625 |
| YUBA | 014-031-017-000 | OLIVEHURST | 1957 GLENMORE DR | CA | 959614625 |
| YUBA | 014-153-001-000 | OLIVEHURST | 4089 GEORGE AVE | CA | 959619315 |
| YUBA | 014-132-035-000 | OLIVEHURST | 1991 MCGOWAN PKWY | CA | 959614733 |
| YUBA | 019-230-077-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 016-050-023-000 | RIO OSO | PO BOX 8 | CA | 956740008 |
| YUBA | 016-040-021-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |
| YUBA | 016-040-052-000 | ARBOGA | 2000 PLUMAS ARBOGA RD | CA | 959619672 |
| YUBA | 014-010-001-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-270-078-000 | ARBOGA | 1941 PLUMAS ARBOGA RD | CA | 959618812 |
| YUBA | 022-060-005-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 021-183-008-000 | MARYSVILLE | 1885 FERNWOOD DR | CA | 959017324 |
| YUBA | 021-184-006-000 | MARYSVILLE | 1888 FERNWOOD DR | CA | 959017331 |
| YUBA | 021-175-005-000 | MARYSVILLE | 1900 FERNWOOD DR | CA | 959017331 |
| YUBA | 014-270-094-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 019-230-075-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-184-012-000 | MARYSVILLE | 5753 WILDWOOD DR | CA | 959017319 |
| YUBA | 019-230-076-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 019-230-074-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 016-040-051-000 | RANCHO CORDOVA | 2332 RUDAT CIR | CA | 956703930 |
| YUBA | 014-010-028-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 014-190-045-000 | SEATTLE | 121 VINE ST 1804 | WA | 981211456 |
| YUBA | 014-350-048-000 | MINDEN | PO BOX 1210 | NV | 894231210 |
| YUBA | 021-162-043-000 | GRIDLEY | PO BOX 434 | CA | 959480434 |
| YUBA | 014-270-095-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 014-270-089-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 019-230-085-000 | AUSTIN | PO BOX 1742 | TX | 787671742 |
| YUBA | 016-140-010-000 | SACRAMENTO | 1416 9TH ST 431 | CA | 958145511 |
| YUBA | 016-140-016-000 | SACRAMENTO | 1807 13TH ST 103 | CA | 958117137 |
| YUBA | 014-350-042-000 | ARBOGA | 3090 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 006-060-019-000 | MARYSVILLE | PO BOX 389 | CA | 959010009 |
| YUBA | 021-183-006-000 | MARYSVILLE | 1893 FERNWOOD DR | CA | 959017324 |
| YUBA | 016-040-050-000 | FOLSOM | 314 FITCHBURG SQ | CA | 956306400 |
| YUBA | 021-183-005-000 | MARYSVILLE | 1984 BIRCH CT | CA | 959017304 |
| YUBA | 021-184-001-000 | MARYSVILLE | PO BOX 1125 | CA | 959010031 |
| YUBA | 021-183-004-000 | MARYSVILLE | 1978 BIRCH CT | CA | 959017304 |
| YUBA | 014-350-041-000 | ARBOGA | 3070 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 021-162-015-000 | MARYSVILLE | 1928 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-184-002-000 | MARYSVILLE | 1896 FERNWOOD DR | CA | 959017331 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 021-173-014-000 | MARYSVILLE | 1913 FERNWOOD DR | CA | 959017241 |
| YUBA | 021-174-004-000 | MARYSVILLE | 1914 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-183-003-000 | MARYSVILLE | 1972 BIRCH CT | CA | 959017304 |
| YUBA | 013-640-035-000 | OLIVEHURST | 1590 BLACK ANGUS WAY | CA | 959619389 |
| YUBA | 013-640-037-000 | OLIVEHURST | 1578 BLACK ANGUS WAY | CA | 959619389 |
| YUBA | 013-640-036-000 | OLIVEHURST | 1584 BLACK ANGUS WAY | CA | 959619389 |
| YUBA | 013-640-034-000 | OLIVEHURST | 1596 BLACK ANGUS WAY | CA | 959619389 |
| YUBA | 014-151-014-000 | MARYSVILLE | PO BOX 1925 | CA | 959010063 |
| YUBA | 013-640-033-000 | COLUMBIA | 23685 MARBLE QUARRY RD 7 | CA | 953109777 |
| YUBA | 014-270-093-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 021-500-083-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 014-031-023-000 | OLIVEHURST | 1993 14TH ST | CA | 959614601 |
| YUBA | 014-270-067-000 | OLIVEHURST | PO BOX 670 | CA | 959610670 |
| YUBA | 014-270-108-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 014-031-021-000 | YUBA CITY | 1340 ZEPHYR DR | CA | 959917559 |
| YUBA | 013-010-054-000 | OLIVEHURST | 2994 FEATHER RIVER BLVD | CA | 959618804 |
| YUBA | 021-174-001-000 | MARYSVILLE | 1920 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-174-003-000 | MARYSVILLE | 1916 FERNWOOD DR | CA | 959017214 |
| YUBA | 021-173-013-000 | MILPITAS | 502 WALNUT DR | CA | 950354133 |
| YUBA | 021-184-007-000 | MARYSVILLE | 1886 FERNWOOD DR | CA | 959017331 |
| YUBA | 016-140-003-000 | SACRAMENTO | PO BOX 942836 | CA | 942360001 |
| YUBA | 016-140-002-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-143-011-000 | OLIVEHURST | 4205 GEORGE AVE | CA | 959619326 |
| YUBA | 014-032-010-000 | OLIVEHURST | 1961 17TH ST | CA | 959614707 |
| YUBA | 013-360-042-000 | OLIVEHURST | 4107 FEATHER RIVER BLVD | CA | 959619697 |
| YUBA | 014-132-028-000 | OLIVEHURST | 1977 MCGOWAN PKWY | CA | 959614733 |
| YUBA | 014-132-027-000 | YUBA CITY | 890 RICHLAND RD | CA | 959916265 |
| YUBA | 021-173-011-000 | MARYSVILLE | 5903 FERN CT | CA | 959017207 |
| YUBA | 021-175-001-000 | OLIVEHURST | 4292 BUTTERCUP LN | CA | 959619689 |
| YUBA | 021-184-009-000 | MARYSVILLE | 5771 WILDWOOD DR | CA | 959017319 |
| YUBA | 021-173-015-000 | MARYSVILLE | 5578 KIRKHILL DR | CA | 959018325 |
| YUBA | 021-174-005-000 | STOCKTON | 3268 TIMBERLANE DR | CA | 952095120 |
| YUBA | 016-070-018-000 | BROWNS VALLEY | 9614 STERN LN | CA | 959189707 |
| YUBA | 013-640-032-000 | OLIVEHURST | 1608 BLACK ANGUS WAY | CA | 959619390 |
| YUBA | 013-640-031-000 | OLIVEHURST | 1614 BLACK ANGUS WAY | CA | 959619390 |
| YUBA | 014-270-085-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 014-270-084-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 014-270-105-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 021-500-002-000 | STOCKTON | PO BOX 7506 | CA | 952670506 |
| YUBA | 021-162-045-000 | CLEARLAKE | PO BOX 7070 | CA | 954227070 |
| YUBA | 014-105-016-000 | OLIVEHURST | 1985 18TH ST | CA | 959614711 |
| YUBA | 014-105-015-000 | OLIVEHURST | 1977 18TH ST | CA | 959614711 |
| YUBA | 014-105-014-000 | OLIVEHURST | 1969 18TH ST | CA | 959614711 |
| YUBA | 021-184-011-000 | MARYSVILLE | 5759 WILDWOOD DR | CA | 959017319 |
| YUBA | 019-230-078-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-033-019-000 | MARYSVILLE | 6202 HAPPY WAY | CA | 959016511 |
| YUBA | 014-082-013-000 | OLIVEHURST | 1970 15TH ST | CA | 959614645 |
| YUBA | 021-073-002-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-073-001-000 | MARYSVILLE | 6169 SUNSHINE AVE | CA | 959016557 |
| YUBA | 021-072-002-000 | OLIVEHURST | 1939 18TH ST | CA | 959614711 |
| YUBA | 019-712-028-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-032-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-030-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-029-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 019-712-031-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-033-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-034-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 018-040-030-000 | YUBA CITY | 1130 BRIDGE ST | CA | 959913662 |
| YUBA | 022-241-001-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-241-002-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-792-011-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-792-012-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-792-006-000 | OLIVEHURST | 4035 EUGENE DR | CA | 959614919 |
| YUBA | 019-621-013-000 | BEALE AFB | PO BOX 9127 | CA | 959039127 |
| YUBA | 021-073-013-000 | FORESTHILL | PO BOX 345 | CA | 956310345 |
| YUBA | 021-033-008-000 | MARYSVILLE | 6195 HAPPY WAY | CA | 959016510 |
| YUBA | 018-220-034-000 | MARYSVILLE | PO BOX 231 | CA | 959010006 |
| YUBA | 014-160-063-000 | OLIVEHURST | 4411 POWERLINE RD | CA | 959614627 |
| YUBA | 014-160-062-000 | MARYSVILLE | PO BOX 591 | CA | 959010015 |
| YUBA | 014-160-061-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 021-072-001-000 | MARYSVILLE | 1978 SUNRISE AVE | CA | 959016523 |
| YUBA | 019-622-026-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-622-001-000 | MARYSVILLE | 2072 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 019-622-002-000 | MARYSVILLE | 2070 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 013-140-049-000 | OLIVEHURST | 1975 8TH AVE | CA | 959614354 |
| YUBA | 013-793-011-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-793-013-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-793-005-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 019-602-012-000 | MARYSVILLE | 2018 COUNTRY CREEK CT | CA | 959018301 |
| YUBA | 019-602-011-000 | MARYSVILLE | 2012 COUNTRY CREEK CT | CA | 959018301 |
| YUBA | 019-602-025-000 | MARYSVILLE | 5612 STONY CREEK WAY | CA | 959018298 |
| YUBA | 019-602-026-000 | MARYSVILLE | 5606 STONY CREEK WAY | CA | 959018298 |
| YUBA | 021-174-006-000 | MARYSVILLE | 1910 FERNWOOD DR | CA | 959017214 |
| YUBA | 019-622-025-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 013-793-012-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 019-621-005-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 013-793-007-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-793-006-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 019-621-006-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-621-007-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-621-008-000 | MARYSVILLE | 2084 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 019-602-013-000 | MARYSVILLE | 2019 COUNTRY CREEK CT | CA | 959018301 |
| YUBA | 019-602-010-000 | MARYSVILLE | 2013 COUNTRY CREEK CT | CA | 959018301 |
| YUBA | 019-602-014-000 | MARYSVILLE | 2020 MILLFRONT CT | CA | 959018297 |
| YUBA | 013-370-060-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 022-241-004-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-792-007-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-792-008-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 019-711-012-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-036-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-035-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-038-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-037-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 022-242-008-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 019-621-010-000 | MARYSVILLE | 2080 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 019-621-009-000 | MARYSVILLE | 2082 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 022-241-003-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-792-009-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 013-792-010-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 021-033-018-000 | SAN JOSE | 370 JOSEFA ST | CA | 951263637 |
| YUBA | 019-712-041-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-039-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-040-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-042-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-046-000 | MARYSVILLE | 5543 REMINGTON WAY | CA | 959018349 |
| YUBA | 022-242-001-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-793-008-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-793-009-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-793-010-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-791-004-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-791-003-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-791-002-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 013-791-001-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 021-175-002-000 | LINCOLN | 4090 NICOLAUS RD | CA | 956489528 |
| YUBA | 022-242-002-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 019-583-029-000 | MARYSVILLE | 1952 WHITEWATER DR | CA | 959018305 |
| YUBA | 013-760-001-000 | MARYSVILLE | PO BOX 591 | CA | 959010015 |
| YUBA | 013-752-032-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 013-370-058-000 | ARBOGA | 1594 BROADWAY ST | CA | 959618821 |
| YUBA | 021-111-019-000 | LINDA | 1965 N BEALE RD | CA | 959016914 |
| YUBA | 021-073-008-000 | YUBA CITY | 1302 RUTH AVE | CA | 959939020 |
| YUBA | 021-072-008-000 | COOS BAY | 674 VILLAGE PINES DR | OR | 974202880 |
| YUBA | 021-042-026-000 | MARYSVILLE | PO BOX 2033 | CA | 959010071 |
| YUBA | 022-242-003-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-242-005-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-242-004-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-370-062-000 | ARBOGA | 1594 BROADWAY ST | CA | 959618821 |
| YUBA | 022-235-002-000 | TUCSON | 6065 E GULL CT | AZ | 857568758 |
| YUBA | 013-795-001-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 003-090-035-000 | STOCKTON | 2039 W LINCOLN RD | CA | 952072464 |
| YUBA | 003-090-006-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 013-751-003-000 | OLIVEHURST | 4024 HUSTON WAY | CA | 959617482 |
| YUBA | 013-751-001-000 | VACAVILLE | 1671 E MONTE VISTA AVE 214 | CA | 956883126 |
| YUBA | 013-751-002-000 | OLIVEHURST | 4028 HUSTON WAY | CA | 959617482 |
| YUBA | 013-751-004-000 | OLIVEHURST | 4020 HUSTON WAY | CA | 959617482 |
| YUBA | 022-242-007-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-234-004-000 | PLUMAS LAKE | 2110 FEATHER RIDGE DR | CA | 959618931 |
| YUBA | 022-244-004-000 | PLUMAS LAKE | 933 ABBOTSFORD CT | CA | 959618932 |
| YUBA | 022-243-007-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-235-005-000 | PLUMAS LAKE | 934 ABBOTSFORD CT | CA | 959618932 |
| YUBA | 019-591-001-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-591-028-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-591-002-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-591-027-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 013-752-028-000 | | | | |
| YUBA | 013-752-025-000 | OLIVEHURST | 4045 NORBY CT | CA | 959617484 |
| YUBA | 013-752-026-000 | OLIVEHURST | 4041 NORBY CT | CA | 959617484 |
| YUBA | 013-752-027-000 | APO | PSC 76 BOX 7514 | AP | 963190076 |
| YUBA | 021-073-012-000 | MARYSVILLE | 6113 SUNSHINE AVE | CA | 959016526 |
| YUBA | 022-242-006-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-243-001-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-243-002-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 022-243-004-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-243-003-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-235-004-000 | PLUMAS LAKE | 926 ABBOTSFORD CT | CA | 959618932 |
| YUBA | 022-244-003-000 | PLUMAS LAKE | 925 ABBOTSFORD CT | CA | 959618932 |
| YUBA | 014-350-067-000 | SACRAMENTO | 1727 7TH AVE | CA | 958183805 |
| YUBA | 016-040-117-000 | ARBOGA | 1594 BROADWAY ST | CA | 959618821 |
| YUBA | 021-073-009-000 | MARYSVILLE | 6129 SUNSHINE AVE | CA | 959016556 |
| YUBA | 021-033-036-000 | MARYSVILLE | 6197 MCLAUGHLIN WAY | CA | 959016518 |
| YUBA | 021-033-035-000 | MARYSVILLE | 1993 SUNRISE AVE | CA | 959016522 |
| YUBA | 022-040-019-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 022-245-001-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 019-592-024-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-592-023-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 013-140-048-000 | OLIVEHURST | 1963 8TH AVE | CA | 959614353 |
| YUBA | 013-140-056-000 | OLIVEHURST | 4784 POWERLINE RD | CA | 959614321 |
| YUBA | 022-235-003-000 | PLUMAS LAKE | 2107 FEATHER RIDGE DR | CA | 959618931 |
| YUBA | 022-244-001-000 | PLUMAS LAKE | 2119 FEATHER RIDGE DR | CA | 959618931 |
| YUBA | 022-244-002-000 | PLUMAS LAKE | 2127 FEATHER RIDGE DR | CA | 959618931 |
| YUBA | 021-072-009-000 | MARYSVILLE | 6128 SUNSHINE AVE | CA | 959016554 |
| YUBA | 021-033-010-000 | YUBA CITY | 861 MURRAY CT | CA | 959916121 |
| YUBA | 021-033-011-000 | MARYSVILLE | 1985 SUNRISE AVE | CA | 959016522 |
| YUBA | 021-033-012-000 | MARYSVILLE | 1981 SUNRISE AVE | CA | 959016522 |
| YUBA | 022-243-005-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 019-592-022-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-592-021-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-592-020-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 013-140-024-000 | OLIVEHURST | PO BOX 218 | CA | 959610218 |
| YUBA | 022-243-006-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 019-583-001-000 | MARYSVILLE | 2026 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-583-003-000 | MARYSVILLE | 2042 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 013-010-055-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 013-010-051-000 | YUBA CITY | 851 MURRAY CT | CA | 959916121 |
| YUBA | 019-583-027-000 | MARYSVILLE | 2037 RIVER ROCK DR | CA | 959018313 |
| YUBA | 019-583-028-000 | VALLEJO | 3239 TERRACE BEACH DR | CA | 945916347 |
| YUBA | 014-350-068-000 | SACRAMENTO | 1727 7TH AVE | CA | 958183805 |
| YUBA | 021-072-012-000 | MARYSVILLE | 6106 SUNSHINE AVE | CA | 959016527 |
| YUBA | 019-621-035-000 | MATHER | 10630 MATHER BLVD | CA | 956554125 |
| YUBA | 019-592-027-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-583-002-000 | ROCKLIN | 6320 WESTWOOD DR | CA | 956773459 |
| YUBA | 019-621-011-000 | MARYSVILLE | 2078 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 013-751-005-000 | OLIVEHURST | 4016 HUSTON WAY | CA | 959617482 |
| YUBA | 013-752-015-000 | | | | |
| YUBA | 003-090-024-000 | SANTA BARBARA | 1517 CHAPALA ST | CA | 931013016 |
| YUBA | 021-072-013-000 | MARYSVILLE | 1979 SUNSET AVE | CA | 959016524 |
| YUBA | 003-040-010-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 003-040-018-000 | YUBA CITY | 1528 STARR DR A | CA | 959932651 |
| YUBA | 014-840-003-000 | YUBA CITY | 950 THARP RD 1402 | CA | 959938352 |
| YUBA | 014-840-004-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 019-592-026-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-592-025-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 019-621-012-000 | MARYSVILLE | 2076 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 013-752-005-000 | OLIVEHURST | 4033 HUSTON WAY | CA | 959617482 |
| YUBA | 013-752-006-000 | | | | |
| YUBA | 021-033-013-000 | MARYSVILLE | 1977 SUNRISE AVE | CA | 959016522 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 013-752-016-000 | PLUMAS LAKE | 4044 NORBY CT | CA | 959617484 |
| YUBA | 005-360-016-000 | WOODLAND | 301 W CASA LINDA DR | CA | 956954510 |
| YUBA | 013-290-032-000 | OLIVEHURST | PO BOX 261 | CA | 959610261 |
| YUBA | 014-103-008-000 | OLIVEHURST | 1993 17TH ST | CA | 959614707 |
| YUBA | 014-220-038-000 | MILPITAS | 879 COVENTRY CIR | CA | 950353521 |
| YUBA | 022-050-006-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 013-290-057-000 | OLIVEHURST | 1968 10TH AVE | CA | 959614548 |
| YUBA | 013-290-052-000 | OLIVEHURST | 1974 10TH AVE | CA | 959614548 |
| YUBA | 013-290-053-000 | WHEATLAND | 2090 OAKLEY LN | CA | 956929716 |
| YUBA | 013-290-049-000 | OLIVEHURST | 1984 10TH AVE | CA | 959614548 |
| YUBA | 013-290-069-000 | NEVADA CITY | PO BOX 1816 | CA | 959591816 |
| YUBA | 013-190-052-000 | OLIVEHURST | 4770 PANORAMA TRL | CA | 959614247 |
| YUBA | 013-190-065-000 | OLIVEHURST | 4766 POWERLINE RD | CA | 959614320 |
| YUBA | 014-350-053-000 | PLUMAS LAKE | 3453 PLUMAS ARBOGA RD | CA | 959619652 |
| YUBA | 014-153-014-000 | OLIVEHURST | 4039 GEORGE AVE | CA | 959619315 |
| YUBA | 013-140-054-000 | OLIVEHURST | 4798 POWERLINE RD | CA | 959614321 |
| YUBA | 014-152-038-000 | OLIVEHURST | 3981 MARY AVE | CA | 959619325 |
| YUBA | 014-220-039-000 | MILPITAS | 879 COVENTRY CIR | CA | 950353521 |
| YUBA | 014-104-007-000 | OLIVEHURST | 4342 POWERLINE RD | CA | 959614735 |
| YUBA | 022-050-007-000 | ROSEVILLE | 1420 ROCKY RIDGE DR 320 | CA | 956612835 |
| YUBA | 005-020-038-000 | STOCKTON | 2039 W LINCOLN RD | CA | 952072464 |
| YUBA | 014-350-055-000 | OLIVEHURST | 3423 PLUMAS ARBOGA RD | CA | 959619652 |
| YUBA | 014-190-050-000 | SUTTER | PO BOX 365 | CA | 959820365 |
| YUBA | 014-360-002-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 013-190-055-000 | OLIVEHURST | 4780 POWERLINE RD | CA | 959614320 |
| YUBA | 014-151-016-000 | OLIVEHURST | 4016 MARY AVE | CA | 959619399 |
| YUBA | 013-640-011-000 | OLIVEHURST | 1600 CALISTOGA WAY | CA | 959619394 |
| YUBA | 013-640-008-000 | OLIVEHURST | 1616 CALISTOGA WAY | CA | 959619394 |
| YUBA | 013-640-010-000 | BENICIA | 2475 OAKRIDGE LN | CA | 945101186 |
| YUBA | 013-640-009-000 | OLIVEHURST | 1610 CALISTOGA WAY | CA | 959619394 |
| YUBA | 014-131-016-000 | OLIVEHURST | 1995 BEVERLY AVE | CA | 959614760 |
| YUBA | 014-350-052-000 | OLIVEHURST | 3469 PLUMAS ARBOGA RD | CA | 959619652 |
| YUBA | 014-350-059-000 | PLUMAS LAKE | 3034 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 014-350-060-000 | PLUMAS LAKE | 3000 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 005-020-052-000 | YUBA CITY | PO BOX 621 | CA | 959920621 |
| YUBA | 014-350-050-000 | ARBOGA | 1922 PLUMAS ARBOGA RD | CA | 959618812 |
| YUBA | 022-040-005-000 | PLEASANTON | 5050 HOPYARD RD 180 | CA | 945883394 |
| YUBA | 022-040-004-000 | SACRAMENTO | PO BOX 255787 | CA | 958655787 |
| YUBA | 022-040-003-000 | SACRAMENTO | PO BOX 255787 | CA | 958655787 |
| YUBA | 022-040-016-000 | PLEASANTON | 5050 HOPYARD RD 180 | CA | 945883394 |
| YUBA | 013-650-023-000 | OLIVEHURST | 4018 DONALD DR | CA | 959619381 |
| YUBA | 014-132-029-000 | MARYSVILLE | 424 D ST | CA | 959015707 |
| YUBA | 014-132-030-000 | OLIVEHURST | 1984 BEVERLY AVE | CA | 959614759 |
| YUBA | 014-132-011-000 | OLIVEHURST | 1974 BEVERLY AVE | CA | 959614759 |
| YUBA | 014-400-037-000 | FOLSOM | 314 FITCHBURG SQ | CA | 956306400 |
| YUBA | 013-370-021-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-092-029-500 | OLIVEHURST | 1972 BAUGH ST | CA | 959614716 |
| YUBA | 005-360-040-000 | MARYSVILLE | 950 RAMIREZ RD | CA | 959019444 |
| YUBA | 014-400-041-000 | ARBOGA | 2568 OLD MARYSVILLE RD | CA | 959619661 |
| YUBA | 014-250-028-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 014-151-022-000 | RIO OSO | PO BOX 42 | CA | 956740042 |
| YUBA | 013-190-059-000 | OLIVEHURST | 4778 POWERLINE RD | CA | 959614320 |
| YUBA | 013-190-020-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |
| YUBA | 014-143-013-000 | OLIVEHURST | 4187 GEORGE AVE | CA | 959619326 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 013-360-006-000 | OLIVEHURST | 1120 MURPHY RD | CA | 959619623 |
| YUBA | 013-640-018-000 | OLIVEHURST | 4005 DONALD DR | CA | 959619382 |
| YUBA | 013-650-024-000 | OLIVEHURST | 4012 DONALD DR | CA | 959619381 |
| YUBA | 014-082-017-000 | OLIVEHURST | 1991 16TH ST | CA | 959614649 |
| YUBA | 014-082-018-000 | MARYSVILLE | PO BOX 2376 | CA | 959010085 |
| YUBA | 014-082-019-000 | MARYSVILLE | PO BOX 1407 | CA | 959010041 |
| YUBA | 018-090-008-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 014-400-028-000 | PLUMAS LAKE | 1097 BRONCO DR | CA | 959619105 |
| YUBA | 014-152-042-000 | OLIVEHURST | 4047 MARY AVE | CA | 959619399 |
| YUBA | 014-151-013-000 | OLIVEHURST | 4050 MARY AVE | CA | 959619399 |
| YUBA | 014-143-020-000 | OLIVEHURST | PO BOX 1 | CA | 959610001 |
| YUBA | 013-640-012-000 | OLIVEHURST | 1594 CALISTOGA WAY | CA | 959619393 |
| YUBA | 013-190-061-000 | YUBA CITY | 1284 WILLOW CREEK DR | CA | 959911278 |
| YUBA | 013-640-029-000 | OLIVEHURST | 1626 BLACK ANGUS WAY | CA | 959619390 |
| YUBA | 013-640-030-000 | OLIVEHURST | 4024 HUSTON WAY | CA | 959617482 |
| YUBA | 013-640-003-000 | OLIVEHURST | 4041 DEATON DR | CA | 959619384 |
| YUBA | 014-153-019-000 | OLIVEHURST | 4031 GEORGE AVE | CA | 959619315 |
| YUBA | 013-640-039-000 | OLIVEHURST | 4039 DONALD DR | CA | 959619383 |
| YUBA | 013-640-004-000 | RIO LINDA | 2629 E ST | CA | 956735332 |
| YUBA | 014-081-014-000 | OLIVEHURST | 1975 15TH ST | CA | 959614644 |
| YUBA | 014-081-013-000 | OLIVEHURST | 1969 15TH ST | CA | 959614643 |
| YUBA | 014-152-005-000 | OLIVEHURST | 1926 HARVEY RD | CA | 959619317 |
| YUBA | 014-152-003-000 | OLIVEHURST | 3996 GEORGE AVE | CA | 959619324 |
| YUBA | 014-152-004-000 | OLIVEHURST | 1932 HARVEY RD | CA | 959619317 |
| YUBA | 014-151-004-000 | LA VERNE | 2615 FULTON RD | CA | 917504640 |
| YUBA | 014-850-014-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 014-152-006-000 | DIXON | 935 W F ST | CA | 956202607 |
| YUBA | 014-152-011-000 | OLIVEHURST | 1912 HARVEY RD | CA | 959619317 |
| YUBA | 014-152-012-000 | OLIVEHURST | 3993 MARY AVE | CA | 959619325 |
| YUBA | 013-190-070-000 | OLIVEHURST | 1960 8TH AVE | CA | 959614344 |
| YUBA | 013-190-015-000 | OLIVEHURST | 1974 8TH AVE | CA | 959614352 |
| YUBA | 013-190-058-000 | MISSION VIEJO | 26641 ALAMANDA | CA | 926915732 |
| YUBA | 013-190-057-000 | OLIVEHURST | 4017 MARY AVE | CA | 959619399 |
| YUBA | 013-010-011-000 | SACRAMENTO | 1416 9TH ST 431 | CA | 958145511 |
| YUBA | 013-190-053-000 | OLIVEHURST | 4774 PANORAMA TRL | CA | 959614247 |
| YUBA | 013-190-051-000 | OLIVEHURST | 4769 PANORAMA TRL | CA | 959614247 |
| YUBA | 018-080-001-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 014-530-015-000 | PLUMAS LAKE | 2934 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-530-017-000 | PLUMAS LAKE | 2934 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-082-016-000 | OLIVEHURST | 1992 15TH ST | CA | 959614646 |
| YUBA | 013-640-021-000 | OLIVEHURST | 1579 CALISTOGA WAY | CA | 959619395 |
| YUBA | 013-640-020-000 | OLIVEHURST | 1573 CALISTOGA WAY | CA | 959619395 |
| YUBA | 013-640-022-000 | OLIVEHURST | 1491 BUTTERCUP LN | CA | 959619674 |
| YUBA | 013-640-023-000 | SALINAS | 1216 MORENO DR | CA | 939054173 |
| YUBA | 013-640-024-000 | PHOENIX | 21001 N TATUM BLVD 1630-630 | AZ | 850504242 |
| YUBA | 013-640-025-000 | OLIVEHURST | 1603 CALISTOGA WAY | CA | 959619396 |
| YUBA | 014-105-017-000 | OLIVEHURST | 1956 GLENMORE DR | CA | 959614626 |
| YUBA | 014-091-013-000 | OLIVEHURST | 1978 16TH ST | CA | 959614650 |
| YUBA | 014-091-012-000 | OLIVEHURST | 1970 16TH ST | CA | 959614650 |
| YUBA | 013-190-071-000 | OLIVEHURST | 1966 8TH AVE | CA | 959614352 |
| YUBA | 014-495-004-000 | ARBOGA | 1708 CHATEAU DR | CA | 959614451 |
| YUBA | 014-143-010-000 | OLIVEHURST | 4195 GEORGE AVE | CA | 959619326 |
| YUBA | 013-190-054-000 | YUBA CITY | 2099 S GEORGE WASHINGTON BLVD | CA | 959939212 |
| YUBA | 013-370-039-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 013-370-039-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |
| YUBA | 014-153-021-000 | OLIVEHURST | PO BOX 68 | CA | 959610068 |
| YUBA | 014-103-007-000 | OLIVEHURST | 4352 POWERLINE RD | CA | 959614741 |
| YUBA | 014-103-006-000 | OLIVEHURST | 1983 17TH ST | CA | 959614707 |
| YUBA | 013-290-068-000 | OLIVEHURST | 4644 POWERLINE RD | CA | 959614515 |
| YUBA | 019-711-023-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 014-082-015-000 | OLIVEHURST | 1984 15TH ST | CA | 959614646 |
| YUBA | 014-082-014-000 | OLIVEHURST | 1976 15TH ST | CA | 959614646 |
| YUBA | 018-240-041-000 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| YUBA | 013-140-068-000 | MARYSVILLE | 608 H ST | CA | 959015422 |
| YUBA | 013-290-030-000 | OLIVEHURST | 4654 POWERLINE RD | CA | 959614515 |
| YUBA | 013-640-027-000 | WHEATLAND | 815 REDWOOD AVE | CA | 956929444 |
| YUBA | 014-152-033-000 | OLIVEHURST | 1912 HARVEY RD | CA | 959619317 |
| YUBA | 013-640-026-000 | SAN FRANCISCO | 195 LEXINGTON ST 4 | CA | 941101790 |
| YUBA | 013-640-028-000 | OLIVEHURST | 1621 CALISTOGA WAY | CA | 959619396 |
| YUBA | 014-152-032-000 | OLIVEHURST | 4017 MARY AVE | CA | 959619399 |
| YUBA | 013-650-020-000 | OLIVEHURST | 4034 DONALD DR | CA | 959619381 |
| YUBA | 014-143-015-000 | VACAVILLE | 301 ADOBE DR | CA | 956875804 |
| YUBA | 013-010-033-000 | OLIVEHURST | 2994 FEATHER RIVER BLVD | CA | 959618804 |
| YUBA | 013-360-062-000 | WILLITS | PO BOX 2295 | CA | 954902295 |
| YUBA | 018-040-004-000 | YUBA CITY | 813 SANBORN RD | CA | 959936062 |
| YUBA | 014-495-003-000 | ARBOGA | 1702 CHATEAU DR | CA | 959614451 |
| YUBA | 014-495-001-000 | ARBOGA | 1690 CHATEAU DR | CA | 959614451 |
| YUBA | 014-495-002-000 | ROSEVILLE | 1501 LATHWELL WAY | CA | 957476276 |
| YUBA | 014-153-020-000 | GRIDLEY | 2331 W BIGGS GRIDLEY RD | CA | 959489463 |
| YUBA | 014-530-010-000 | ARBOGA | 2832 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-103-005-000 | OLIVEHURST | 1456 ENGLISH WAY | CA | 959617480 |
| YUBA | 014-103-004-000 | OLIVEHURST | PO BOX 704 | CA | 959610704 |
| YUBA | 014-530-012-000 | ELK GROVE | 8722 GLADIOLA WAY | CA | 956243842 |
| YUBA | 013-290-064-000 | OLIVEHURST | 1985 11TH AVE | CA | 959614537 |
| YUBA | 013-290-038-000 | YUBA CITY | PO BOX 1095 | CA | 959921095 |
| YUBA | 014-031-026-000 | MARYSVILLE | 608 H ST | CA | 959015422 |
| YUBA | 014-153-010-000 | OLIVEHURST | 4071 GEORGE AVE | CA | 959619315 |
| YUBA | 014-010-016-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 014-151-015-000 | OLIVEHURST | 4028 MARY AVE | CA | 959619399 |
| YUBA | 013-640-019-000 | LINCOLN | 1328 SILVER SPUR CIR | CA | 956482074 |
| YUBA | 013-640-005-000 | OLIVEHURST | 4029 DEATON DR | CA | 959619384 |
| YUBA | 013-650-021-000 | SACRAMENTO | 4881 HINCHMAN WAY | CA | 958234758 |
| YUBA | 013-640-006-000 | YUBA CITY | 3398 SAM BRANNAN WAY | CA | 959938891 |
| YUBA | 014-153-018-000 | OLIVEHURST | PO BOX 68 | CA | 959610068 |
| YUBA | 014-492-005-000 | ARBOGA | 1516 MARYCLAIR DR | CA | 959614909 |
| YUBA | 014-495-007-000 | ARBOGA | 1721 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-153-017-000 | OLIVEHURST | PO BOX 68 | CA | 959610068 |
| YUBA | 014-032-009-000 | OLIVEHURST | 1956 GLENMORE DR | CA | 959614626 |
| YUBA | 014-530-011-000 | ARBOGA | 2784 PLUMAS ARBOGA RD | CA | 959619638 |
| YUBA | 014-143-019-000 | OLIVEHURST | 4177 GEORGE AVE | CA | 959619328 |
| YUBA | 013-140-073-000 | OLIVEHURST | PO BOX 444 | CA | 959610444 |
| YUBA | 014-153-011-000 | OLIVEHURST | 4063 GEORGE AVE | CA | 959619315 |
| YUBA | 018-240-039-000 | YUBA CITY | PO BOX 3686 | CA | 959923686 |
| YUBA | 014-104-005-000 | OLIVEHURST | 4342 POWERLINE RD | CA | 959614735 |
| YUBA | 013-290-060-000 | WHEATLAND | 619 CHANA WAY | CA | 956929797 |
| YUBA | 013-290-065-000 | OLIVEHURST | 4632 POWERLINE RD | CA | 959614515 |
| YUBA | 014-106-015-000 | OLIVEHURST | 1978 18TH ST | CA | 959614712 |
| YUBA | 005-190-007-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 014-495-009-000 | ARBOGA | 1709 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-495-008-000 | ARBOGA | 1715 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-495-010-000 | ARBOGA | 1703 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-495-011-000 | ARBOGA | 1697 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-495-012-000 | ARBOGA | 1691 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-495-013-000 | ARBOGA | 1685 BROOKGLEN DR | CA | 959614446 |
| YUBA | 014-031-024-000 | YUBA CITY | 1602 REBECCA DR | CA | 959931656 |
| YUBA | 014-350-064-000 | LA PINE | PO BOX 3475 | OR | 977390085 |
| YUBA | 014-360-011-000 | WHEATLAND | PO BOX 91 | CA | 956920091 |
| YUBA | 013-370-048-000 | PENRYN | PO BOX 407 | CA | 956630407 |
| YUBA | 013-140-058-000 | OLIVEHURST | 4600 OLIVEHURST AVE | CA | 959614220 |
| YUBA | 013-290-067-000 | WHEATLAND | 1443 FORTY MILE RD | CA | 956929724 |
| YUBA | 014-092-016-000 | OLIVEHURST | 1994 BAUGH ST | CA | 959614716 |
| YUBA | 014-092-015-000 | OLIVEHURST | 1986 BAUGH ST | CA | 959614716 |
| YUBA | 014-492-006-000 | MARYSVILLE | 1453 STEPHENSON ST | CA | 959016233 |
| YUBA | 014-160-064-000 | YUBA CITY | 1210 STABLER LN | CA | 959932620 |
| YUBA | 014-492-003-000 | ARBOGA | 3989 BIGLOW DR | CA | 959614444 |
| YUBA | 014-495-005-000 | ARBOGA | 1714 CHATEAU DR | CA | 959614451 |
| YUBA | 014-495-006-000 | ARBOGA | 1720 CHATEAU DR | CA | 959614451 |
| YUBA | 013-140-059-000 | OLIVEHURST | 4816 POWERLINE RD | CA | 959614321 |
| YUBA | 014-400-034-000 | OLIVEHURST | 2007 PLUMAS ARBOGA RD | CA | 959619672 |
| YUBA | 014-400-016-000 | ARBOGA | 2508 OLD MARYSVILLE RD | CA | 959619661 |
| YUBA | 014-270-088-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 014-092-025-000 | OLIVEHURST | 4352 POWERLINE RD | CA | 959614741 |
| YUBA | 005-020-039-000 | STOCKTON | 2039 W LINCOLN RD | CA | 952072464 |
| YUBA | 014-010-025-000 | LEVITTOWN | 311 VETERANS HWY B | PA | 190561422 |
| YUBA | 014-270-098-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 014-270-066-000 | OLIVEHURST | PO BOX 670 | CA | 959610670 |
| YUBA | 014-360-013-000 | WHEATLAND | PO BOX 91 | CA | 956920091 |
| YUBA | 014-530-014-000 | ARBOGA | 3024 PLUMAS ARBOGA RD | CA | 959618814 |
| YUBA | 013-360-061-000 | OLIVEHURST | 4128 HAZEL ST | CA | 959619613 |
| YUBA | 014-152-023-000 | OLIVEHURST | 4024 GEORGE AVE | CA | 959619315 |
| YUBA | 005-200-009-000 | SAN FRANCISCO | PO BOX 193809 | CA | 941193809 |
| YUBA | 014-152-024-000 | OLIVEHURST | 4014 GEORGE AVE | CA | 959619315 |
| YUBA | 014-152-025-000 | DIXON | 935 W F ST | CA | 956202607 |
| YUBA | 014-152-026-000 | MARYSVILLE | 1409 LISA WAY | CA | 959016239 |
| YUBA | 013-650-022-000 | OLIVEHURST | 4024 DONALD DR | CA | 959619381 |
| YUBA | 013-640-007-000 | OLIVEHURST | 1622 CALISTOGA WAY | CA | 959619394 |
| YUBA | 013-640-017-000 | OLIVEHURST | 1564 CALISTOGA WAY | CA | 959619393 |
| YUBA | 013-640-016-000 | OLIVEHURST | 1570 CALISTOGA WAY | CA | 959619393 |
| YUBA | 013-640-013-000 | OLIVEHURST | 1588 CALISTOGA WAY | CA | 959619393 |
| YUBA | 013-640-015-000 | ROSEVILLE | 8625 PALAVER CT | CA | 957478916 |
| YUBA | 013-640-014-000 | PLACERVILLE | 1978 COFFER LN | CA | 956678718 |
| YUBA | 013-340-011-000 | MARYSVILLE | 1919 B ST | CA | 959013731 |
| YUBA | 013-240-010-000 | OLIVEHURST | PO BOX 670 | CA | 959610670 |
| YUBA | 005-360-041-000 | MARYSVILLE | 950 RAMIREZ RD | CA | 959019444 |
| YUBA | 014-131-017-000 | YUBA CITY | 220 WHITE WATER WAY | CA | 959918240 |
| YUBA | 014-131-012-000 | OLIVEHURST | 1985 BEVERLY AVE | CA | 959614760 |
| YUBA | 018-090-002-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 014-270-106-000 | SAN FRANCISCO | 1206 35TH AVE | CA | 941221311 |
| YUBA | 014-270-109-000 | ROSEVILLE | PO BOX 1355 | CA | 956788355 |
| YUBA | 014-400-014-000 | SACRAMENTO | PO BOX 942836 | CA | 942360001 |
| YUBA | 014-400-042-000 | FOLSOM | 314 FITCHBURG SQ | CA | 956306400 |
| YUBA | 013-360-050-000 | OLIVEHURST | 4124 HAZEL ST | CA | 959619613 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 013-360-032-500 | CARMEL | PO BOX 2302 | CA | 939212302 |
| YUBA | 014-092-014-000 | OLIVEHURST | 1978 BAUGH ST | CA | 959614716 |
| YUBA | 014-092-013-000 | OLIVEHURST | 1972 BAUGH ST | CA | 959614716 |
| YUBA | 014-530-009-000 | ARBOGA | 2846 PLUMAS ARBOGA RD | CA | 959618813 |
| YUBA | 014-143-029-000 | OLIVEHURST | 4227 GEORGE AVE | CA | 959619326 |
| YUBA | 014-143-028-000 | WHEATLAND | PO BOX 184 | CA | 956920184 |
| YUBA | 014-091-015-000 | OLIVEHURST | 1901 10TH AVE | CA | 959614501 |
| YUBA | 014-091-014-000 | OLIVEHURST | 1984 16TH ST | CA | 959614650 |
| YUBA | 014-081-016-000 | OLIVEHURST | 4071 GEORGE AVE | CA | 959619315 |
| YUBA | 014-081-015-000 | MARYSVILLE | 8420 MEYER LN | CA | 959017925 |
| YUBA | 013-360-037-000 | OLIVEHURST | 4062 HAZEL ST | CA | 959619613 |
| YUBA | 014-131-011-000 | YUBA CITY | 732 WILKIE WAY | CA | 959913712 |
| YUBA | 014-131-010-000 | OLIVEHURST | 1973 BEVERLY AVE | CA | 959614760 |
| YUBA | 014-350-054-000 | PLUMAS LAKE | 3441 PLUMAS ARBOGA RD | CA | 959619652 |
| YUBA | 018-090-003-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 018-090-001-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 014-132-034-000 | OLIVEHURST | 1991 MCGOWAN PKWY | CA | 959614733 |
| YUBA | 014-153-013-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |
| YUBA | 014-153-007-000 | OLIVEHURST | PO BOX 68 | CA | 959610068 |
| YUBA | 005-360-014-000 | PACIFICA | 450 DONDEE ST 10 | CA | 940443267 |
| YUBA | 014-031-020-000 | OLIVEHURST | 1969 GLENMORE DR | CA | 959614625 |
| YUBA | 014-031-025-000 | OLIVEHURST | 4482 POWERLINE RD | CA | 959614631 |
| YUBA | 014-143-004-000 | MARYSVILLE | PO BOX 123 | CA | 959010002 |
| YUBA | 014-033-021-000 | OLIVEHURST | 4456 POWERLINE RD | CA | 959614632 |
| YUBA | 013-290-066-000 | DOTHAN | 313 WOODLAND DR | AL | 363011347 |
| YUBA | 018-240-003-000 | YUBA CITY | 768 CRESTMONT CT | CA | 959916622 |
| YUBA | 018-240-038-000 | SACRAMENTO | 7653 EASTBREEZE CIR | CA | 958285101 |
| YUBA | 014-132-026-000 | OLIVEHURST | 1991 MCGOWAN PKWY | CA | 959614733 |
| YUBA | 014-106-014-000 | OLIVEHURST | PO BOX 1001 | CA | 959611001 |
| YUBA | 014-850-013-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 018-030-023-000 | MARYSVILLE | 7684 STATE HIGHWAY 70 | CA | 959013121 |
| YUBA | 014-106-017-000 | OLIVEHURST | 1994 18TH ST | CA | 959614712 |
| YUBA | 014-106-016-000 | OLIVEHURST | 1986 18TH ST | CA | 959614712 |
| YUBA | 018-040-003-000 | YUBA CITY | 1232 S GEORGE WASHINGTON BLVD | CA | 959939209 |
| YUBA | 014-104-004-000 | OLIVEHURST | 1976 17TH ST | CA | 959614708 |
| YUBA | 013-360-053-000 | OLIVEHURST | 1216 MURPHY RD | CA | 959618805 |
| YUBA | 014-492-004-000 | ARBOGA | 3983 BIGLOW DR | CA | 959614444 |
| YUBA | 013-360-012-000 | OLIVEHURST | 1251 ELLA AVE | CA | 959618807 |
| YUBA | 014-082-020-000 | YUBA CITY | 608 MARIAH DR | CA | 959917567 |
| YUBA | 014-033-020-000 | OLIVEHURST | 1992 14TH ST | CA | 959614656 |
| YUBA | 014-033-019-000 | OLIVEHURST | 1986 14TH ST | CA | 959614602 |
| YUBA | 014-033-018-000 | MARYSVILLE | PO BOX 202 | CA | 959010005 |
| YUBA | 014-033-017-000 | OLIVEHURST | 1972 14TH ST | CA | 959614602 |
| YUBA | 014-220-036-000 | SEATTLE | 121 VINE ST 1804 | WA | 981211456 |
| YUBA | 014-143-005-000 | MARYSVILLE | PO BOX 123 | CA | 959010002 |
| YUBA | 014-220-037-000 | MILPITAS | 879 COVENTRY CIR | CA | 950353521 |
| YUBA | 021-072-003-000 | MARYSVILLE | 6156 SUNSHINE AVE | CA | 959016555 |
| YUBA | 021-073-010-000 | OROVILLE | 1358 LOWER HONCUT RD | CA | 959669680 |
| YUBA | 021-033-004-000 | MARYSVILLE | 6199 HAPPY WAY | CA | 959016510 |
| YUBA | 021-033-031-000 | MARYSVILLE | 6214 HAPPY WAY | CA | 959016511 |
| YUBA | 021-073-006-000 | MARYSVILLE | 6139 SUNSHINE AVE | CA | 959016556 |
| YUBA | 021-074-006-000 | YUBA CITY | PO BOX 3084 | CA | 959923084 |
| YUBA | 021-074-005-000 | LINCOLN | 4090 NICOLAUS RD | CA | 956489528 |
| YUBA | 021-113-007-000 | MARYSVILLE | 5576 STONEHAVEN DR | CA | 959018323 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 021-074-004-000 | MARYSVILLE | 1982 SUNSET AVE | CA | 959016525 |
| YUBA | 021-074-003-000 | MARYSVILLE | 1978 SUNSET AVE | CA | 959016525 |
| YUBA | 021-073-005-000 | COLUSA | PO BOX 1291 | CA | 959321291 |
| YUBA | 021-072-004-000 | MARYSVILLE | 6150 SUNSHINE AVE | CA | 959016555 |
| YUBA | 021-111-040-000 | SALT LAKE CITY | 50 E NORTH TEMPLE 22ND | UT | 841509001 |
| YUBA | 021-173-016-000 | MARYSVILLE | 1909 FERNWOOD DR | CA | 959017241 |
| YUBA | 021-033-006-000 | MARYSVILLE | 6214 HAPPY WAY | CA | 959016511 |
| YUBA | 021-033-021-000 | MARYSVILLE | 148 TRIPLETT WAY | CA | 959013243 |
| YUBA | 021-073-011-000 | YUBA CITY | 921 ASHLEY WAY | CA | 959916101 |
| YUBA | 021-072-011-000 | MARYSVILLE | 6116 SUNSHINE AVE | CA | 959016527 |
| YUBA | 021-033-007-000 | MARYSVILLE | 6199 HAPPY WAY | CA | 959016510 |
| YUBA | 021-072-026-000 | OLIVEHURST | 4032 HAZEL ST | CA | 959619613 |
| YUBA | 021-072-010-000 | MARYSVILLE | 6124 SUNSHINE AVE | CA | 959016527 |
| YUBA | 021-072-007-000 | MARYSVILLE | 6140 SUNSHINE AVE | CA | 959016554 |
| YUBA | 016-070-002-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 021-073-007-000 | MARYSVILLE | 6139 SUNSHINE AVE | CA | 959016556 |
| YUBA | 021-033-001-000 | MARYSVILLE | 6241 HAPPY WAY | CA | 959016510 |
| YUBA | 021-074-008-000 | MARYSVILLE | 7463 AMES RD | CA | 959013154 |
| YUBA | 021-074-007-000 | EL MACERO | 44514 COUNTRY CLUB DR | CA | 956181043 |
| YUBA | 021-150-061-000 | LIVE OAK | 6394 LARKIN RD | CA | 959539509 |
| YUBA | 021-111-018-000 | OLIVEHURST | PO BOX 1 | CA | 959610001 |
| YUBA | 021-111-039-000 | SALT LAKE CITY | 50 E NORTH TEMPLE | UT | 841509001 |
| YUBA | 021-073-003-000 | WEST PALM BEACH | 1661 WORTHINGTON RD | FL | 334096488 |
| YUBA | 021-033-029-000 | YUBA CITY | 1672 NADEAN DR | CA | 959931626 |
| YUBA | 021-033-030-000 | LAKE ELSINORE | 35232 ANGEL FALLS DR | CA | 925322634 |
| YUBA | 021-033-002-000 | MARYSVILLE | 6235 HAPPY WAY | CA | 959016510 |
| YUBA | 021-073-004-000 | MARYSVILLE | 6157 SUNSHINE AVE | CA | 959016557 |
| YUBA | 021-033-003-000 | BROWNS VALLEY | 5638 STATE HIGHWAY 20 | CA | 959189614 |
| YUBA | 021-033-032-000 | MARYSVILLE | 6214 HAPPY WAY | CA | 959016511 |
| YUBA | 021-033-005-000 | MARYSVILLE | 6215 HAPPY WAY | CA | 959016510 |
| YUBA | 021-033-023-000 | MARYSVILLE | 6214 HAPPY WAY | CA | 959016511 |
| YUBA | 018-030-052-000 | YUBA CITY | 1616 GERMAINE DR | CA | 959938284 |
| YUBA | 018-090-008-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 018-080-018-000 | MARYSVILLE | PO BOX 1202 | CA | 959010034 |
| YUBA | 019-230-105-000 | MARYSVILLE | 915 8TH ST 119 | CA | 959015273 |
| YUBA | 014-632-013-000 | ARBOGA | 1677 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-014-000 | OLIVEHURST | 1669 BROOKGLEN DR | CA | 959614452 |
| YUBA | 019-711-013-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-052-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-711-022-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-711-021-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-711-016-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 021-042-033-000 | MARYSVILLE | 915 8TH ST 125 | CA | 959015273 |
| YUBA | 021-042-032-000 | ROSEVILLE | 4169 SETTLERS RIDGE WAY | CA | 957479546 |
| YUBA | 018-030-045-000 | CITRUS HEIGHTS | 8018 PEPPERMINT CT | CA | 956104620 |
| YUBA | 006-060-020-000 | MARYSVILLE | PO BOX 389 | CA | 959010009 |
| YUBA | 018-080-045-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 021-113-016-000 | RIO OSO | 3120 BEAR RIVER DR | CA | 956749622 |
| YUBA | 018-240-040-000 | YUBA CITY | PO BOX 3686 | CA | 959923686 |
| YUBA | 014-631-006-000 | SAN JOSE | 1491 PORTOBELO DR | CA | 951182330 |
| YUBA | 014-631-010-000 | OLIVEHURST | 3990 SOPHIA ST | CA | 959614905 |
| YUBA | 014-631-007-000 | ARBOGA | 3974 SOPHIA ST | CA | 959614905 |
| YUBA | 014-631-008-000 | ARBOGA | 3980 SOPHIA ST | CA | 959614905 |
| YUBA | 014-631-009-000 | ARBOGA | 3986 SOPHIA ST | CA | 959614905 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 019-602-009-000 | MARYSVILLE | 2014 MILLFRONT CT | CA | 959018297 |
| YUBA | 019-711-020-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-711-017-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-711-019-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 021-113-017-000 | ROSEVILLE | 300 DEREK PL | CA | 956787011 |
| YUBA | 021-113-018-000 | MARYSVILLE | 6027 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-019-000 | MARYSVILLE | 6021 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-020-000 | DECATUR | 3131 N DRUID HILLS RD 7303 | GA | 300332650 |
| YUBA | 021-113-021-000 | MARYSVILLE | 1989 LINDA AVE | CA | 959016540 |
| YUBA | 021-113-022-000 | MARYSVILLE | PO BOX 5135 | CA | 959018511 |
| YUBA | 014-632-006-000 | OLIVEHURST | 1632 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-003-000 | ARBOGA | 1608 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-005-000 | ARBOGA | 1624 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-004-000 | ARBOGA | 1616 CHATEAU DR | CA | 959614448 |
| YUBA | 019-230-095-000 | MARYSVILLE | 2088 N BEALE RD | CA | 959017605 |
| YUBA | 014-631-011-000 | OLIVEHURST | 1585 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-012-000 | ARBOGA | 1593 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-013-000 | OLIVEHURST | 1601 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-014-000 | ARBOGA | 1609 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-015-000 | ROCKLIN | 1823 MERIDIAN WAY | CA | 957654756 |
| YUBA | 014-631-016-000 | ARBOGA | 1625 CHATEAU DR | CA | 959614448 |
| YUBA | 019-553-016-000 | MARYSVILLE | 1970 WHITEWATER DR | CA | 959018305 |
| YUBA | 019-602-015-000 | MARYSVILLE | 2021 MILLFRONT CT | CA | 959018297 |
| YUBA | 019-602-008-000 | MARYSVILLE | 2015 MILLFRONT CT | CA | 959018297 |
| YUBA | 019-602-016-000 | WHEATLAND | 1405 PUMPKIN LN | CA | 956929424 |
| YUBA | 019-602-007-000 | MARYSVILLE | 2016 WATERVILLE DR | CA | 959018295 |
| YUBA | 019-602-021-000 | MARYSVILLE | 5642 STONY CREEK WAY | CA | 959018299 |
| YUBA | 019-602-022-000 | CHINO | PO BOX 1050 | CA | 917081050 |
| YUBA | 019-602-017-000 | MARYSVILLE | 5674 STONY CREEK WAY | CA | 959018300 |
| YUBA | 008-280-027-000 | SAN FRANCISCO | ONE MARKET SPEAR TOWER 400 | CA | 94105 |
| YUBA | 018-030-042-000 | MARYSVILLE | 7596 SAHARA WAY | CA | 959013105 |
| YUBA | 018-030-043-000 | MARYSVILLE | 508 SILVA AVE | CA | 959013135 |
| YUBA | 019-602-024-000 | SUNNYVALE | 369 PEDMORE DR | TX | 751823246 |
| YUBA | 019-602-023-000 | SAN ANGELO | 3434 CEDAR RIDGE LN | TX | 769048136 |
| YUBA | 019-602-020-000 | MARYSVILLE | 5656 STONY CREEK WAY | CA | 959018300 |
| YUBA | 019-602-019-000 | MARYSVILLE | 5662 STONY CREEK WAY | CA | 959018300 |
| YUBA | 019-602-018-000 | MARYSVILLE | 5668 STONY CREEK WAY | CA | 959018300 |
| YUBA | 019-602-006-000 | MARYSVILLE | 2017 WATERVILLE DR | CA | 959018295 |
| YUBA | 019-602-005-000 | MARYSVILLE | 2023 WATERVILLE DR | CA | 959018295 |
| YUBA | 019-602-004-000 | APO | PSC 251 BOX 2035 | AP | 96542 |
| YUBA | 019-602-003-000 | MARYSVILLE | 2035 WATERVILLE DR | CA | 959018295 |
| YUBA | 013-752-031-000 | OLIVEHURST | 4021 NORBY CT | CA | 959617484 |
| YUBA | 014-491-006-000 | ARBOGA | 1719 CHATEAU DR | CA | 959614450 |
| YUBA | 014-492-001-000 | OLIVEHURST | 4001 BIGLOW DR | CA | 959614444 |
| YUBA | 014-491-005-000 | FOSTER CITY | 1451 BEACH PARK BLVD 217 | CA | 944041942 |
| YUBA | 014-491-004-000 | CRESCENT CITY | PO BOX 1131 | CA | 955311131 |
| YUBA | 014-491-003-000 | OLIVEHURST | 2640 HOFFMAN RD | CA | 959619640 |
| YUBA | 021-113-011-000 | MARYSVILLE | 6069 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-012-000 | RIO OSO | 3120 BEAR RIVER DR | CA | 956749622 |
| YUBA | 021-113-013-000 | MARYSVILLE | 1691 CATTAIL DR | CA | 959018214 |
| YUBA | 021-113-014-000 | MARYSVILLE | 6051 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-015-000 | MARYSVILLE | 6045 OLEANDER LN | CA | 959016881 |
| YUBA | 018-230-040-000 | MARYSVILLE | PO BOX 1552 | CA | 959010046 |
| YUBA | 019-554-001-000 | MARYSVILLE | 5749 WILDWOOD DR | CA | 959018302 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
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| YUBA | 019-554-002-000 | MARYSVILLE | 5747 WILDWOOD DR | CA | 959018302 |
| YUBA | 014-491-002-000 | SURPRISE | 16376 W GLACIER CT | AZ | 853872740 |
| YUBA | 014-491-001-000 | ARBOGA | 1689 CHATEAU DR | CA | 959614450 |
| YUBA | 014-152-035-000 | OLIVEHURST | 3980 GEORGE AVE | CA | 959619324 |
| YUBA | 014-850-001-000 | SACRAMENTO | 1300 NATIONAL DR 100 | CA | 958341981 |
| YUBA | 014-492-002-000 | ARBOGA | 3995 BIGLOW DR | CA | 959614444 |
| YUBA | 005-170-034-000 | STOCKTON | 2039 W LINCOLN RD | CA | 952072464 |
| YUBA | 005-200-001-000 | YUBA CITY | 1445 BUTTE HOUSE RD A | CA | 959932749 |
| YUBA | 005-170-008-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 018-090-007-000 | YUBA CITY | 1338 HUNN RD 1 | CA | 959935642 |
| YUBA | 018-030-021-000 | OLIVEHURST | PO BOX 304 | CA | 959610304 |
| YUBA | 018-130-024-000 | CARMICHAEL | 7144 FAIR OAKS BLVD A | CA | 956086434 |
| YUBA | 019-552-015-000 | MARYSVILLE | 1959 WHITEWATER DR | CA | 959018305 |
| YUBA | 019-552-016-000 | MARYSVILLE | 5722 WILDWOOD DR | CA | 959018302 |
| YUBA | 005-360-012-000 | YUBA CITY | 1555 MEADOWLARK WAY | CA | 959931150 |
| YUBA | 006-050-008-000 | MARYSVILLE | PO BOX 389 | CA | 959010009 |
| YUBA | 018-240-034-000 | MARYSVILLE | PO BOX 150 | CA | 959010003 |
| YUBA | 019-621-015-000 | MARYSVILLE | 2071 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 019-621-014-000 | MARYSVILLE | 2073 MOSS GLEN LOOP | CA | 959018293 |
| YUBA | 005-360-013-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 019-530-024-000 | MARYSVILLE | 1964 WATERFRONT CT | CA | 959018282 |
| YUBA | 019-552-017-000 | MARYSVILLE | 1970 MISSION CT | CA | 959018303 |
| YUBA | 019-552-018-000 | MARYSVILLE | 1962 MISSION CT | CA | 959018303 |
| YUBA | 019-712-053-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-554-008-000 | MARYSVILLE | 5711 WILDWOOD DR | CA | 959018302 |
| YUBA | 019-554-007-000 | MARYSVILLE | 5717 WILDWOOD DR | CA | 959018302 |
| YUBA | 019-553-015-000 | LIVE OAK | 2777 STAFFORD RD | CA | 959539505 |
| YUBA | 005-360-039-000 | MARYSVILLE | 950 RAMIREZ RD | CA | 959019444 |
| YUBA | 018-030-013-000 | OMAHA | 1400 DOUGLAS ST 1640 | NE | 681791001 |
| YUBA | 014-632-008-000 | ARBOGA | 1648 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-007-000 | OLIVEHURST | 1640 CHATEAU DR | CA | 959614448 |
| YUBA | 018-220-029-000 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| YUBA | 019-530-022-000 | MARYSVILLE | 1976 WATERFRONT CT | CA | 959018282 |
| YUBA | 019-530-023-000 | MARYSVILLE | 1970 WATERFRONT CT | CA | 959018282 |
| YUBA | 019-530-021-000 | MARYSVILLE | 1982 WATERFRONT CT | CA | 959018282 |
| YUBA | 019-530-020-000 | MARYSVILLE | 1983 WATERFRONT CT | CA | 959018282 |
| YUBA | 019-552-024-000 | MARYSVILLE | 1963 MISSION CT | CA | 959018303 |
| YUBA | 019-552-025-000 | MARYSVILLE | 1969 MISSION CT | CA | 959018303 |
| YUBA | 019-554-003-000 | MARYSVILLE | 5741 WILDWOOD DR | CA | 959018302 |
| YUBA | 019-581-008-000 | MARYSVILLE | 2021 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-009-000 | MARYSVILLE | 2017 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-011-000 | WEST PALM BEACH | 1661 WORTHINGTON RD | FL | 334096488 |
| YUBA | 019-581-010-000 | WHEATLAND | 1405 PUMPKIN LN | CA | 956929424 |
| YUBA | 006-050-010-000 | MONTEREY | PO BOX 1588 | CA | 939421588 |
| YUBA | 018-030-031-000 | MARYSVILLE | 646 SILVA AVE | CA | 959013131 |
| YUBA | 018-030-059-000 | GRIDLEY | 125 NIELSON AVE | CA | 959489612 |
| YUBA | 018-030-060-000 | GRIDLEY | 125 NIELSON AVE | CA | 959489612 |
| YUBA | 014-632-001-000 | ARBOGA | 1592 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-002-000 | ARBOGA | 1600 CHATEAU DR | CA | 959614448 |
| YUBA | 014-632-024-000 | ARBOGA | 1589 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-023-000 | ARBOGA | 1597 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-022-000 | PLUMAS LAKE | 1383 HIGH NOON DR | CA | 959619202 |
| YUBA | 014-632-021-000 | KODIAK | 8009 LAKE LOUISE CT B | AK | 996156777 |
| YUBA | 018-030-022-000 | MARYSVILLE | 7684 STATE HIGHWAY 70 | CA | 959013121 |

| COUNTY | APN | CITY | ADDRESS | STATE | ZIP CODE |
|---|---|---|---|---|---|
| YUBA | 014-632-012-000 | GRANITE BAY | 6806 FALLSBROOK CT 1 | CA | 957466519 |
| YUBA | 014-632-011-000 | WEST PALM BEACH | 1661 WORTHINGTON RD | FL | 334096488 |
| YUBA | 014-632-010-000 | ARBOGA | 1664 CHATEAU DR | CA | 959614448 |
| YUBA | 019-530-019-000 | AMERICAN CANYON | 2 BLACK DUCK CT | CA | 945031380 |
| YUBA | 019-530-018-000 | MARYSVILLE | 1975 FALL RIVER DR | CA | 959018285 |
| YUBA | 019-530-015-000 | CHICKASHA | 3910 STONEYBROOK DR | OK | 730187817 |
| YUBA | 019-530-017-000 | MARYSVILLE | 1971 FALL RIVER DR | CA | 959018285 |
| YUBA | 019-530-016-000 | MARYSVILLE | 1970 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-530-014-000 | MARYSVILLE | 1982 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-554-004-000 | MARYSVILLE | 5735 WILDWOOD DR | CA | 959018302 |
| YUBA | 019-554-005-000 | SAN FRANCISCO | 125 SADOWA ST | CA | 941122941 |
| YUBA | 019-554-006-000 | MARYSVILLE | 5723 WILDWOOD DR | CA | 959018302 |
| YUBA | 019-581-003-000 | MARYSVILLE | 2041 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-001-000 | MARYSVILLE | 2049 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-002-000 | MARYSVILLE | 2045 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 003-090-007-000 | STOCKTON | 2039 W LINCOLN RD | CA | 952072464 |
| YUBA | 021-113-026-000 | MARYSVILLE | 6034 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-029-000 | RIO OSO | 3120 BEAR RIVER DR | CA | 956749622 |
| YUBA | 021-113-028-000 | RIO OSO | 3120 BEAR RIVER DR | CA | 956749622 |
| YUBA | 021-113-027-000 | MARYSVILLE | 6040 OLEANDER LN | CA | 959016881 |
| YUBA | 014-632-020-000 | ARBOGA | 1621 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-631-017-000 | ARBOGA | 1633 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-021-000 | OLIVEHURST | 1665 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-018-000 | ARBOGA | 1641 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-019-000 | PLUMAS LAKE | 1268 BROADWAY ST | CA | 959618810 |
| YUBA | 014-631-020-000 | OLIVEHURST | 1657 CHATEAU DR | CA | 959614448 |
| YUBA | 014-631-023-000 | OLIVEHURST | 5109 WESTERN AVE | CA | 959614032 |
| YUBA | 014-632-009-000 | PLUMAS LAKE | 1656 CHATEAU DR | CA | 959614448 |
| YUBA | 019-530-009-000 | LINDA | 5645 NORTHFORK WAY | CA | 959018275 |
| YUBA | 019-530-010-000 | MARYSVILLE | 1967 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-530-007-000 | MARYSVILLE | PO BOX 1777 | CA | 959010054 |
| YUBA | 019-530-008-000 | LINDA | 5649 NORTHFORK WAY | CA | 959018275 |
| YUBA | 019-530-011-000 | MARYSVILLE | 1973 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-530-012-000 | MARYSVILLE | 1979 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-530-013-000 | MARYSVILLE | 1985 TIDE POOL CT | CA | 959018286 |
| YUBA | 019-581-004-000 | MARYSVILLE | 2037 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-005-000 | MARYSVILLE | 2033 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-006-000 | MARYSVILLE | 2029 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 019-581-007-000 | MARYSVILLE | 2025 STONE WOOD LOOP | CA | 959018308 |
| YUBA | 003-040-013-000 | FRESNO | 737 E WOOD DUCK CIR | CA | 937300806 |
| YUBA | 003-040-019-000 | FRESNO | PO BOX 25006 | CA | 937295006 |
| YUBA | 006-060-003-000 | LIVE OAK | 6394 LARKIN RD | CA | 959539509 |
| YUBA | 005-360-015-000 | SACRAMENTO | PO BOX 388 | CA | 958120388 |
| YUBA | 021-113-025-000 | MARYSVILLE | 6028 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-010-000 | MARYSVILLE | 6075 OLEANDER LN | CA | 959016881 |
| YUBA | 021-113-024-000 | YUBA CITY | 1773 HARDIAL CT | CA | 959939436 |
| YUBA | 021-113-023-000 | MARYSVILLE | 6016 OLEANDER LN | CA | 959016881 |
| YUBA | 018-220-045-000 | YUBA CITY | 3580 LINCOLN RD | CA | 959939758 |
| YUBA | 014-631-022-000 | OLIVEHURST | 1673 CHATEAU DR | CA | 959614448 |
| YUBA | 019-530-003-000 | MARYSVILLE | 5675 RIPTIDE WAY | CA | 959018306 |
| YUBA | 019-530-006-000 | LINDA | 5657 NORTHFORK WAY | CA | 959018275 |
| YUBA | 019-530-005-000 | MARYSVILLE | 1975 PYRAMID CREEK DR | CA | 959018287 |
| YUBA | 019-530-004-000 | MARYSVILLE | 1971 PYRAMID CREEK DR | CA | 959018287 |
| YUBA | 019-530-001-000 | MARYSVILLE | 5685 RIPTIDE WAY | CA | 959018306 |

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| YUBA | 019-530-002-000 | MARYSVILLE | 5679 RIPTIDE WAY | CA | 959018306 |
| YUBA | 006-060-027-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 019-530-062-000 | MARYSVILLE | 1976 WHITEWATER DR | CA | 959018305 |
| YUBA | 019-530-061-000 | MARYSVILLE | 1959 PYRAMID CREEK DR | CA | 959018287 |
| YUBA | 019-530-058-000 | CHESTER | PO BOX 1809 | CA | 960201809 |
| YUBA | 019-530-057-000 | SACRAMENTO | 188 DRAGONFLY CIR | CA | 958342610 |
| YUBA | 006-060-027-000 | MARYSVILLE | PO BOX 2094 | CA | 959010074 |
| YUBA | 018-220-028-000 | YUBA CITY | PO BOX 3730 | CA | 959923730 |
| YUBA | 014-632-017-000 | ARBOGA | 1645 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-019-000 | ARBOGA | 1629 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-018-000 | ARBOGA | 1637 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-016-000 | ARBOGA | 1653 BROOKGLEN DR | CA | 959614452 |
| YUBA | 014-632-015-000 | SANTA CLARA | 173 BEL AYRE DR | CA | 950502002 |
| YUBA | 019-712-045-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-043-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-044-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-047-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-049-000 | DAYTON | 6505 PHEASANT VALLEY RD | OH | 454247119 |
| YUBA | 019-712-048-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |
| YUBA | 019-712-051-000 | MARYSVILLE | 5551 REMINGTON WAY | CA | 959018349 |
| YUBA | 019-712-050-000 | MARYSVILLE | 5557 BARWICK CT | CA | 959018348 |
| YUBA | 019-712-054-000 | YUBA CITY | 3120 LIVE OAK BLVD 104 | CA | 959918835 |

# B EMF DISCUSSION

# 1.0 Electric and Magnetic Fields

The California Public Utilities Commission (CPUC) and the California Department of Health Services (CDHS) have not concluded that exposure to magnetic fields from utility electric facilities is a health hazard. Many reports have concluded that the potential for health effects associated with electric and magnetic field (EMF) exposure is too speculative to allow the evaluation of impacts or the preparation of mitigation measures.

EMF is a term used to describe electric and magnetic fields that are created by electric voltage (electric field) and electric current (magnetic field). Power frequency EMF is a natural consequence of electrical circuits, and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

## 1.1 ELECTRIC FIELDS

Electric fields are present whenever voltage exists on a wire, and are not dependent on current. The magnitude of the electric field is primarily a function of the configuration and operating voltage of the line and decreases with the distance from the source (line). The electric field can be shielded (i.e., the strength can be reduced) by any conducting surface, such as trees, fences, walls, buildings, and most types of structures. The strength of an electric field is measured in volts per meter (V/m) or kilovolts per meter (kV/m).

## 1.2 MAGNETIC FIELDS

Magnetic fields are present whenever current flows in a conductor, and are not dependent on the voltage present on the conductor. The strength of these fields also decreases with distance from the source. However, unlike electric fields, most common materials have little shielding effect on magnetic fields.

The magnetic field strength is a function of both the current on the conductor and the design of the system. Magnetic fields are measured in units called Gauss. However, for the low levels normally encountered near power systems, the field strength is expressed in a much smaller unit, the milligauss (mG), which is one thousandth of a Gauss.

Power frequency EMF is present where electricity is used. This includes not only utility transmission lines, distribution lines, and substations, but also the building wiring in homes, offices, and schools, and in the appliances and machinery used in these locations. Typical magnetic fields from these sources can range from below 1 mG to above 1,000 mG (1 Gauss).

Magnetic field strengths diminish with distance. Fields from compact sources (i.e., those containing coils such as small appliances and transformers) decrease in inverse proportion to the distance from the source cubed. For three-phase power lines with balanced currents, the magnetic field strength drops off inversely proportional to the distance from the line squared. Fields from unbalanced currents, which flow in paths such as neutral or ground conductors, fall off inversely proportional to the distance from the source. Conductor spacing and

configuration also affect the rate at which the magnetic field strength decreases.

The magnetic field levels of PG&E's overhead and underground transmission lines will vary depending upon customer power usage. Magnetic field strengths for typical PG&E transmission line loadings at the edge of rights-of-way are approximately 10 to 90 mG. Under peak load conditions, the magnetic fields at the edge of the right-of-way would not likely exceed 150 mG. There are no long-term, health-based state or federal government EMF exposure standards. State regulations for magnetic fields have been developed in New York and Florida (150 mG and 200 mG at the edge of the right-of-way). However, these are based on limiting exposure from new facilities to levels no greater than existing facilities.

The strongest magnetic fields around the outside of a substation come from the power lines entering and leaving the station. The strength of the magnetic fields from transformers and other equipment decreases quickly with distance. Beyond the substation fence, the magnetic fields produced by the equipment within the station are typically indistinguishable from background levels.

## 1.3 POSSIBLE HEALTH EFFECTS

The possible effects of EMF on human health have come under scientific scrutiny. Concern about EMF originally focused on electric fields; however, much of the recent research has focused on magnetic fields. Uncertainty exists as to what characteristics of magnetic field exposure need to be considered to assess human exposure effects. Among the characteristics considered are field intensity, transients, harmonics, and changes in intensity over time. These characteristics may vary from power lines to appliances to home wiring, and this may create different types of exposures. The exposure most often considered is intensity or magnitude of the field.

There is a consensus among the medical and scientific communities that there is insufficient evidence to conclude that EMF causes adverse health effects. Neither the medical nor scientific communities have been able to provide any foundation upon which regulatory bodies could establish a standard or level of exposure that is known to be either safe or harmful. Laboratory experiments have shown that magnetic fields can cause biologic changes in living cells, but scientists are not sure whether any risk to human health can be associated with them. Some studies have suggested an association between surrogate measures of magnetic fields and certain cancers while others have not.

## 1.4 CALIFORNIA PUBLIC UTILITIES COMMISSION DECISION SUMMARY

### Background

On January 15, 1991, the CPUC initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, called the California EMF Consensus Group, was created by the CPUC to advise it on this issue. It consisted of 17 stakeholders representing citizens groups, consumer groups, environmental groups, state agencies, unions,

and utilities. The Consensus Group's fact-finding process was open to the public, and its report incorporated concerns expressed by the public. Its recommendations were filed with the Commission in March 1992.

In August 2004 the CPUC began a proceeding known as a "rulemaking" (R.04-08-020) to explore whether changes should be made to existing CPUC policies and rules concerning EMF from electric transmission lines and other utility facilities.

Through a series of hearings and conferences, the Commission evaluated the results of its existing EMF mitigation policies and addressed possible improvements in implementation of these policies. The CPUC also explored whether new policies are warranted in light of recent scientific findings on the possible health effects of EMF exposure.

The CPUC completed the EMF rulemaking in January 2006 and presented these conclusions in Decision D.06-01-042:

- The CPUC affirmed its existing policy of requiring no-cost and low-cost mitigation measures to reduce EMF levels from new utility transmission lines and substation projects.

- The CPUC adopted rules and policies to improve utility design guidelines for reducing EMF, and provides for a utility workshop to implement these policies and standardize design guidelines.

- Despite numerous studies, including one ordered by the Commission and conducted by the California Department of Health Services, the CPUC stated "we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences."

- The CPUC said it will "remain vigilant" regarding new scientific studies on EMF, and if these studies indicate negative EMF health impacts, the Commission will reconsider its EMF policies and open a new rulemaking if necessary.

In response to a situation of scientific uncertainty and public concern, the decision specifically requires PG&E to consider "no-cost" and "low-cost" measures, where feasible, to reduce exposure from new or upgraded utility facilities. It directs that no-cost mitigation measures be undertaken, and that low-cost options, when they meet certain guidelines for field reduction and cost, be adopted through the project certification process. PG&E was directed to develop, submit and follow EMF guidelines to implement the CPUC decision. Four percent of total project budgeted cost is the benchmark in implementing EMF mitigation, and mitigation measures should achieve incremental magnetic field reductions of at least 15%.

## 1.5 REVIEWS OF EMF STUDIES

Hundreds of EMF studies have been conducted over the last 20 years in the areas of epidemiology, animal research, cellular studies, and exposure assessment. A number of

nationally recognized multi-discipline panels have performed comprehensive reviews of the body of scientific knowledge on EMF. These panels' ability to bring experts from a variety of disciplines together to review the research gives their reports recognized credibility. It is standard practice in risk assessment and policymaking to rely on the findings and consensus opinions of these distinguished panels. None of these groups have concluded that EMF causes adverse health effects or that the development of standards were appropriate or would have a scientific basis.

Reports by the National Research Council/National Academy of Sciences, American Medical Association, American Cancer Society, National Institute of Environmental Health Sciences, World Health Organization, International Agency for Research on Cancer, and California Department of Health Services conclude that insufficient scientific evidence exists to warrant the adoption of specific health-based EMF mitigation measures. The potential for adverse health effects associated with EMF exposure is too speculative to allow the evaluation of impacts or the preparation of mitigation measures.

## 1.6 NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

In June of 1999, the federal government completed a $60-million EMF research program managed by the National Institute of Environmental Health Sciences (NIEHS) and the Department of Energy (DOE). Known as the EMF RAPID (Research And Public Information Dissemination) Program. In their report to the U.S. Congress, the NIEHS concluded that:

> The NIEHS believes that the probability that ELF-EMF exposure is truly a health hazard is currently small. The weak epidemiological associations and lack of any laboratory support for these associations provide only marginal, scientific support that exposure to this agent is causing any degree of harm.

The NIEHS report also included the following conclusions:

> The National Toxicology Program routinely examines environmental exposures to determine the degree to which they constitute a human cancer risk and produces the 'Report on Carcinogens' listing agents that are 'known human carcinogens' or 'reasonably anticipated to be human carcinogens.' It is our opinion that based on evidence to date, ELF-EMF exposure would not be listed in the 'Report on Carcinogens' as an agent 'reasonably anticipated to be a human carcinogen.' This is based on the limited epidemiological evidence and the findings from the EMF-RAPID Program that did not indicate an effect of ELF-EMF exposure in experimental animals or a mechanistic basis for carcinogenicity.
>
> The NIEHS agrees that the associations reported for childhood leukemia and adult chronic lymphocytic leukemia cannot be dismissed easily as random or negative findings. The lack of positive findings in animals or in mechanistic studies weakens the belief that this association is actually due to ELF-EMF, but cannot completely discount the finding. The NIEHS also agrees with the

conclusion that no other cancers or non-cancer health outcomes provide sufficient evidence of a risk to warrant concern.

Epidemiological studies have serious limitations in their ability to demonstrate a cause and effect relationship whereas laboratory studies, by design, can clearly show that cause and effect are possible. Virtually all of the laboratory evidence in animals and humans and most of the mechanistic work done in cells fail to support a causal relationship between exposure to ELF-EMF at environmental levels and changes in biological function or disease status. The lack of consistent, positive findings in animal or mechanistic studies weakens the belief that this association is actually due to ELF-EMF, but it cannot completely discount the epidemiological findings.

The NIEHS suggests that the level and strength of evidence supporting ELF-EMF exposure as a human health hazard are insufficient to warrant aggressive regulatory actions; thus, we do not recommend actions such as stringent standards on electric appliances and a national program to bury all transmission and distribution lines. Instead, the evidence suggests passive measures such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. NIEHS suggests that the power industry continue its current practice of siting power lines to reduce exposures and continue to explore ways to reduce the creation of magnetic fields around transmission and distribution lines without creating new hazards. We also encourage technologies that lower exposures from neighborhood distribution lines provided that they do not increase other risks, such as those from accidental electrocution or fire.

## U.S. National Research Council/ National Academy of Sciences

In May 1999, the National Research Council/ National Academy of Sciences, an independent scientific agency responsible for advising the federal government on science, technology, and medicine, released its evaluation of the scientific and technical content of research projects conducted under the U.S. EMF RAPID Program, concluding that:

The results of the EMF-RAPID program do not support the contention that the use of electricity poses a major unrecognized public-health danger. Basic research on the effects of power-frequency magnetic fields on cells and animals should continue, but a special research-funding effort is not required. Investigators should compete for funding through traditional research-funding mechanisms. If future research on this subject is funded through such mechanisms, it should be limited to tests of well-defined mechanistic hypotheses or replications of reported positive effects. If carefully performed, such experiments will have value even if their results are negative. Special efforts should be made to communicate the conclusions of this effort to the general public effectively.

The following specific recommendations are made by the committee:

1. The committee recommends that no further special research program focused on possible health effects of power-frequency magnetic fields be funded. Basic research on the effects of power-frequency magnetic fields on cells and animals should continue but investigators should compete for funding through traditional research funding mechanisms.
2. If, however, Congress determines that another time-limited, focused research program on the health effects of power-frequency magnetic fields is warranted, the committee recommends that emphasis be placed on replications of studies that have yielded scientifically promising claims of effects and that have been reported in peer-reviewed journals. Such a program would benefit from the use of a contract-funding mechanism with a requirement for complete reports and/or peer-reviewed publications at program's end.
3. The engineering studies were initiated without the guidance of a clearly established biologic effect. The committee recommends that no further engineering studies be funded unless a biologic effect that can be used to plan the engineering studies has been determined.
4. Much of the information from the EMF-RAPID biology program has not been published in peer-reviewed journals. NIEHS should collect all future peer-reviewed information resulting from the EMF-RAPID biology projects and publish a summary report of such information periodically on the NIEHS Web site.
5. The communication effort initiated by EMF-RAPID is reasonable. The two booklets and the telephone information line are useful, as is the EMF-RAPID Internet site. There are two limitations to the effort. First, it is largely passive, responding to inquiries and providing information, rather than being active. Second, much of the information produced is in a scientific format not readily understandable by the public. The committee recommends that further material produced to disseminate information on power-frequency magnetic fields be written for the general public in a clear fashion. The Web site should be made more user-friendly. The booklet *Questions and Answers about EMF* should be updated periodically and made available to the public.

## World Health Organization

The World Health Organization (WHO) established the International EMF Project in 1996 to investigate potential health risks associated with exposure to electric and magnetic fields (EMF). A WHO Task Group recently concluded a review of the health implications of extremely low frequency (ELF) EMF.

A Task Group of scientific experts was convened in 2005 to assess any risks to health that might exist from exposure to ELF electric and magnetic fields. Previously in 2002, the International Agency for Research on Cancer (IARC) examined the evidence regarding cancer; this Task Group reviewed evidence for a number of health effects, and updated the evidence regarding cancer. The conclusions and recommendations of the Task Group are presented in a WHO report titled: “Extremely Low Frequency Fields Environmental Health

Criteria Monograph No.238" and Factsheet No 322.

> "New human, animal and in vitro studies, published since the 2002 IARC monograph, do not change the overall classification of ELF magnetic fields as a possible human carcinogen."
>
> "A number of other diseases have been investigated for possible association with ELF magnetic field exposure. These include cancers in both children and adults, depression, suicide, reproductive dysfunction, developmental disorders, immunological modifications and neurological disease. The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukaemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease."
>
> "the epidemiological evidence is weakened by methodological problems, such as potential selection bias. In addition, there are no accepted biophysical mechanisms that would suggest that low-level exposures are involved in cancer development. Thus, if there were any effects from exposures to these low-level fields, it would have to be through a biological mechanism that is as yet unknown. Additionally, animal studies have been largely negative. Thus, on balance, the evidence related to childhood leukaemia is not strong enough to be considered causal."
>
> "Policy-makers should establish an ELF EMF protection programme that includes measurements of fields from all sources to ensure that the exposure limits are not exceeded either for the general public or workers."
>
> "Government and industry should monitor science and promote research programmes to further reduce the uncertainty of the scientific evidence on the health effects of ELF field exposure."
>
> "Policy-makers, community planners and manufacturers should implement very low-cost measures when constructing new facilities and designing new equipment including appliances."
>
> "Changes to engineering practice to reduce ELF exposure from equipment or devices should be considered, provided that they yield other additional benefits, such as greater safety, or little or no cost."
>
> "When changes to existing ELF sources are contemplated, ELF field reduction should be considered alongside safety, reliability and economic aspects."

## International Agency for Research on Cancer

In June of 2001, the International Agency for Research on Cancer (IARC), a branch of the

World Health Organization (WHO), evaluated the carcinogenic risk to humans of static and extremely low-frequency EMF. In October of 2001, the WHO published a Fact Sheet that summarized the IARC findings. Below is an excerpt from the fact sheet:

> In June 2001, an expert scientific working group of IARC reviewed studies related to the carcinogenicity of static and ELF electric and magnetic fields. Using the standard IARC classification that weighs human, animal and laboratory evidence, ELF magnetic fields were classified as possibly carcinogenic to humans based on epidemiological studies of childhood leukaemia. Evidence for all other cancers in children and adults, as well as other types of exposures (i.e. static fields and ELF electric fields) was considered not classifiable either due to insufficient or inconsistent scientific information.
>
> "Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals.
>
> This classification is the weakest of three categories ("is carcinogenic to humans", "probably carcinogenic to humans" and "possibly carcinogenic to humans") used by IARC to classify potential carcinogens based on published scientific evidence. Some examples of well-known agents that have been classified by IARC are listed below:

| Classification | Examples of Agents |
|---|---|
| Carcinogenic to humans (usually based on strong evidence of carcinogenicity in humans) | Asbestos<br>Mustard gas<br>Tobacco (smoked and smokeless)<br>Gamma radiation |
| Probably carcinogenic to humans (usually based on strong evidence of carcinogenicity in animals) | Diesel engine exhaust<br>Sun lamps<br>UV radiation<br>Formaldehyde |
| Possibly carcinogenic to humans (usually based on evidence in humans which is considered credible, but for which other explanations could not be ruled out) | Coffee<br>Styrene<br>Gasoline engine exhaust<br>Pickled Vegetables<br>ELF magnetic fields |

DO ELF FIELDS CAUSE CANCER?

ELF fields are known to interact with tissues by inducing electric fields and currents in them. This is the only established mechanism of action of these fields. However, the electric currents induced by ELF fields commonly found in our environment are normally much lower than the strongest electric currents naturally occurring in the body such as those that control the beating of the heart.

Since 1979 when epidemiological studies first raised a concern about exposures to power line frequency magnetic fields and childhood cancer, a large number of studies have been conducted to determine if measured ELF exposure can influence cancer development, especially leukaemia in children.

There is no consistent evidence that exposure to ELF fields experienced in our living environment causes direct damage to biological molecules, including DNA. Since it seems unlikely that ELF fields could initiate cancer, a large number of investigations have been conducted to determine if ELF exposure can influence cancer promotion or co-promotion. Results from animal studies conducted so far suggest that ELF fields do not initiate or promote cancer.

However, two recent pooled analyses of epidemiological studies provide insight into the epidemiological evidence that played a pivotal role in the IARC evaluation. These studies suggest that, in a population exposed to average magnetic fields in excess of 0.3 to 0.4 μT, twice as many children might develop leukaemia compared to a population with lower exposures. In spite of the large number data base, some uncertainty remains as to whether magnetic field exposure or some other factor(s) might have accounted for the increased leukaemia incidence.

Childhood leukaemia is a rare disease with 4 out of 100,000 children between the age of 0 to 14 diagnosed every year. Also average magnetic field exposures above 0.3 or 0.4 μT in residences are rare. It can be estimated from the epidemiological study results that less than 1% of populations using 240 volt power supplies are exposed to these levels, although this may be higher in countries using 120 volt supplies.

The IARC review addresses the issue of whether it is feasible that ELF-EMF pose a cancer risk. The next step in the process is to estimate the likelihood of cancers in the general population from the usual exposures and to evaluate evidence for other (non-cancer) diseases. This part of the risk assessment should be finished by WHO in the next 18 months.

## American Cancer Society

In the journal, *A Cancer Journal for Clinicians*, the American Cancer Society (ACS) reviewed EMF residential and occupational epidemiologic research in an article written by Dr. Clark W. Heath, Jr., ACS's vice president of epidemiology and surveillance research. Dr. Heath reviews 13 residential epidemiologic studies of adult and childhood cancer. Dr. Heath wrote:

> Evidence suggesting that exposure to EMF may or may not promote human carcinogenesis is mostly based on...epidemiologic observations.... While those observations may suggest such a relationship for leukemia and brain cancer in particular, the findings are weak, inconsistent, and inconclusive.... The weakness and inconsistent nature of epidemiologic data, combined with the continued dearth of coherent and reproducible findings from experimental

laboratory research, leave one uncertain and rather doubtful that any real biologic link exists between EMF exposure and carcinogenicity.

### American Medical Association

The AMA adopted recommendations of its Council on Scientific Affairs (CSA) regarding EMF health effects. The report was prepared as a result of a resolution passed by AMA's membership at its 1993 annual meeting. The following recommendations are based on the CSA's review of EMF epidemiologic and laboratory studies to date, as well as on several major literature reviews:

- Although no scientifically documented health risk has been associated with the usually occurring levels of electromagnetic fields, the AMA should continue to monitor developments and issues related to the subject.

- The AMA should encourage research efforts sponsored by agencies such as the National Institutes of Health, the U.S. Department of Energy, and the National Science Foundation. Continuing research should include study of exposures to EMF and its effects, average public exposures, occupational exposures, and the effects of field surges and harmonics.

- The AMA should support the meeting of an authoritative, multidisciplinary committee under the auspices of the National Academy of Sciences or the National Council on Radiation Protection and Measurements to make recommendations about exposure levels of the public and workers to EMF and radiation.

## 1.7 REFERENCES

American Cancer Society. 1996. "Electromagnetic Field Exposure and Cancer: a Review of Epidemiologic Evidence." *A Cancer Journal for Clinicians*, the American Cancer Society. January/February.

American Medical Association. 1994. *Effects of Electric and Magnetic Fields*. Report of the Council on Scientific Affairs to the American Medical Association. December.

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California Public Utilities Commission. 2006. Order Instituting Rulemaking to update the Commission's policies and procedures related to electromagnetic fields emanating from regulated utility facilities. Decision 06-01-042 January 26, 2006

National Institute of Environmental Health Sciences, National Institutes of Health. 1999. *NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. Prepared in Response to the 1992 Energy Policy Act.* June

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World Health Organization. 2007 *Extremely low frequency (ELF) fields. Environmental Health Criteria, Vol. 238.*

World Health Organization. 2007 *Electromagnetic Fields and Public Health: Exposure to extremely low frequency fields.* Fact Sheet Number 322.

Pacific Gas & Electric Company. 2006. EMF Design Guidelines for Electrical Facilities.

# C NATIVE AMERICAN HERITAGE COMMISSION CORRESPONDENCE

# C NATIVE AMERICAN HERITAGE COMMISSION CORRESPONDENCE

The Native American Heritage Commission (NAHC) provided a list of 21 Native American individuals and organizations that may have knowledge of unreported resources or areas of concern. The following individuals and organizations were contacted by certified letter on October 30, 2014:

- April Wallace Moore
- James Edwards, Chairperson, Berry Creek Rancheria of Maidu Indians
- Cultural Resources Representative, Berry Creek Rancheria of Maidu Indians
- Ren Reynolds, Butte Tribal Council
- Pamela Cubbler, Colfax-Todds Valley Consolidated Tribe
- Judith Marks, Colfax-Todds Valley Consolidated Tribe
- Art Angle, Vice Chairperson, Enterprise Rancheria of Maidu Indians
- Glenda Nelson, Chairperson, Enterprise Rancheria of Maidu Indians
- Kyle Self, Chairperson, Greenville Rancheria of Maidu Indians
- Ronald H. Gramps, Chairperson, KonKow Valley Band of Maidu
- Mike DeSpain, Director-OEPP, Mechoopda Indian Tribe of Chico Rancheria
- Dennis E. Ramirez, Chairperson, Mechoopda Indian Tribe of Chico Rancheria
- James Sanders, Tribal Administrator, Moretown Rancheria of Maidu Indians
- Gary Archuleta, Chairperson, Moretown Rancheria of Maidu Indians
- Cathy Bishop, Chairperson, Strawberry Valley Rancheria
- Grayson Coney, Cultural Director, T'si-Akim Maidu
- Eileen Moon, Vice Chairperson, T'si-Akim Maidu
- Don Ryberg, Chairperson, T'si-Akim Maidu
- Jason Camp, THPO, United Auburn Indian Community of the Auburn Rancheria
- Marcos Guerrero, Tribal Preservation Committee, United Auburn Indian Community of the Auburn Rancheria
- Gene Whitehouse, Chairperson, United Auburn Indian Community of the Auburn Rancheria

PG&E followed up with the same tribes and individuals via phone on April 12, 2016, except for the Mechoopda Tribe of Chico Rancheria as they had already responded and expressed no concerns about the project.

Pacific Legacy
Historic Preservation

**Bay Area Division**
**900 Modoc Street**
**Berkeley, CA 94707**

**Phone: 510.524.3991**
**Fax: 510.524.4419**
**www.pacificlegacy.com**

October 3, 2014

Cynthia Gomez
Native American Heritage Commission
1550 Harbor Boulevard
West Sacramento, CA 95691

Re: South of Palermo; Butte, Yuba, and Sutter Counties; CA (PL 2876-13)

Dear Ms. Gomez:

We have been retained by PG&E to conduct an archaeological assessment for the South of Palermo Project, which is located in Butte, Yuba, and Sutter Counties. The reconductoring project will affect approximately 400 towers along 63 miles of transmission line. We would like to request a review of the Sacred Lands Inventory file and a list of interested Native American groups for Butte, Yuba, and Sutter Counties. As per the guidance provided by the NAHC on several recent projects, we have not attached a map of the project area. If a project area map becomes necessary or you need further information, I can be reached at (510) 524-3991 ext 111. Thank you for your kind attention to this matter.

Sincerely,



Starla Lane
Archaeologist
Bay Area Division
900 Modoc St.
Berkeley, CA 94707
Ph. 510-524-3991
lane@pacificlegacy.com

Attachment: Sacred Lands File & Native American Contacts List Request

Pacific Legacy Historic Preservation
Bay Area Division
900 Modoc Street
Berkeley, CA 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

**Sacred Lands File & Native American Contacts List Request**

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Boulevard
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@pacbell.net
*Information Below is Required for a Sacred Lands File Search*

**Project:** South of Palermo (PL 2876-13)

**County:** Butte, Yuba, and Sutter

***BUTTE COUNTY***

**USGS Quadrangle:** Palermo and Honcut 7.5' Quadrangles

**Township:** 19N **Range:** 4E **Section(s):** 32, 33, 34

**Township:** 18N **Range:** 4E **Section(s):** 5, 8, 17, 20, 29, 30, 31

**Township:** 17N **Range:** 4E **Section(s):** 6, 7, 18, 19

**Land Grant:** Honcut

***YUBA COUNTY***

**USGS Quadrangle:** Honcut, Yuba City, Olivehurst and Nicolaus 7.5' Quadrangles

**Township:** 17N **Range:** 4E **Section(s):** 30, 31

**Township:** 16N **Range:** 3E **Section(s):** 13, 24, 25, 36

**Township:** 16N **Range:** 4E **Section(s):** 6, 7, 18, 19, 30, 31

**Township:** 15N **Range:** 3E **Section(s):** 1, 2

**Township:** 15N **Range:** 4E **Section(s):** 6, 7, 8, 17, 21, 28, 33

**Township:** 14N **Range:** 4E **Section(s):** 4, 5, 6, 7, 8, 9, 16, 17, 18, 20, 21, 28, 29, 32, 33

**Township:** 13N **Range:** 4E **Section(s):** 4, 9, 16

**Land Grant:** Honcut and New Helvetia

Pacific Legacy Historic Preservation
Bay Area Division
900 Modoc Street
Berkeley, CA 94707
Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

***SUTTER COUNTY***

**USGS Quadrangle:** Honcut Sutter, Gilsizer Slough, Olivehurst, Nicolaus, and Sheridan 7.5' Quadrangles

**Township:** 15N **Range:** 3E **Section(s):** 3, 4, 5, 8

**Township:** 14N **Range:** 3E **Section(s):** 3, 10

**Township:** 13N **Range:** 4E **Section(s):** 21, 25, 28, 33, 34, 35, 36

**Township:** 13N **Range:** 5E **Section(s):** 30, 31

**Township:** 14N **Range:** 4E **Section(s):** 2, 3, 4

**Company/Firm/Agency:** Pacific Legacy, Inc.

**Contact Person:** Starla Lane

**Street Address:** 900 Modoc St.

**City:** Berkeley, CA **Zip:** 94707

**Phone:** (510) 524-3991 ext. 111

**Fax:** (510) 524-4419

**Email:** lane@pacificlegacy.com

**Project Description:** The proposed reconductoring project will affect approximately 400 towers along 63 miles of transmission line.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

October 14, 2014

Starla Lane
Pacific Legacy
Bay Area Division
900 Modoc Street
Berkeley, CA 94707

Sent by Fax: (510) 524-4419
Number of Pages: 7

Re: South of Palermo Project, Butte, Yuba and Sutter County.

Dear Ms. Lane,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

**Native American Contacts**
**Sutter County**
**October 9, 2014**

Mechoopda Indian Tribe of Chico Rancheria
Dennis E. Ramirez, Chairperson
125 Mission Ranch Blvd — Mechoopda Maidu
Chico , CA 95926 — Concow
dramirez@mechoopda-nsn.
(530) 899-8922 ext 215
(530) 899-8517 - Fax

Mooretown Rancheria of Maidu Indians
James Sanders, Tribal Administrator
#1 Alverda Drive — Maidu
Oroville , CA 95966 — KonKow/Concow
(530) 533-3625
(530) 533-3680 Fax

Mooretown Rancheria of Maidu Indians
Gary Archuleta, Chairperson
#1 Alverda Drive — Maidu
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Enterprise Rancheria of Maidu Indians
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(530) 532-1768 Fax

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
(530) 883-2390 Office
(530) 883-2380 Fax

Enterprise Rancheria of Maidu Indians
Glenda Nelson, Chairperson
2133 Monte Vista Avenue — Maidu
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Strawberry Valley Rancheria
Cathy Bishop, Chairperson
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Marysville , CA 95901 — Miwok
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(916) 501-2482

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
mguerrero@auburnrancheria.com
(530) 883-2364 Office
(530) 883-2320 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo; Butte, Yuba and Sutter Counties, Sutter County.

# Native American Contacts
## Sutter County
## October 9, 2014

Mechoopda Indian Tribe of Chico Rancheria
Mike DeSpain, Director - OEPP
125 Mission Ranch Blvd Mechoopda Maidu
Chico , CA 95926 Concow
mdespain@mechoopda-nsn.gov
(530) 899-8922 ext 219
(530) 899-8517 - Fax

United Auburn Indian Community of the Auburn Rancheria
Jason Camp, THPO
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
jcamp@auburnrancheria.com
(916) 316-3772 Cell
(530) 883-2390
(530) 888-5476 - Fax

This list is current only as of the date of this document.

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This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo; Butte, Yuba and Sutter Counties, Sutter County.

# Native American Contacts
## Yuba County
## October 9, 2014

Butte Tribal Council
Ren Reynolds
1693 Mt. Ida Road Maidu
Oroville , CA 95966

(530) 589-1571

Strawberry Valley Rancheria
Cathy Bishop, Chairperson
P.O. Box 667 Maidu
Marysville , CA 95901 Miwok
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Mooretown Rancheria of Maidu Indians
Gary Archuleta, Chairperson
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T' si-Akim Maidu
Eileen Moon, Vice Chairperson
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Enterprise Rancheria of Maidu Indians
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**This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo Project; Butte, Yuba and Sutter Counties. Yuba County.**

# Native American Contacts
## Yuba County
## October 9, 2014

T' si-Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 1316 Maidu
Colfax , CA 95713
akimmaidu@att.net
(530) 383-7234

United Auburn Indian Community of the Auburn Rancheria
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(916) 316-3772 Cell
(530) 883-2390
(530) 888-5476 - Fax

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
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T' si-Akim Maidu
Don Ryberg, Chairperson
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Grass Valley , CA 95945
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Colfax-Todds Valley Consolidated Tribe
Judith Marks
1068 Silverton Circle Miwok
Lincoln , Ca 95648 Maidu
(916) 580-4078

Colfax-Todds Valley Consolidated Tribe
Pamela Cubbler
P.O. Box 734 Miwok
Foresthill , Ca 95631 Maidu
(530) 320-3943
(530) 367-2093 home

**This list is current only as of the date of this document.**

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**This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo Project: Butte, Yuba and Sutter Counties. Yuba County.**

# Native American Contacts
## Butte County
## October 9, 2014

Berry Creek Rancheria of Maidu Indians
Cultural Resources Rep
5 Tyme Way — Tyme Maidu
Oroville , CA 95966
gmix@berrycreekrancheria.com
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(530) 534-1151 Fax

Mooretown Rancheria of Maidu Indians
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(530) 533-3680 Fax

Mechoopda Indian Tribe of Chico Rancheria
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KonKow Valley Band of Maidu
Ronald H. Gramps, Chairperson
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Oroville , CA 95965 — Maidu
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Greenville Rancheria of Maidu Indians
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(530) 284-6612 Fax

T' si-Akim Maidu
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Grass Valley , CA 95945
(530) 274-7497

Butte Tribal Council
Ren Reynolds
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Oroville , CA 95966

(530) 589-1571

Mooretown Rancheria of Maidu Indians
James Sanders, Tribal Administrator
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(530) 533-3625
(530) 533-3680 Fax

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This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo Project; Butte, Yuba and Sutter Counties. Butte County.

# Native American Contacts
## Butte County
## October 9, 2014

Berry Creek Rancheria of Maidu Indians
James Edwards, Chairperson
5 Tyme Way — Tyme Maidu
Oroville , CA 95966
jedward@berrycreekrancheria.
(530) 534-3859
(530) 534-1151 Fax

Enterprise Rancheria of Maidu Indians
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2133 Monte Vista Avenue — Maidu
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(530) 532-1768 Fax

Enterprise Rancheria of Maidu Indians
Glenda Nelson, Chairperson
2133 Monte Vista Avenue — Maidu
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info@enterpriserancheria.
(530) 532-9214
(530) 532-1768 Fax

T' si-Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 1316 — Maidu
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(530) 383-7234

Mechoopda Indian Tribe of Chico Rancheria
Mike DeSpain, Director - OEPP
125 Mission Ranch Blvd — Mechoopda Maidu
Chico , CA 95926 — Concow
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(530) 899-8517 - Fax

April Wallace Moore
19630 Placer Hills Road — Nisenan - So Maidu
Colfax , CA 95713 — Konkow
(530) 637-4279 — Washoe

T' si-Akim Maidu
Don Ryberg, Chairperson
P.O. Box 1246 — Maidu
Grass Valley , CA 95945
(530) 274-7497

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South of Palermo Project; Butte, Yuba and Sutter Counties. Butte County.

Pacific Legacy Historic Preservation
Bay Area Division
900 Modoc Street
Berkeley, CA 94707

# SAMPLE

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

October 30, 2014

Cultural Resources Representative
Berry Creek Rancheria of Maidu Indians
5 Tyme Way
Oroville, CA 95966

Re: South of Palermo Reconductoring Project, Butte, Yuba, and Sutter Counties, PL#2876-13.

Dear Cultural Resources Representative,

We have been retained by PG&E to conduct an archaeological assessment for a proposed reconductoring project located in Butte, Yuba, and Sutter Counties, California. The proposed reconductoring project will affect approximately 400 towers along 63 miles of existing electrical transmission lines (Palermo, Pease, Bogue, and Rio Oso lines). Project activities include:

- Reconstruction with new hybrid poles/tubular steel poles and reconductor from Palermo Substation to Pease substation;
- Reconstruction with new hybrid poles/tubular steel poles and reconductor from Pease Substation to Rio Oso Substation;
- Reconstruction with new hybrid poles/tubular steel poles and reconductor from Bogue Junction to Bogue Substation;
- Reconstruction with new hybrid poles/tubular steel poles and reconductor from Rio Oso Junction to Rio Oso Substation.

The attached maps provide the project area as indicated on the following 7.5' USGS Quadrangles: Palermo, Honcut, Yuba City, Olivehurst, Nicolaus, and New Helvetia.

The Sacred Lands Inventory on file with the Native American Heritage Commission (NAHC) has been reviewed. This review failed to indicate the presence of cultural resources in the immediate project area. The NAHC provided us with your name as a contact to identify any locations of concern to local Native American Groups within the project area.

In order to verify that all cultural resources of concern to Native American communities are identified and considered in the planning and implementation of the project, we respectfully request any specific information you can provide on the location and nature of resources that may be located within or adjacent to the project area. This information will be used for project planning and will be kept confidential.

You may respond by mail, email, phone, or visit our office in Berkeley to inspect our research files. We anticipate receiving your reply within 14 days. At present, there is no date for start of construction. If you have any questions, please contact me at (510) 524-3991 ext. 111. Thank you for your kind attention to this matter.

Pacific Legacy Historic Preservation
Bay Area Division
900 Modoc Street
Berkeley, CA 94707

**SAMPLE**

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

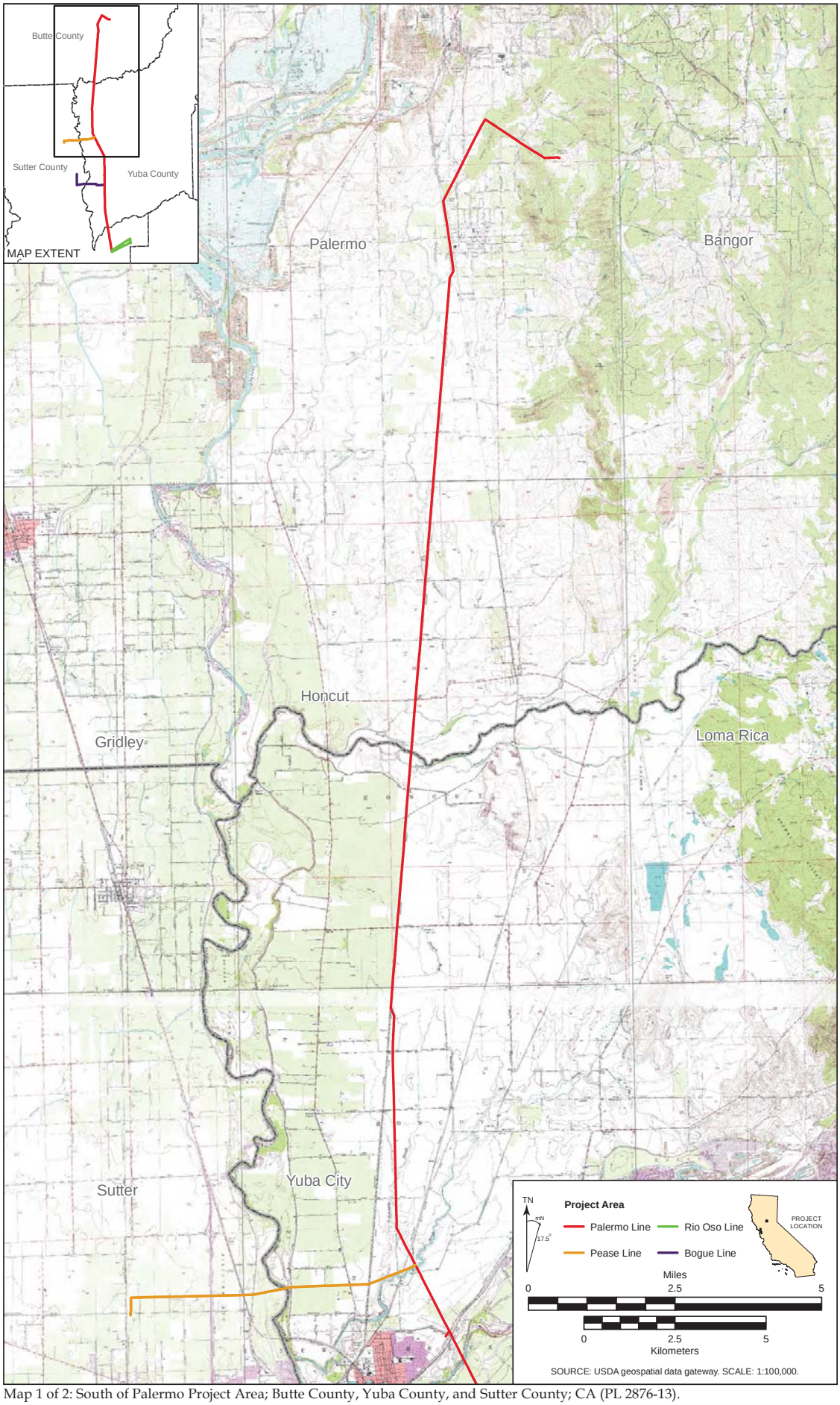
Sincerely,



Starla Lane
Archaeologist
Bay Area Division
900 Modoc St.
Berkeley, CA 94707
Ph. 510-524-3991

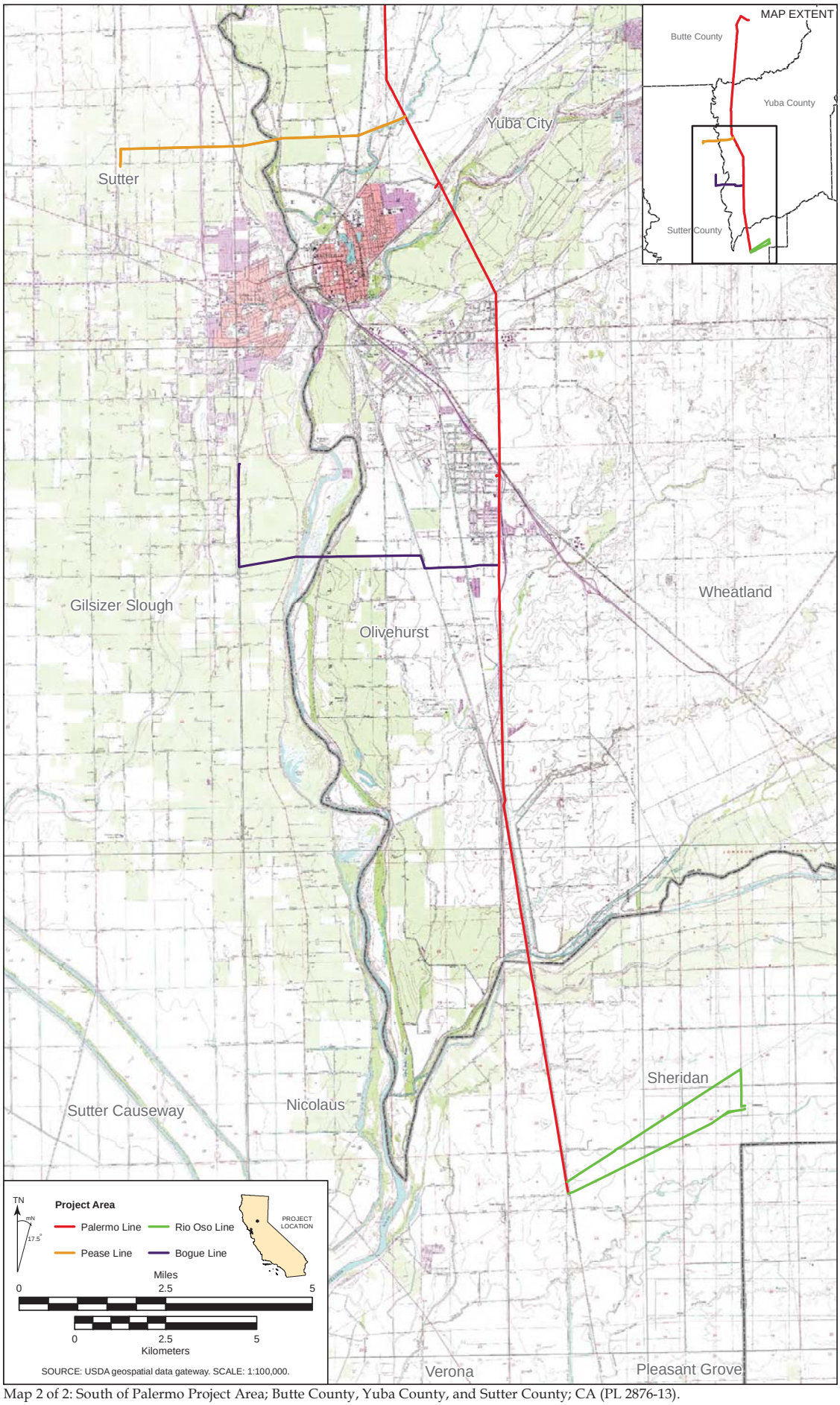
Attachment: Project Area on the Palermo, Honcut, Yuba City, Olivehurst, Nicolaus, and New Helvetia 7.5′ USGS Quadrangles.

# SAMPLE




Map 1 of 2: South of Palermo Project Area; Butte County, Yuba County, and Sutter County; CA (PL 2876-13).

# SAMPLE




Map 2 of 2: South of Palermo Project Area; Butte County, Yuba County, and Sutter County; CA (PL 2876-13).

Pacific Legacy Inc.
Native American Contact Log

Project No. and Name:
PL 2876-13: South of Palermo Project

Pacific Legacy Representative:
Starla Lane

| Organization | Contact | Letter | Phone | E-mail | Comments |
|---|---|---|---|---|---|
| Native American Heritage Commission | Cynthia Gomez | 10/03/14 | - | - | The Sacred Lands Inventory on file with the Native American Heritage Commission (NAHC) has been reviewed. This review failed to indicate the presence of cultural resources in the immediate project area. |
| Mechoopda Indian Tribe of Chico Rancheria | Mike DeSpain | 10/30/14 | 11/07/14 | - | Mr. DeSpain called Pacific Legacy on 11/07/14 and spoke with Starla Lane. He stated that the project was not of concern to the Mechoopda Indian Tribe of Chico Rancheria. He did express concern that we contact the Moretown Rancheria of Maidu Indians, the United Auburn Indian Community of the Aburn Rancheria, and the Colusa Cachil Dehe Band of Wintun Indians. Mr. DeSpain was informed that the Moretown and Auburn Rancherias had been included in Pacific Legacy's outreach efforts; however Colusa had not been included in the list of Native American contacts provided by the NAHC. Mr. DeSpain stated that the Pease Transmision Line protion of the South of Palermo Project would most likely have been in the Colusa Rancheria's tradional territory. |
| Butte Tribal Council | Ren Reynolds | 10/30/14 | - | 11/13/14 | Mr. Reynolds contacted Pacific Legacy, Inc. on 11/12/2014 via e-mail. He requested the presence of a Tribal Site Monitor for the project. Pacific Legacy responded that we would include his request in our report to PG&E. |
| Berry Creek Rancheria of Maidu Indians | Cultural Resources Representative | 10/30/14 | - | - | No response as of 12/30/14. |
| Berry Creek Rancheria of Maidu Indians | James Edwards | 10/30/14 | - | - | No response as of 12/30/14. |
| KonKow Valley Band of Maidu | Ronald H. Gramps | 10/30/14 | - | - | No response as of 12/30/14. |

| | | | | | |
|---|---|---|---|---|---|
| Greenville Rancheria of Maidu Indians | Kyle Self | 10/30/14 | - | - | No response as of 12/30/14. |
| - | April Wallace Moore | 10/30/14 | - | - | No response as of 12/30/14. |
| Mechoopda Indian Tribe of Chico Rancheria | Dennis E. Ramirez | 10/30/14 | - | - | No response as of 12/30/14. |
| Moretown Rancheria of Maidu Indians | James Sanders | 10/30/14 | - | - | No response as of 12/30/14. |
| Moretown Rancheria of Maidu Indians | Gary Archuleta | 10/30/14 | - | - | No response as of 12/30/14. |
| Enterprise Rancheria of Maidu Indians | Art Angle | 10/30/14 | - | - | No response as of 12/30/14. |
| United Auburn Indian Community of the Auburn Rancheria | Gene Whitehouse | 10/30/14 | - | - | No response as of 12/30/14. |
| Enterprise Rancheria of Maidu Indians | Glenda Nelson | 10/30/14 | - | - | No response as of 12/30/14. |
| Strawberry Valley Rancheria | Cathy Bishop | 10/30/14 | - | - | No response as of 12/30/14. |
| United Auburn Indian Community of the Auburn Rancheria | Marcos Guerrero | 10/30/14 | - | - | No response as of 12/30/14. |
| United Auburn Indian Community of the Auburn Rancheria | Jason Camp | 10/30/14 | - | - | No response as of 12/30/14. |
| T'si-Akim Maidu | Grayson Coney | 10/30/14 | - | - | No response as of 12/30/14. |
| Colfax-Todds Valley Consolidated Tribe | Pamela Cubbler | 10/30/14 | - | - | No response as of 12/30/14. |
| Colfax-Todds Valley Consolidated Tribe | Judith Marks | 10/30/14 | - | - | No response as of 12/30/14. |
| T'si-Akim Maidu | Eileen Moon | 10/30/14 | - | - | No response as of 12/30/14. |
| T'si-Akim Maidu | Don Ryberg | 10/30/14 | - | - | No response as of 12/30/14. |

PG&E – South of Palermo Reconductoring Project
Native American Contact Log – PG&E Follow Up
Conducted by Stephanie Cimino, PG&E Sr. Cultural Resource Specialist

| Organization | Contact | Follow Up (Phone Call) | Comments |
|---|---|---|---|
| Mechoopda Indian Tribe of Chico Rancheria | • Mike DeSpain<br>• Dennis E. Ramirez | n/a | No follow up call made because previous reply stated that they had no concerns regarding the project. |
| Butte Tribal Council | • Ren Reynolds | 4/12/16 | Left voice message |
| Berry Creek Rancheria of Maidu Indians | • Cultural Resources Representative<br>• James Edwards | 4/12/16 | Left message with tribal office.<br>S. Cimino spoke with Mr. Edwards on 4/12/16. Mr. Edwards indicated the tribe has no concerns about the project and suggested PG&E contact Moretown Rancheria. |
| KonKow Valley Band of Maidu | • Ronald H. Gramps | 4/12/16 | Wrong number provided on NAHC list |
| Greenville Rancheria of Maidu Indians | • Kyle Self | 4/12/16 | Left voice message |
| -- | • April Wallace Moore | 4/12/16 | Left voice message |
| Moretown Rancheria of Maidu Indians | • James Sanders<br>• Gary Archuleta | 4/12/16 | Left voice message |
| Enterprise Rancheria of Maidu Indians | • Art Angle<br>• Glenda Nelson | 4/12/16 | Redirected by tribal secretary to Tribal Administrator Creig Marcus (creigm@enterpriserancheria.org). Mr. Marcus requested PG&E resend the project information via email for review by the Tribal Historic Preservation Officer, Reno Franklin. PG&E sent the information via email on 4/12/16. Mr. Franklin requested additional information via email on 4/12/16, which was provided by S. Cimino on the same day. |
| Strawberry Valley Rancheria | • Cathy Bishop | 4/12/16 | Phone out of service |
| United Auburn Indian Community of the Auburn Rancheria | • Gene Whitehouse<br>• Marcus Guerrero<br>• Jason Camp | 4/12/16 | Directed by tribal secretary to M. Guerrero as best contact; left voice message |

| | | | |
|---|---|---|---|
| T'si-Akim Maidu | • Grayson Coney<br>• Eileen Moon<br>• Don Ryberg | 4/12/16 | S. Cimino spoke with Mr. Coney on 4/12/16. Mr. Coney stated that the tribe has no specific concerns about the project, and that they would like to be contacted should anything be found during construction. Mr. Coney indicated that follow up calls to Ms. Moon and Mr. Ryberg were not necessary. |
| Colfax-Todds Valley Consolidated Tribe | • Pamela Cubbler<br>• Judith Marks | 4/12/16 | Ms. Marks' mailbox was full, unable to leave a message<br>Left voice message with Ms. Cubbler |
| Cahil Dehe Band of Wintun of the Colusa Indian Community Council | • Ryan Edson | 4/12/16 | Per the recommendation of Mr. DeSpain, PG&E contacted the Cahil Dehe Band of Wintun of the Colusa Indian Community Council on 4/12/16. The tribal secretary directed S. Cimino to call Ryan Edson, tribal administrator (530-682-5407). S. Cimino left a voice message with Mr. Edson on 4/12/16. |

# D NESTING BIRD BUFFERS

# Nesting Birds: Species-Specific Buffers for PG&E Activities

Within PG&E's Avian Program, standard nest buffers were developed for all common and special-status birds present within its Service Territory. There are no standard nest buffers specified in the Migratory Bird Treaty Act (MBTA) or within California Fish and Game Code. Table 1 provides nest buffers based on the best available information, including relevant literature review and avian biology. Disturbance factors including *nest location*, *human activity*, *activity duration*, and *noise level* may influence nesting behavior and reproductive success, and were each considered in establishing standard buffer distances for individual species. Where regulatory agencies have provided information on nest buffer distances for special-status species, those buffer distances are primarily used as *standard buffers* in Table 1. *Standard buffers* are species-specific buffer distances between occupied nest sites and work activities where work will not occur while the nest is active (containing eggs or young). These standard buffers are intended to be applied to nests located in proximity to PG&E activities at a sufficient distance to provide suitable nest protection. For example, a nesting black-crowned night heron has a standard buffer distance of 400 feet (Table 1).

Because it is not always possible to apply the standard buffer, non-standard species-specific buffer distances have also been established. As part of the determination of these non-standard buffers, PG&E activities are assigned disturbance rankings (Low, Medium, or High) for each factor identified above. Evaluation of all disturbance factors combined produces an overall disturbance category by assessing each disturbance factor for one or more PG&E activities. If the overall disturbance category is high, the standard buffer will generally apply. If the evaluation results in low or medium overall disturbance categories, the standard buffer is applied as feasible or reduced buffers may be appropriate. For example, in some circumstances it may be necessary to perform certain types of work within the standard buffer. In these cases, biologists consider all relevant site-specific conditions, including the species' tolerance for disturbance, work activity type, noise levels, and distance to nest to determine if reducing the standard buffer is appropriate. Alternatively, the buffer may be increased beyond the standard buffer for certain exceptions. Helicopters are the main exception that may require increased buffers.

Table 1 lists the standard buffers and non-standard buffer ranges for activities with low-medium and medium-high disturbances. Nest buffers will be implemented and adjusted by the biologist[1].

*The following site-specific conditions are considered in determining if a reduced or increased buffer is appropriate:*

- **Disturbance**. Evaluate nest disturbance, including consideration of activity intensity and duration, construction type, amount of habitat disturbance, level of human disturbance or acclimation, activity length, and the amount of noise generated by the activity.
- **Existing Conditions**. Assess site conditions to determine if there is acclimation to human disturbance.
- **Nest Concealment**. Evaluate surrounding habitat for its ability to provide visual and/or acoustic barriers between the nest and construction.
- **Species Natural History**. Consider individual species' natural history, nest stage (incubation, rearing, fledging), and known tolerances to disturbance.
- **Habituation**. Consider species habituation to new or ongoing activities.
- **Environmental Conditions**. Consider weather and other related factors.
- **Helicopter Use.** Consider helicopter type, flight plans, and duration.

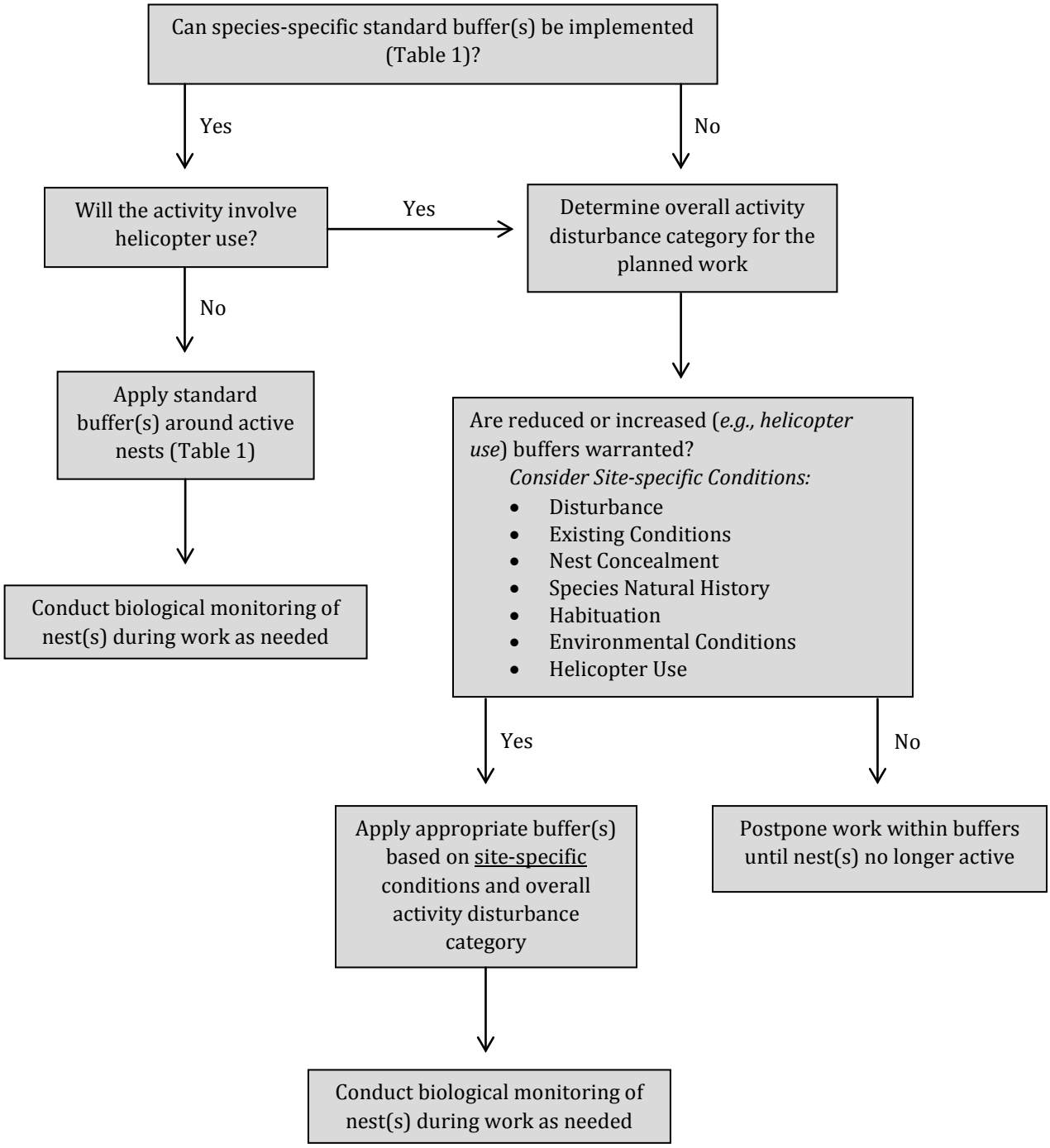
**Nest Buffer Implementation Guidelines**

| Step/Task/Responsible | Outcome and Components |
|---|---|
| 1. Desktop review<br>*Biologist* | • Assess habitat types and potential nesting bird species<br>• Identify potentially appropriate buffers for the species that may nest |
| 2. Preconstruction nesting bird surveys<br>*Biologist* | • Conduct preconstruction surveys within the standard buffers<br>• Document species detections including nests and active nests |
| 3. Assign Buffers<br>*Biologist* | • Assess intensity/duration of activity<br>• Assess acclimation to human disturbance<br>• Assess site-specific conditions<br>• Consider species' natural history, reproductive stage, tolerances to disturbance, and observed behavior<br>• Evaluate and assign standard, reduced, or increased buffers |
| 4. Implement Buffers<br>*Biologist/Biological Monitor* | • Implement buffers when work activities are occurring<br>• Conduct periodic biological monitoring where needed<br>• Adjust buffers as appropriate |

[1] Biologist refers to an individual with a bachelor's degree or above in a field related to biological sciences and demonstrated field expertise in ornithology, in particular, nesting behavior; these qualified biologists may be PG&E employees or contractors.

# Species-Specific Buffers for PG&E Activities

## Buffer Assignment Process – Quick Reference



## Other Biological Considerations in Determining Buffers

- Provisioning frequency of hatchlings or older young
- Egg turning
- Egg incubation (female or male or combination)
- Egg hardiness
- Ambient Temperatures
- Heat tolerance (eggs or nestlings)
- Cold tolerance (eggs or nestlings)
- Unsheltered nest risk
- Premature fledging risk
- Unattended nests and predation risk

**Time on Nest is Important.** An egg initially requires a controlled heat input, but later in incubation the embryo may produce more heat and may need to be cooled rather than heated. Ambient temperatures need to be considered. Unattended unsheltered nests may experience temperature extremes (heat or cold). Egg turning during incubation is also a critical component for successful hatching; absence of turning during incubation will result in reduced and delayed hatching. During the nestling stage for altricial birds (i.e., birds that typically require feeding by adults), adults must provision food to nestlings. Provisioning rate is highly variable between species and is correlated to clutch size and body size, but most birds make frequent trips to attend nestlings. Collectively referred to as brooding, these forms of parental care are essential for reproductive success. Unattended nests also may experience increased rates of predation. Premature fledging is more likely to occur during later nest stages, when young are nearing fledging stage but not yet capable of flight.

## Table 1. Species-specific Nest Buffers for PG&E Work Activities

**Atypically high-intensity activities, such as helicopter use usually require increased buffers beyond the standard buffer*

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Mallard | *Anas platyrhynchos* | Scrapes under overhanging cover or in dense vegetation in uplands near water. | Ground | March through June; single brood. | Clutch incubated for 26–29 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Cinnamon Teal | *Anas cyanoptera* | Scrapes under overhanging cover or in dense vegetation in uplands near water. | Ground | April through August; single brood. | Clutch incubated for 24–25 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Canada Goose | *Branta canadensis* | Scrapes on slightly elevated, firm ground in uplands near water. | Ground | February through June; single brood. | Clutch incubated for 27–28 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Wood Duck | *Aix sponsa* | Cavities in riparian woodlands and other woodland habitats near water. | Up to 60 feet | April through August; single or double brood. | Clutch incubated for 27–35 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Blue-winged Teal | *Anas discors* | Scrapes in dense grass or forbs in wetlands or grasslands near water. | Ground | June through July; single brood | Clutch incubated for 23–24 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Northern Shoveler | *Anas clypeata* | Scrapes in low grasses or forbs in uplands near water. | Ground | March through July; single brood. | Clutch incubated for 25–27 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Gadwall | *Anas strepera* | Scrapes in dense, low emergent vegetation or grasses in uplands near water. | Ground | April through July; single brood. | Clutch incubated for 22–29 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| American Wigeon | *Anas americana* | Scrapes in dense vegetation cover in uplands near water. | Ground | May through July; single brood. | Clutch incubated for 24–25 days by female; young are precocial. | 100 | 30–100 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Redhead | *Aythya americana* | Platform nests over water in dense vegetation; occasionally nests in uplands near water. | Ground | April through June; single brood. | Clutch incubated for 24–26 days by both sexes; young are precocial. | 100 | 30–100 | 15–30 |
| Ring-necked Duck | *Aythya collaris* | Platform nests over water in dense emergent vegetation in wetlands. | Ground | May through August; single brood. | Clutch incubated for approximately 26 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Common Merganser | *Mergus merganser* | Cavities in trees, snags and stumps in riparian woodlands. | Up to 200 feet | March through September; single brood. | Clutch incubated for 28–32 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Ruddy Duck | *Oxyura jamaicensis* | Platform nests constructed on shallow water in dense, tall emergent vegetation. | Ground | April through October; single or double brood. | Clutch incubated for approximately 23 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Pied-billed Grebe | *Podilymbus podiceps* | Platform nests constructed in emergent vegetation bordering open water. | Ground | March through July; double brood. | Clutch incubated for approximately 23 days by both sexes; young are precocial. | 100 | 30–100 | 15–30 |
| Eared Grebe | *Podiceps nigricollis* | Platform nests in water on emergent wetland vegetation. | Ground | April through July; single brood. | Clutch incubated for approximately 21 days by both sexes by both sexes; young are precocial. | 100 | 30–100 | 15–30 |
| Western Grebe | *Aechmophorus occidentalis* | Platform nests in emergent vegetation or open water or, less frequently, on dry land near water. | Ground | May through August; single brood. | Clutch incubated for approximately 23 days by both sexes; young are precocial. | 100 | 30–100 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Clark's Grebe | *Aechmophorus clarkii* | Platform nests constructed in emergent vegetation or open water or, less frequently, on dry land near water. | Ground | May through August; single brood. | Clutch incubated for approximately 23 days by both sexes; young are precocial. | 100 | 30–100 | 15–30 |
| Double-crested Cormorant | *Phalacrocorax auritus* | Platform nests on islands, on the ground or in trees; also in power poles and other artificial structures. Colonial nester. | Ground | March through August; single brood. | Clutch incubated for 25–29 days by both sexes; altricial young fledge at 37–44 days. | 400 | 75–400 | 50–75 |
| Pelagic Cormorant | *Phalacrocorax pelagicus* | Platform nests on steep cliffs along rocky and exposed shorelines along outer coasts, bays, inlets, estuaries, rapids, coves, surge narrows, harbors, lagoons, and coastal log-storage sites. Colonial nester. | Ground | April through August; single or double brood | Clutch incubated for 28–32 days by both sexes; altricial young fledge at approximately 47 days | 400 | 75–400 | 50–75 |
| American Bittern | *Botaurus lentiginosus* | Platform nests in shallow water or on ground near water. | Ground | April through July; single brood. | Clutch incubated for approximately 24 days by female; altricial young fledge at approximately 14 days. | 100 | 50–100 | 25–50 |
| Least Bittern | *Ixobrychus exilis* | Platform nests about a foot above the water in freshwater marshes. | Ground | March through July; double brood. | Clutch incubated for 16–19 days by both sexes; altricial young fledge at 13–15 days. | 100 | 50–100 | 25–50 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Great Blue Heron | *Ardea herodias* | Platform nests in tall trees or other types of vegetation near water. Colonial nester. | Up to 130 feet | January through July; single brood. | Clutch incubated for 25–29 days by both sexes; altricial young fledge at approximately 60 days. | 400 | 75–400 | 50–75 |
| Great Egret | *Ardea alba* | Platform nests in tall trees or other types of vegetation near water. Colonial nester. | 10–80 feet | March through July; single brood. | Clutch incubated for approximately 26 days; semi-altricial young fledge at approximately 35–42 days. | 400 | 75–400 | 50–75 |
| Snowy Egret | *Egretta thula* | Platform nests in tall trees or other types of vegetation near water. Colonial nester. | Up to 30 feet but usually 10–15 feet | March through July; single brood. | Clutch incubated for 20–24 days by both sexes; semi-altricial young fledge at 21–28 days. | 400 | 75–400 | 50–75 |
| Cattle Egret | *Bubulcus ibis* | Platform nests in tall shrubs and trees near water. | Up to 30 feet but usually 5–15 feet | April to July; single brood. | Clutch incubated for 23–25 days; semi-altricial young fledge at about 40 days. | 400 | 75–400 | 50–75 |
| Green Heron | *Butorides striatus* | Platform nests in shrubs, trees, thickets, or other vegetation near water. | 10–30 feet, sometimes higher | March through July; single or double brood. | Clutch incubated for 19–21 days by both sexes; semi-altricial young fledge at 21–23 days. | 100 | 50–100 | 25–50 |
| Black-crowned Night-Heron | *Nycticorax* | Platform nests in shrubs, trees, thickets, or other vegetation near water. Colonial nester. | Up to 150 feet | January through June; double brood. | Clutch incubated for approximately 24 days by female; semi-altricial young fledge at 42–49 days. | 400 | 75–400 | 50–75 |
| White-faced Ibis | *Plegadis chihi* | Platform nests of emergent wetland vegetation in extensive wetlands. Colonial nester. | Ground | May to July; single brood. | Clutch incubated for 20–26 days by both sexes; altricial young fledge at 10–12 days. | 400 | 75–400 | 50–75 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Turkey Vulture | *Cathartes aura* | Caves, rock crevices, possibly abandoned buildings, or other dark, secluded sites. | Up to 20 feet | March through June; single brood. | Clutch incubated for 37–41 days by both sexes; semi-altricial young fledge at approximately 77 days. | 300 | 100–300 | 50–100 |
| California Condor | *Gymnogyps californianus* | Caves on high, remote cliff-faces or in hollow in large redwood snag. | Cliff | Year-round, with egg-laying usually occurring in January or February; single brood. | Clutch incubated for 42–50 days by both sexes; semi-altricial young fledge at 35–49 days. | 3,960 | CR[a] | CR |
| White-tailed Kite | *Elanus caeruleus* | Platform nests in tall trees near grasslands, oak savannah, or other open habitats. | 12–60 feet | February through July; sometimes double brood. | Clutch incubated for 28–30 days by both sexes; semi-altricial young fledge at 34–40 days. | 300 | 200–300 | 100–200 |
| Osprey | *Pandion haliaetus* | Platform nests on treetops, rocky outcrops, or utility poles near water. | Up to 60 feet | Mid-March through August; single brood. | Clutch incubated for 32–33 days by both sexes; semi-altricial young fledge at 51–59 days. | 300 | 100–300 | 50–100 |
| Bald Eagle | *Haliaeetus leucocephalus* | Platform nests in large trees or rocky outcrops close to lakes and large rivers. | 50–180 feet | January to August; single brood. | Clutch incubated for 35–46 days by both sexes; semi-altricial young fledge at 70–77 days. | 2,640 | CR | CR |
| Northern Harrier | *Circus cyaneus* | Platform nests on ground in grasslands and open marshland with vegetative cover. | Ground | March through August; single brood. | Clutch incubated for 29–39 days by both sexes; altricial young fledge at 37 days. | 300 | 200–300 | 100–200 |
| Sharp-shinned Hawk | *Accipiter striatus* | Platform nests in trees in riparian woodland or other forested habitat with thick cover. | 10–60 feet | April through August; single brood. | Clutch incubated for 30–35 days by both sexes; semi-altricial young fledge at approximately 23 days. | 300 | 100–300 | 50–100 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Cooper's Hawk | *Accipiter cooperii* | Platform nests in trees in riparian woodlands or other forested habitat. | 20–60 feet | March through July; single brood. | Clutch incubated for 36 days by female while male provisions her; semi-altricial young fledge at 30–34 days. | 300 | 100–300 | 50–100 |
| Northern Goshawk | *Accipiter gentilis* | Platform nests in top of tall coniferous or deciduous trees in mature forest. | Up to 75 feet | April through August; single brood. | Clutch incubated for 36–41 days by female while male provisions her; semi-altricial young fledge at 45 days old | 1,320 | 200–1,320 | 100–200 |
| Red-shouldered Hawk | *Buteo lineatus* | Platform nests below canopy in a variety of tree species. | 20–60 feet | March through June; single brood. | Clutch incubated for 23–25 days by both sexes; semi-altricial young fledge at 35–42 days. | 300 | 100–300 | 50–100 |
| Swainson's Hawk | *Buteo swainsoni* | Platform nests in isolated trees in grasslands and agricultural areas. | 5–30 feet | April through late June; single brood. | Clutch incubated for approximately 28 days by both sexes; semi-altricial young fledge at 28–35 days. | 1,320–2,640 | CR | CR |
| Red-tailed Hawk | *Buteo jamaicensis* | Platform nests in tall trees and other structures in a variety of open habitats. | 35–90 feet | February through September; single brood. | Clutch incubated for 28–32 days by both sexes; semi-altricial young fledge at approximately 42 days. | 250 | 100–300 | 50–100 |
| Ferruginous Hawk | *Buteo regalis* | Nest in substrates ranging from cliffs, trees, utility structures, and farm buildings to haystacks and relatively level ground. | Up to 70 feet | Early March through May; single brood | Clutch incubated for 32–33 days by both sexes; altricial and nidicolous young fledge at 38–50 days. | 300 | 100–300 | 50–100 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Golden Eagle | *Aquila chrysaetos* | Platform nests on rock ledges of outcrops or cliffs, and occasionally trees, in proximity to grassland, farmland, oak savannah, and other foraging grounds. | 10–100 feet or higher on cliffs | February through July; single brood. | Clutch incubated for 43–45 days by female and occasionally male; semi-altricial young fledge at 63–70 days. | 2,640 | CR | CR |
| American Kestrel | *Falco sparverius* | Cavities in trees or other structures near grasslands, agricultural areas, oak savannah, or other open areas. | 7–80 feet | March through July; may double brood. | Clutch incubated for 29–30 days by female while male provisions her; semi-altricial young fledge at approximately 30 days. | 200 | 50–200 | 25–50 |
| Prairie Falcon | *Falco mexicanus* | Ledges under overhangs on rock outcrops or cliffs near grassland, farmland, oak savannah, or other foraging habitat. | 30–40 feet | March to May; single brood. | Clutch incubated for 29–31 days by female while male provisions her; semi-altricial young fledge at 40 days. | 300 | 100–300 | 50–100 |
| American Peregrine Falcon | *Falco peregrinus* | Cliff ledges, tall buildings, high bridges, and other high locations near open habitats. | High on cliffs or tall structures | March through June; single brood. | Clutch incubated for 28–29 days by both sexes; semi-altricial young fledge at 35–42 days. | 500 | CR | CR |
| Mount Pinos Sooty Grouse | *Dendragapus fuliginosus* | Scrapes near logs, shrubs, or other cover in coniferous forests, shrub-steppe habitat, and subalpine forests. | Ground | April through August; single brood. | Clutch incubated for 26–28 days by female; young are precocial. | 100 | 50–100 | 25–50 |
| Ruffed Grouse | *Bonasa umbellus* | Scrapes near the base of stumps, trees, or logs in forested habitat. | Ground | February through August; single brood. | Clutch incubated for approximately 24 days by female; young are precocial. | 100 | 50–100 | 25–50 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Wild Turkey | *Meleagris gallopavo* | Scrapes in thick, low vegetation in oak woodlands and forest edges and clearings. | Ground | March through August; single brood. | Clutch incubated for approximately 28 days by female; young are precocial. | 100 | 30–100 | 15–30 |
| Gambel's Quail | *Callipepla gambellii* | Scrapes under shrubs in desert habitats. | Ground | April through June; single or (rarely) double brood | Clutch incubated for 21–23 days by female while male guards; young are precocial. | 100 | 50–100 | 25–50 |
| California Quail | *Callipepla californica* | Scrapes under shrubs in riparian woodland, coastal scrub, chaparral, shrub-steppe, and mixed-hardwood forest. | Ground | March through July; single or double brood. | Clutch incubated for 21–23 days by female; young are precocial. | 100 | 50–100 | 25–50 |
| Mountain Quail | *Oreortyx pictus* | Scrapes under shrubs in mountain woodland and scrub habitats, usually near water. | Ground | April through June; single brood. | Clutch incubated for 24–25 days by female; young are precocial. | 100 | 50–100 | 25–50 |
| California Black Rail | *Laterallus jamaicensis coturniculus* | Cup nests on or near ground at upper edges of tidal marshes. | 0–1 foot | March through July; single brood. | Clutch incubated for 17–20 days by both sexes; young are semi-precocial. | 300–600 | CR | CR |
| Clapper Rail (California, Yuma, Light-footed) | *Rallus longirostris obscurus/yumanensis/levipes* | Platform nests in dense tidal marsh vegetation dominated by cordgrass or gumplant. | 0–1 foot | February through August; single or double brood. | Clutch incubated for 23–29 days by both sexes; young are semi-precocial. | 700 | CR | CR |
| Virginia Rail | *Rallus limicola* | Platform nests in dense emergent vegetation in freshwater or estuarine marshes. | 0–1 foot | April through June; single or double brood. | Clutch incubated for 14–16 days by both sexes; young are precocial. | 100 | 50–100 | 25–50 |
| Sora | *Porzana carolina* | Cup nests secured to reeds and rushes in freshwater or estuarine marshes. | 0–1 foot | April through August; single brood. | Clutch incubated for approximately 14 days by both sexes; young are precocial. | 100 | 50–100 | 25–50 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
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| Common Gallinule | *Gallinula galeata* | Platform nests in dense vegetation at edge of marshes and other freshwater habitats. | Ground or water level | April through June; single or double brood. | Clutch incubated for 19–22 days by both sexes; young are precocial. | 100 | 50–100 | 25–50 |
| American Coot | *Fulica americana* | Platform nests in dense vegetation at edge of marshes and other freshwater habitats. | Ground or water level | March through July; single or double brood. | Clutch incubated for 21–24 days by both sexes; young are precocial. | 100 | 30–100 | 15–30 |
| Greater Sandhill Crane | *Grus canadensis tabida* | Platform nests in wetland vegetation on dry ground or shallow water in extensive marsh systems or grasslands. | Ground | April through August; single brood. | Clutch incubated for approximately 30 days by both sexes; young are precocial. | 500 | CR | CR |
| Western Snowy Plover | *Charadrius alexandrinus nivosus* | Scrapes on sand beaches/bars, salt pannes, or dry river beds. | Ground | April through August; double or triple brood. | Clutch incubated for approximately 24 days by both sexes; young are precocial. | 600 (coastal)<br>300 (interior) | CR (coastal)<br>200–300 (interior) | CR (coastal)<br>100–200 (interior) |
| Killdeer | *Charadrius vociferus* | Scrapes in open places usually in areas with short grass, sand, or gravel. | Ground | March through June; sometimes double brood. | Clutch incubated for 24–26 days by both sexes; young are precocial. | 75 | 30–75 | 15–30 |
| Black-necked Stilt | *Himantopus mexicanus* | Scrapes or plant tufts/ tussocks in fresh, brackish, or salt marshes. | Ground | April through June; single brood. | Clutch incubated for 25–26 days by both sexes; young are precocial. | 150 | 50–150 | 25–50 |
| American Avocet | *Recurvirostra americana* | Scrapes on salt pannes, dikes, levees, and bare islands. | Ground | April through June; single brood. | Clutch incubated for 22–24 days by both sexes; young are precocial. | 150 | 50–150 | 25–50 |

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| Spotted Sandpiper | *Actitis macularia* | Scrapes in grasses among rocks, wrack, or driftwood. | Ground | April through August; single brood. | Clutch incubated for approximately 21 days by male; young are precocial. | 75 | 30–75 | 15–30 |
| Wilson's Snipe | *Gallinago gallinago* | Scrapes in dense, medium to tall marshy or wet meadow vegetation. | Ground | April to August; single brood. | Clutch incubated for 17–20 days by female; young are precocial. | 75 | 30–75 | 15–30 |
| Lesser Yellowlegs | *Tringa flavipes* | Scrapes on shallow wetlands, trees or shrubs, and open areas. | Ground | Late April to mid-May; single brood. | Clutch incubated for 22–23 days by both sexes; young are precocial. | 75 | 30–75 | 15–30 |
| Whimbrel | *Numenius phaeopus* | Hummocks or mounds near dwarfed shrub, flat heath tundra, in grass or sedge tussocks, and on gravel. | Ground | Early June to early July; single brood. | Clutch incubated 22–28 days by both sexes; young are precocial. | 75 | 30–75 | 15–30 |
| Black Skimmer | *Rynchops niger* | Saucer-shaped depressions on beaches, bars, dredge deposition, salt marsh. | Ground | May through August; single brood. | Clutch incubated 21–23 days by both sexes; young are semi-precocial. | 300 | 100–300 | 50–100 |
| Long-billed Curlew | *Numenius americanus* | Scrapes in short-grass or mixed-prairie habitat with flat to rolling topography. | Ground | Mid-late March to early July; single brood. | Clutch incubated for 27–29 days by both sexes; young are precocial. | 75 | 30–75 | 15-30 |
| Marbled Godwit | *Limosa fedoa* | Scrapes in short, sparsely to moderately vegetated landscapes that include native grassland and wetland complexes with a variety of wetland classes (ephemeral to semipermanent). | Ground | Mid-May to late June; single brood. | Clutch incubated for 23–26 days by both sexes; young are precocial | 75 | 30–75 | 15–30 |

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| California Gull | *Larus californicus* | Scrapes on islands in alkali or freshwater lakes and ponds or salt ponds. | Ground | April through August; single brood. | Clutch incubated for 23–27 days by both sexes; young are precocial. | 150 | 50–150 | 25–50 |
| Western Gull | *Larus occidentalis* | Ledges on cliffs, bluffs, bridges, buildings, and other areas inaccessible to nest predators. | Ground/cliff | April through August; single brood. | Clutch incubated for 30–32 days by both sexes; young are semi-precocial. | 150 | 50–150 | 25–50 |
| Caspian Tern | *Sterna caspia* | Scrapes on islands, beaches, and levees. | Ground | April through August; single brood. | Clutch incubated for approximately 20 days by both sexes; semi-precocial young fledge at approximately 14 days. | 300 | 100–300 | 50–100 |
| Forster's Tern | *Sterna forsteri* | Scrapes on open levees, islands, and occasionally reed beds. | Ground | April through September; single brood. | Clutch incubated for approximately 23 days by both sexes; semi-altricial young fledge after approximately 7 days. | 300 | 100–300 | 50–100 |
| California Least Tern | *Sterna antillarum* | Scrapes on bare sandy or gravelly substrates in undisturbed areas. | Ground | May through June; single brood. | Clutch incubated for 20–25 days by both sexes; young are semi-precocial. | 600 | CR | CR |
| Black Tern | *Chlidonias niger* | Platform nests constructed of dead plant stems in freshwater wetlands and flooded rice fields. | Ground | May through August; single brood. | Clutch incubated for 20–22 days by both sexes; semi-precocial young fledge at approximately 14 days. | 300 | 100–300 | 50–100 |

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| Marbled Murrelet | *Brachyramphus marmoratus* | Horizontal limbs of large, old-growth conifers. | 20–250 feet | March through September; likely a single brood. | Clutch incubated for approximately 30 days by both sexes; semi-precocial young fledge at approximately 21 days. | 1,320 (high disturbance)[b] | CR | CR |
| Cassin's Auklet | *Ptychoramphus aleuticus* | Excavates burrows in soft soil, sod or natural cavities such as rock crevices and under trees, cacti or logs. Colonial nester. | Ground/cliff | Varies within November through May; single and double brood. | Clutch incubated 37–42 days by both sexes; altricial young confined to nest for 30 days. | 400 | 75–400 | 50–75 |
| Band-tailed Pigeon | *Columba fasciata* | Platform nests in trees or shrubs in oak woodlands, mixed hardwood forests, and mixed coniferous forests, usually in areas with oak trees. | 5–180 feet | March through November; double or triple brood. | Clutch incubated for 18–20 days by both sexes; altricial young fledge at 25–30 days. | 75 | 50–75 | 25–50 |
| Mourning Dove | *Zenaida macroura* | Platform nests in a tree or shrub, but also on buildings or on ground, in a variety of habitats. | 0–25 feet | February through September; several broods. | Clutch incubated for 14–15 days by both sexes; altricial young fledge at 13–15 days. | 50 | 20–50 | 10–20 |
| Western Yellow-billed Cuckoo | *Coccyzus americanus* | Platform nests in bushes or trees in dense, wide riparian woodlands. | 2–20 feet | June through July; single brood. | Clutch incubated for 9–11 days by both sexes; altricial young fledge at 21 days. | 500 | CR | CR |
| Greater Roadrunner | *Geococcyx californianus* | Cup nests in dense, brushy habitats in desert, sagebrush, and chaparral habitats. | 3–15 feet | April through June; double brood. | Clutch incubated for 16–20 days by male; altricial young fledge at 18–30 days. | 100 | 50–100 | 25–50 |

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| Barn Owl | *Tyto alba* | Cavities in trees, buildings, crevices in rocks, outcrops, cliffs and quarries. | 1–400 feet | January through May; often double broods. | Clutch incubated for 32–34 days by female while male provisions her; altricial young fledge at 60 days. | 150 | 100–150 | 50–100 |
| Flammulated Owl | *Otus flammeolus* | Cavities in trees, including aspens, oaks, pines, or other trees in forested areas. | 10–40 feet | May through October; single brood. | Clutch incubated for 21–24 days by female while male provisions her; altricial young fledge at 20–26 days | 200 | 100–200 | 50–100 |
| Western Screech Owl | *Otus kennicottii* | Cavities in trees, particularly cottonwoods, in open woodlands. | 10–30 feet | March through June; single brood. | Clutch incubated for 21–30 days by female while male provisions her; altricial young fledge at approximately 28 days. | 200 | 100–200 | 50–100 |
| Great Gray Owl | *Strix nebulosa* | Near high elevation meadows, on broken top trees or stick nests of other species. | 30-50 feet | Late March through early July; single brood | Average clutch incubated for 29.7 days by female, with male provisioning her; semi-precocial young fledge at 21-28 days but can be dependent on nest site and male parent until fall. | 1,320 | CR | CR |
| Great Horned Owl | *Bubo virginianus* | Cavities or large nest platforms of other species in trees, rock ledges, or caves. | Uses existing platforms at various heights | January through May; single brood. | Clutch incubated for 26–35 days by female while male provisions her; altricial young fledge at 28–35 days. | 300 | 100–300 | 50–100 |

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| Northern Pygmy Owl | *Glaucidium gnoma* | Cavities in trees in oak woodlands and coniferous forests. | 8–20 feet | April through August; number of broods unknown. | Clutch incubated for 25–30 days by female while male provisions her; semi-altricial young fledge at approximately 23 days. | 200 | 50–200 | 25–50 |
| Spotted Owl (Northern/California) | *Strix occidentalis caurina/occidentalis* | Cavities or platforms (natural or old nests of other species) in coniferous or mixed hardwood forests. | 30–165 feet | March through August; single brood. | Clutch incubated for 29–30 days by female while male provisions her; altricial young fledge at 34–36 days. | 1,320 (high disturbance)[b] | CR | CR |
| Burrowing Owl | *Athene cunicularia* | Small mammal burrows in open grasslands or at the edge of agricultural areas. | Ground | February through August; single brood. | Clutch incubated for 27–30 days by female while male provisions her; altricial young fledge at 40–45 days. | 250 | CR | CR |
| Long-eared Owl | *Asio otus* | Platform nests built by other species high in trees in coniferous forests or mixed woodlands. | 10–30 feet | February through May; single brood. | Clutch incubated for 25–30 days by female while male provisions her; altricial young fledge at 23–24 days. | 300 | 100–300 | 50–100 |
| Short-eared Owl | *Asio flammeus* | Scrapes in tall, dense vegetation in grasslands and freshwater or brackish marshes. | Ground | March through July; single or possibly double brood. | Clutch incubated for 21–28 days by female while male provisions her; semi-altricial young leave nest at 31–36 days. | 300 | 100–300 | 50–100 |
| Northern Saw-whet Owl | *Aegolius acadicus* | Cavities in trees in forested areas. | 5–50 feet | March through August; single or double brood. | Clutch incubated for 21–28 days by female; semi-altricial young fledge at approximately 30 days. | 200 | 100–200 | 50–100 |

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| Lesser Nighthawk | *Chordeiles acutipennis* | Scrapes on bare gravelly or sandy ground in desert and sparsely vegetated habitats. | Ground | April through July; single or double brood. | Clutch incubated for 18–19 days by female; semi-precocial young fledge after 3 weeks. | 75 | 30–75 | 20–30 |
| Common Nighthawk | *Chordeiles minor* | Scrapes on bare gravelly or sandy ground in open areas within chaparral, grasslands, and forest openings. | Ground | June through July; double brood. | Clutch incubated for 18–20 days by female; semi-precocial young fledge after about 21 days. | 75 | 30–75 | 20–30 |
| Common Poorwill | *Phalaenoptilus nuttallii* | Scrapes on bare gravelly, sandy, or leaf-litter-covered ground in grasslands and desert habitats. | Ground | March through August; double brood. | Clutch incubated for 20–21 days by both sexes; young are precocial. | 75 | 30–75 | 20–30 |
| Black Swift | *Cypseloides niger* | Sheltered crevices or ledges on cliff faces on coast or under waterfall. | 20–45 feet | May through September; single brood. | Clutch incubated for 21–27 days by both sexes; altricial young fledge at 45–49 days. | 75 | 30–75 | 15–30 |
| Vaux's Swift | *Chaetura vauxi* | Cavities in redwoods, other conifers, and occasionally sycamores, chimneys, and buildings. | Up to 50 feet | May through August; single brood. | Clutch incubated for 18–20 days; altricial young fledge at approximately 28 days. | 75 | 30–75 | 15–30 |
| White-throated Swift | *Aeronautes saxatalis* | Rock cracks and crevices on cliffs and tall bridges. | 10–195 feet | May through July; single brood. | Clutch incubated for 20–27 days; altricial young fledge at 40–46 days. | 75 | 30–75 | 15–30 |
| Black-chinned Hummingbird | *Arcgilochus alexandri* | Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources. | 4–10 feet | April through June; two or three broods. | Clutch incubated for 13–16 days by female; altricial young fledge at approximately 21 days. | 50 | 20–50 | 15–20 |

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| Anna's Hummingbird | *Calypte anna* | Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources. | 1–30 feet | December through June; two or three broods. | Clutch incubated for 16–17 days by female; altricial young fledge at 25–26 days. | 50 | 20–50 | 15–20 |
| Costa's Hummingbird | *Calypte costae* | Cup nests in trees and shrubs in riparian scrub, urban areas, and other habitats with nectar sources. | 4–5 feet | April through July; single or occasionally double brood. | Clutch incubated for 15–18 days by female; altricial young fledge at 20–23 days. | 50 | 20–50 | 15–20 |
| Calliope Hummingbird | *Stellula calliope* | Cup nests in montane or riparian woodlands. | 2–70 feet | May through August; single brood. | Clutch incubated for 15–16 days by female; altricial young fledge at 21–23 days. | 50 | 20–50 | 15–20 |
| Allen's Hummingbird | *Selasphorus sasin* | Cup nests in shrubs, trees, or vines in a variety of forest and woodland types, as well as coastal scrub. | 1–10 feet; occasionally as high as 90 feet | February through August; double brood. | Clutch incubated for 16–22 days by female; altricial young fledge at approximately 22 days. | 50 | 20–50 | 15–20 |
| Belted Kingfisher | *Ceryle alcyon* | Burrow in banks near fresh water. | Ground | April through July; single brood. | Clutch incubated for 23–24 days by both sexes; altricial young fledge at 30–35 days. | 100 | 50–100 | 25–50 |
| Lewis's Woodpecker | *Melanerpes lewis* | Cavities in snags or dead branches in oak woodlands and mixed hardwood forests. | 5–80 feet | May through July; single brood. | Clutch incubated for 13–14 days by both sexes; altricial young fledge at 28–34 days. | 50 | 15–50 | 10–15 |
| Acorn Woodpecker | *Melanerpes formicivorous* | Cavities in trees or snags in open woodlands, partly wooded areas, or utility poles near a source of acorns. | 5–25 feet | April through July; two or three broods. | Clutch incubated for approximately 11 days by both sexes; altricial young fledge at approximately 31 days. | 50 | 15–50 | 10–15 |

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| Red-breasted Sapsucker | *Sphyrapicus ruber* | Cavities in trees or snags in coniferous or mixed forest. | 5–45 feet | May through June; single brood. | Clutch incubated for 12–14 days by both sexes; altricial young fledge at 23–28 days. | 50 | 15–50 | 10–15 |
| Williamson's Sapsucker | *Sphyrapicus thyroideus* | Tree cavities in conifer and mixed conifer-deciduous forests. | 8–52 feet | Late April through late July; single brood. | Clutch incubated 12–14 days by both sexes; altricial young fledge at 31–32 days. | 50 | 15–50 | 10–15 |
| Ladder-backed Woodpecker | *Picoides scalaris* | Cavities in trees and cactus. | 4-20 feet | Unknown in CA; single brood. | Clutch incubated 14 days by both sexes; altricial young with unknown fledging period. | 50 | 15–50 | 10–15 |
| Nuttall's Woodpecker | *Picoides nuttallii* | Cavities in trees or snags in oak woodlands, or less frequently riparian or other woodlands. | 2–60 feet | April through June; single brood. | Clutch incubated for approximately 14 days by both sexes; altricial young fledge at approximately 29 days. | 50 | 15–50 | 10–15 |
| Downy Woodpecker | *Picoides pubescens* | Cavities in trees or snags in riparian or other deciduous woodlands, or less frequently in coniferous forests. | 3–44 feet | April through May; double brood. | Clutch incubated for approximately 12 days by both sexes; altricial young fledge at 20–22 days. | 50 | 15–50 | 10–15 |
| Hairy Woodpecker | *Picoides villosus* | Cavities in snags or dead branches in woodlands and coniferous forests. | 3–102 feet | March through August; single brood. | Clutch incubated for 11–15 days by both sexes; altricial young fledge at 28–30 days. | 50 | 15–50 | 10–15 |
| White-headed Woodpecker | *Picoides albolarvatus* | Cavities in snags or stumps at least 2 feet in diameter in pine forests. | 6–50 feet | April through August; single brood. | Both sexes incubate clutch for 13–15 days; altricial young fledge at approximately 26 days. | 50 | 15–50 | 10–15 |

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| Northern Flicker | *Colaptes auratus* | Cavities in tree trunks or snags in open or sparsely wooded areas; more often in live wood. | 8–45 feet | April through June; single brood. | Clutch incubated for 11–13 days by both sexes; altricial young fledge at 25–28 days. | 50 | 15–50 | 10–15 |
| Pileated Woodpecker | *Dryocopus pileatus* | Cavities in snags or dead branches in mature forests. | 15–70 feet | March to July; single brood | Clutch incubated for approximately 18 days by both sexes; altricial young fledge at 26–28 days. | 50 | 15–50 | 10–15 |
| Olive-sided Flycatcher | *Contopus cooperi* | Cup nest in trees in open conifer forest or mixed woodland. | 5–70 feet | June through July; single brood. | Clutch incubated for 16–17 days by female; altricial young fledge at 15–19 days. | 75 | 30–75 | 15–30 |
| Western Wood-Pewee | *Contopus sordidulus* | Cup nests in trees, mainly coniferous but sometimes deciduous woodlands near watercourses. | 15–30 feet | May through July; single brood. | Clutch incubated for approximately 12 days by female; altricial young fledge at 14–18 days. | 75 | 30–75 | 15–30 |
| Willow Flycatcher (Southwestern, Little, *adastus*) | *Empidonax traillii extimus/brewsteri/adastus* | Cup nests in densely vegetated riparian associations of cottonwoods and willows. | 5–20 feet | May through July; single brood. | Clutch incubated for 12–13 days by female; altricial young fledge at 14 days. | 300 | CR | CR |
| Vermilion Flycatcher | *Pyrocephalus rubinus* | Loosely constructed nest in wooded riparian areas. | 8-55 feet | Mid-March through mid-July; single or double brood. | Clutch incubated for 14-15 days by female; altricial young fledge at 14-16 days. | 75 | 30–75 | 15–30 |
| Hammond's Flycatcher | *Empidonax hammondii* | Cup nests in trees in forests and woodlands. | 6–65 feet | May through July; single brood. | Clutch incubated for 12–15 days by female; altricial young fledge at 17–18 days . | 75 | 30–75 | 15–30 |

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| Dusky Flycatcher | *Empidonax oberholseri* | Cup nests in small trees or shrubs pine forests | 3–20 feet | May through July; single brood. | Clutch incubated for 12–15 days by female; altricial young fledge at approximately 18 days. | 75 | 30–75 | 15–30 |
| Western (Pacific-slope and Cordilleran) Flycatcher | *Empidonax difficilis/occidentalis* | Cup nests in cavities or tree stumps or on ledges or crevices in woodlands and forests often in riparian areas. | 0–30 feet | April through July; sometimes double brood. | Clutch incubated for 14–15 days by female; altricial young fledge at 15–18 days. | 75 | 30–75 | 15–30 |
| Black Phoebe | *Sayornis nigricans* | Cup nests of mud cemented to vertical structures, often under an overhang. | 3–10 feet | March through June; double brood. | Clutch incubated for 15–18 days by female; altricial young fledge at approximately 21 days. | 75 | 30–75 | 15–30 |
| Say's Phoebe | *Sayornis saya* | Cup nests on ledges with overhang or under a bridge; nest not made of mud like black phoebe. | 0–79 feet | March through June; double brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 14–18 days. | 75 | 30–75 | 15–30 |
| Ash-throated Flycatcher | *Myiarchus cinerascens* | Cavities in trees and other structures in open deciduous woodland. | 2–70 feet | May through July; single brood. | Clutch incubated for approximately 15 days by female; altricial young fledge at 16–17 days. | 50 | 15–50 | 10–15 |
| Cassin's Kingbird | *Tyrannus vociferans* | Cup nests in trees in savannahs and other open habitats. | 25–74 feet | April through June; double brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 14 days. | 75 | 30–75 | 15–30 |
| Western Kingbird | *Tyrannus verticalis* | Cup nests in trees and artificial structures (e.g., power poles) in variety of open habitats. | 13–55 feet | April through June; double brood. | Clutch incubated for 12–14 days by both sexes; altricial young fledge at 13–19 days. | 75 | 30–75 | 15–30 |

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| Loggerhead Shrike | *Lanius ludovicianus* | Cup nests in dense shrubs near grasslands and other open habitats. | 3–8 feet | February through June; two or three broods. | Clutch incubated for 14–16 days by female while male provisions her; altricial young fledge at 17–21 days. | 75 | 30–75 | 15–30 |
| Least Bell's Vireo | *Vireo bellii pusillus* | Cup nests in dense shrubs and small trees in dense riparian areas. | 1–3 feet | April through August; double brood. | Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 10–12 days. | 500 | CR | CR |
| Arizona Bell's Vireo | *Vireo bellii arizonae* | Cup nests in dense shrubs and small trees in dense riparian areas. | 1–3 feet | April through August; double brood. | Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 10–12 days. | 500 | CR | CR |
| Cassin's Vireo | *Vireo cassinii* | Cup nests in a trees or shrubs in oak or oak-coniferous or mixed riparian woodland. | 5–35 feet | April through July; single brood. | Clutch incubated for approximately 15 days by both sexes; altricial young fledge at 13 days. | 75 | 30–75 | 15–30 |
| Hutton's Vireo | *Vireo huttoni* | Cup nests on a twig forks in oaks and other trees along streams and canyons. | 3–45 feet | March thorugh June; single or double brood. | Clutch incubated for 14–16 days by both sexes; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| Warbling Vireo | *Vireo gilvus* | Cut nests high in trees in mature oak woodlands and mixed deciduous forests. | 20–60 feet | May through July; double brood. | Clutch incubated for 12–13 days by both sexes; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| Gray Vireo | *Vireo vicinior* | Nests in thorn scrub or pinyon-juniper woodland, low in thorny or twiggy shrub or tree. | 2–8 feet | Mid-April through mid-August | Clutch incubated 13-14 days by both sexes; altricial young fledge at 13-14 days. | 75 | 30–75 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
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| Gray Jay | *Perisoreus canadensis* | Cup nests in shrubs or trees in coniferous forests and sometimes oak woodlands. | 5–30 feet | March through July; single brood. | Clutch is incubated for 16–18 days; altricial young fledge at approximately 15 days. | 75 | 30–75 | 15–30 |
| Steller's Jay | *Cyanocitta stelleri* | Cup nests in trees or shrubs in coniferous or mixed hardwood forests or other woodlands. | 7–16 feet | April through June; likely single brood. | Clutch incubated for approximately 16 days by female while male provisions her; altricial young fledge at 18 days. | 75 | 30–75 | 15–30 |
| Western Scrub-jay | *Aphelocoma californica* | Platform nests in shrubs, trees, bushes or vine tangles in a wide variety of habitats, including oak woodlands, savannah, agricultural, and suburban. | 2–50 feet | March through June; single brood. | Clutch incubated for 15–17 days by female while male provisions her; altricial young fledge at 18 days. | 75 | 30–75 | 15–30 |
| Pinyon Jay | *Gymnorhinus cyanocephalus* | Cup nests in trees in ponderosa-pine forest. | 3–115 feet | Mid-March through late June; single brood. | Clutch incubated 17 days by female, male provisions female; altricial young fledge at 21–22 days. | 75 | 30–75 | 15–30 |
| Clark's Nutcracker | *Nucifraga columbiana* | Cup nests in pines, junipers, and firs in mountain coniferous forests. | 8–45 feet | February through August; single brood. | Clutch incubated for 16–18 days by both sexes; altricial young fledge at approximately 22 days. | 75 | 30–75 | 15–30 |
| Yellow-billed Magpie | *Pica nuttallii* | Platform nests in oak trees and occasionally other trees in savannah. | 30–80 feet | February through July; single brood. | Clutch incubated for 16–18 days by female while male provisions her; altricial young fledge at approximately 30 days. | 75 | 30–75 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| American Crow | *Corvus brachyrhynchos* | Platform nests in variety of large trees, usually near the trunk, and artificial structures in a wide variety of habitats. | 10–70 feet | February through July; single brood. | Clutch incubated for approximately 18 days by female and possibly helpers; altricial young fledge at 35 days. | 50 | 30–50 | 15–30 |
| Common Raven | *Corvus corax* | Platform nests on sheltered rock ledges or in forks of large trees and artificial structures in a wide variety of habitats. | 45–80 feet | February through July; single brood. | Clutch incubated for 20–21 days by female while male provisions her; altricial young fledge at 35–42 days. | 50 | 30–50 | 15–30 |
| Western Bluebird | *Sialia mexicana* | Cavities in woodland clearings, savannahs, and other open habitats. | 4–48 feet | April through June; double brood. | Clutch incubated for 13–14 days by female; altricial young fledge at approximately 20 days. | 50 | 15–50 | 10–15 |
| Townsend's Solitaire | *Myadestes townsendi* | Cup nests on ground usually on cutbanks and other slopes in mountain coniferous forests. | 0–12 feet | April through June; single or double brood. | Clutch incubated for 11–14 days by female; altricial young fledge at 10–14 days. | 75 | 30–75 | 15–30 |
| Swainson's Thrush | *Catharus ustulatus* | Cup nests in dense shrubs, often in riparian woodlands and mixed coniferous forests. | 2–20 feet | April through August; single or (rarely) double brood. | Clutch incubated for 10–13 days by female; altricial young fledge after 10–12 days. | 75 | 30–75 | 15–30 |
| Hermit Thrush | *Catharus guttatus* | Cup nests in dense shrubs variety of forests and woodlands. | 2–10 feet | June through July; single or double brood. | Clutch incubated for 12–13 days by female; altricial young fledge at 12–13 days. | 75 | 30–75 | 15–30 |
| American Robin | *Turdus migratorius* | Cup nests in trees or shrubs, ledges of buildings, or in a tree forks in variety of open habitats. | 3–25 feet | May through July; two or three broods. | Clutch incubated for 11–14 days by female; altricial young fledge at 14–16 days. | 75 | 30–75 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Varied Thrush | *Ixoreus maevius* | Cup nests on horizontal branches of trees in moist coniferous forests. | 5–20 feet | April through August; double brood. | Clutch incubated for approximately 14 days by female; altricial young fledge at 13–15 days. | 75 | 30–75 | 15–30 |
| Horned Lark | *Eremophila alpestris* | Scrapes in a small hollow usually sheltered by plant tufts in grasslands and other open habitats. | Ground | February through August; two or three broods. | Clutch incubated for 10–14 days by female; altricial young fledge at 9–12 days. | 75 | 30–75 | 15–30 |
| Purple Martin | *Progne subis* | Cavities in trees in mountain forests, particularly burned areas with snags. | 10–34 feet | April through August; single brood | Clutch incubated for 15–18 days by the female; altricial young fledge at 24–31 days. | 75 | 30–75 | 15–30 |
| Tree Swallow | *Tachycineta bicolor* | Cavities in open habitats, such as grasslands or wetlands with dead standing trees; usually near water. | 10–16 feet | April through August; double brood. | Clutch is incubated for 13–16 days; altricial young fledge at 16–20 days. | 50 | 30–50 | 15–30 |
| Violet-green Swallow | *Tachycineta thalassina* | Cavities or occasionally on cliffs or banks in deciduous, coniferous, and mixed woodlands. | 9–17 feet | April through August; single brood. | Clutch is incubated for 13–15 days; altricial young fledge at 16–24 days. | 50 | 30–50 | 15–30 |
| Northern Rough-winged Swallow | *Stelgidopteryx serripennis* | Cavities on a steep slope or use crevices and holes in bridges and buildings. | Ground/cliff | April through June; single brood. | Clutch incubated for 15–16 days by female; altricial young fledge at 18–21 days. | 75 | 30–75 | 15–30 |
| Bank Swallow | *Riparia riparia* | Cavities in sandy banks or cliffs along rivers. | Ground/cliff | May through July; single brood. | Clutch incubated for 12–16 days by both sexes; altricial young fledge at 18–24 days. | 100 | CR | CR |

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|---|---|---|---|---|---|---|---|---|
| Barn Swallow | *Hirundo rustica* | Cup nests often on buildings and bridges in open habitats near water. | 6–40 feet | April through July; double brood. | Clutch incubated for 14–16 days by both sexes; altricial young fledge at 17–24 days. | 50 | 30–50 | 15–30 |
| Cliff Swallow | *Petrochelidon pyrrhonota* | Closed mud nests often on cliff faces, buildings, or bridges in open habitats near water. | 5 feet and higher | April through June; double brood. | Clutch incubated for 12–14 days by both sexes; altricial young fledge at approximately 23 days. | 50 | 30–50 | 15–30 |
| Mountain Chickadee | *Poecile gambeli* | Cavities in trees in coniferous mountain forests. | 16–50 feet | April through August; single or double brood. | Clutch is incubated for 14 days; altricial young fledge at 20 days. | 50 | 15–50 | 10–15 |
| Chestnut-backed Chickadee | *Poecile rufescens* | Cavities trees in coniferous forests and deciduous woodlands. | 0–80 feet | March through July; single or (rarely) double brood. | Clutch is incubated for 12–14 days by female; altricial young fledge at 18–21 days. | 50 | 15–50 | 10–15 |
| Oak Titmouse | *Baeolophus inornatus* | Cavities in trees in oak woodlands. | 2–40 feet | March through June; single brood. | Clutch incubated for 14–16 days by female; altricial young fledge at 17 days. | 50 | 15–50 | 10–15 |
| Bushtit | *Psaltriparus minimus* | Pendulous nests in trees and shrubs in a variety of habitats. | 3–98 feet | February through June; double brood. | Clutch incubated for 12–13 days by both sexes; altricial young fledge at 14–15 days. | 50 | 30–50 | 15–30 |
| Red-breasted Nuthatch | *Sitta canadensis* | Cavities in trees in coniferous forests and mixed woodlands. | 5–40 feet | April through July; single or (rarely) double brood. | Clutch incubated for approximately 12 days by female while male provisions her; altricial young fledge at 18–21 days. | 75 | 30–75 | 15–30 |
| White-breasted Nuthatch | *Sitta carolinensis* | Cavities in trees in deciduous woodlands and mixed coniferous forests. | 1–50 feet | March through June; single brood. | Clutch incubated for 12–14 days by female while male provisions her; altricial young fledge at 14–16 days. | 50 | 15–50 | 10–15 |

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|---|---|---|---|---|---|---|---|---|
| Pygmy Nuthatch | *Sitta pygmaea* | Cavities in dead trees or dead portions of trees in long-needled pine forests. | 20–70 feet | May through July; single or double brood. | Clutch incubated for 15–16 days by female while male provisions her; altricial young fledge at 20–21 days. | 75 | 30–75 | 15–30 |
| Brown Creeper | *Certhia americana* | Cup nests concealed behind loose bark, in crevices on a trees in coniferous forests and mixed coniferous forests.. | 5–15 feet | May through July; single brood. | Clutch incubated for 15–18 days by female while male provisions her; altricial young fledge at 21 days. | 75 | 30–75 | 15–30 |
| Rock Wren | *Salpinctes obsoletus* | Cavities on rocky slopes | Ground/cliff | March through June; double or triple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 14–16 days. | 75 | 30–75 | 15–30 |
| Canyon Wren | *Catherpes mexicanus* | Cup nests in rock crevices or ledges in rocy habitats. | Ground/cliff | March through July; double brood. | Clutch incubated for 12–18 days by female; altricial young fledge at approximately 15 days. | 75 | 30–75 | 15–30 |
| Bewick's Wren | *Thryomanes bewickii* | Cavities in trees, brush, or between rocks in open woodlands and shrubby areas. | 0–20 feet | March through July; double or triple brood. | Clutch incubated for approximately 14 days by female while male provisions her; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| House Wren | *Troglodytes aedon* | Cavities in shrubby cover and thickets in open woodlands and hedgerows. | 0–20 feet | April through July; double brood. | Clutch incubated for 13–15 days by female; altricial young fledge at 12–18 days. | 50 | 30–50 | 15–30 |
| Pacific Wren | *Troglodytes pacificus* | Cavities or crevices in logs, stumps, root balls, or trees in variety of forests. | 0–10 feet | March through August; single or double brood. | Clutch is incubated for 14–17 days by female; altricial young fledge at approximately 19 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| Marsh Wren | *Cistothorus palustris* | Domed nests over the water in tall rushes and marsh grasses in wetland habitats. | 1–5 feet | March through July; double or triple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 13–15 days. | 75 | 30–75 | 15–30 |
| American Dipper | *Cinclus mexicanus* | Domed nests in crevices in rocks, logs, bridges, or other protected areas immediately adjacent to water. | 0–30 feet | March through August; single or double brood. | Clutch is incubated for approximately 16 days by female; altricial young fledge at 18–25 days. | 75 | 30–75 | 15–30 |
| Golden-crowned Kinglet | *Regulus satrapa* | Hanging nests woven onto conifer twigs in coniferous forests and mixed woodlands. | 6–50 feet | May through August; single or double brood. | Clutch is incubated for 14–15 days by female; altricial young fledge at 16–19 days. | 75 | 30–75 | 15–30 |
| Ruby-crowned Kinglet | *Regulus calendula* | Cup nests in trees in coniferous woodlands. | 4–100 feet | May through July; single brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 16 days. | 75 | 30–75 | 15–30 |
| Blue-gray Gnatcatcher | *Polioptila caerulea* | Cup nests in trees or shrubs in a variety of habitats from shrublands to mature forests. | 3–80 feet | April through July; double brood. | Clutch incubated for approximately 15 days by both sexes; altricial young fledge at 12–13 days. | 75 | 30–75 | 15–30 |
| Coastal California Gnatcatcher | *Polioptila californica californica* | Cup nests in coastal sage scrub and chaparral. | 2–3 feet | February through August; double brood. | Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 15–16 days. | 500 | CR | CR |
| Wrentit | *Chamaea fasciata* | Cup nests in coastal sage scrub and chaparral. | 1–4 feet | March through July; double brood. | Clutch incubated for 15–16 days by both sexes; altricial young fledge at 15–16 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| Northern Mockingbird | *Mimus polyglottos* | Cup nests in shrubs and trees in variety of habitats, including woodlands and in developed areas. | 3–10 feet | March through July; double or triple brood. | Clutch incubated for 11–14 days by female; altricial young fledge at 12–14 days. | 75 | 30–75 | 15–30 |
| Sage Thrasher | *Oreoscoptes montanus* | Cup nests in low shrubs in sagebrush habitat. | 2–3 feet | April through August; single or double brood. | Clutch is incubated for 13–17 days; altricial young fledge at approximately 11 days. | 75 | 30–75 | 15–30 |
| Le Conte's Thrasher | *Toxostoma lecontei* | Cup nests in cholla or a low tree, in desert areas with shrubby growth. | 2–8 feet | February through June; double or triple brood. | Clutch incubated for 14–20 days by both sexes; altricial young fledge at 14–17 days. | 75 | 30–75 | 15–30 |
| California Thrasher | *Toxostoma redivivum* | Cup nests in low trees or shrubs in sage scrub and chaparral. | 2–4 feet | February through July; double brood. | Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 12–14 days. | 75 | 30–75 | 15–30 |
| Bendire's Thrasher | *Toxostoma bendirei* | Cup nests in shrubs, cacti, or trees. | 2–5 feet | Late February through April; single, double, or triple brood. | Clutch incubated 12–14 days by both parents; altricial young fledge at 12–13 days. | 75 | 30–75 | 15–30 |
| Cedar Waxwing | *Bombycilla cedrorum* | Cup nests in forks of trees in riparian or redwood forests. | 5–50 feet | June through August; single or double brood. | Clutch is incubated for 12–14 days; altricial young fledge at 16–18 days | 75 | 30–75 | 15–30 |
| Phainopepla | *Phainopepla nitens* | Cup nests in trees in desert scrub and coastal chaparral. | 6–11 feet | Late February—desert; April through June—coastal; double brood. | Clutch incubated for 14–15 days by both sexes; altricial young fledge at 18–19 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| Orange-crowned Warbler | *Oreothlypis celata* | Cup nests on the ground or in crevices near ground in a variety of habitats, often where woodland and chaparral habitats meet. | Ground | April through July; single or double brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 12–13 days. | 75 | 30–75 | 15–30 |
| Nashville Warbler | *Oreothlypis ruficapilla* | Cup nests on ground concealed in bushes or small trees in woodland edges or shrubby areas. | Ground | May through July; single brood. | Clutch incubated for 11–12 days by female; altricial young fledge at 11 days. | 75 | 30–75 | 15–30 |
| Yellow Warbler | *Setophaga petechia* | Cup nests in trees or shrubs in shrubby growth in riparian areas. | 2–12 feet | April through July; single brood. | Clutch incubated for 11–12 days by female; altricial young fledge at days. | 75 | 30–75 | 15–30 |
| Yellow-rumped Warbler | *Setophaga coronata* | Cup nests in trees in coniferous woodlands. | 4–50 feet | April through July; single or (rarely) double brood. | Clutch incubated for 12–13 days by female; altricial young fledge at 12–14 days. | 75 | 30–75 | 15–30 |
| Black-throated Gray Warbler | *Setophaga nigrescens* | Cup nests in trees or shrubs in open woodlands in mountainous areas. | 8–35 feet | May through July; single or double brood. | Clutch incubated by female; young are altricial. Length of incubation period and age at fledging undocumented. | 75 | 30–75 | 15–30 |
| Hermit Warbler | *Setophaga occidentalis* | Cup nests high in trees in coniferous forests | 20–40 feet | May through July; single brood. | Clutch incubated for approximately 12 days by both sexes; altricial young fledge at 8–10 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| MacGillivray's Warbler | *Geothlypis tolmiei* | Cup nests in low thick shrub in riparian woodlands and coniferous or mixed forests. | 1–5 feet | May through July; single brood. | Clutch incubated for 11–13 days by female; altricial young fledge at 8–10 days. | 75 | 30–75 | 15–30 |
| Common Yellowthroat | *Geothlypis trichas* | Cup nests in reeds and other wetland vegetation over water or near water. | 1–3 feet | April through July; single brood. | Clutch incubated for approximately 12 days by female; altricial young fledge at 9–10 days. | 75 | 30–75 | 15–30 |
| Wilson's Warbler | *Cardellina pusilla* | Cup nests on ground, hidden by vegetation in shrub habitats in forests and chaparral. | Ground | April through June; single or (rarely) double brood. | Clutch incubated for 11–13 days by female; altricial young fledge at 10–11 days. | 75 | 30–75 | 15–30 |
| Yellow-breasted Chat | *Icteria virens* | Cup nests in a dense shrub or tangle in thick riparian vegetation. | 1–8 feet | April through July; single or (rarely) brood. | Clutch incubated for 11–12 days by female; altricial young fledge at 8–11 days. | 75 | 30–75 | 15–30 |
| Western Tanager | *Piranga ludoviciana* | Cup nests high in trees on outer branches in coniferous and mixed hardwood forests. | 8–75 feet | May through July; single brood. | Clutch incubated for approximately 13 days by female; altricial young fledge at 10–11 days. | 75 | 30–75 | 15–30 |
| Green-tailed Towhee | *Pipilo chlorulus* | Cup nests in or at base of low shrubs in chaparral and disturbed (low growth) forest habitats. | 0–2 feet | April through August; single or double brood. | Clutch incubated for 11–13 days by female; altricial young fledge at 11–14 days. | 75 | 30–75 | 15–30 |
| Spotted Towhee | *Pipilo maculatus* | Cup nests usually on the ground or very low in bushes shrubby habitats. | 2–12 feet | April through July; single or double brood. | Clutch incubated for 12–13 days by female; altricial young fledge at approximately 9 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| California Towhee | *Melozone crissalis* | Cup nests in shrubs or small trees in brushy habitats. | 4–12 feet | March through July; double or triple brood. | Clutch incubated for approximately 14 days by female; altricial young fledge at approximately 10 days. | 75 | 30–75 | 15–30 |
| Rufous-crowned Sparrow | *Aimophila ruficeps* | Cup nests at the base of a grass clumps, in dry rocky areas with sparse undergrowth. | 0–2 feet | April through June; single or double brood. | Clutch incubated for 11–13 days by female; altricial young fledge at 9 days. | 75 | 30–75 | 15–30 |
| Chipping Sparrow | *Spizella passerina* | Cup nests in trees or shrubs in open woodlands. | 3–20 feet | April through July; double brood. | Clutch incubated for 11–14 days by female; altricial young fledge at 9–12 days. | 75 | 30–75 | 15–30 |
| Black-chinned Sparrow | *Spizella atrogularis* | Cup nests in shrubs in chaparral habitat. | 1–3 feet | April through August; single brood. | Clutch incubated for 12–13 days by female; altricial young fledge at approximately 10 days. | 75 | 30–75 | 15–30 |
| Lark Sparrow | *Chondestes grammacus* | Cup nests usually in scrapes on ground in open grasslands, or cup nests in herbaceous or woody shrubs. | 0–9 feet | April through July; double brood. | Clutch incubated for 11–13 days by female; altricial young fledge at 9–10 days. | 75 | 30–75 | 15–30 |
| Black-throated Sparrow | *Amphispiza bilineata* | Cup nests in thorny shrubs or cactus in chaparral or desert habitats. | 1 foot | April through June; single or double brood. | Clutch incubated for 12–13 days by female; altricial young fledge at approximately 9.5 days. | 75 | 30–75 | 15–30 |
| Sage Sparrow | *Artemisiospiza belli* | Cup nests in thick bushes in chaparral and desert habitats. | 1 foot | March through June; double brood. | Clutch incubated for 10–16 days by female; altricial young fledge at 9–10 days. | 75 | 30–75 | 15–30 |

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|---|---|---|---|---|---|---|---|---|
| Bryant's Savannah Sparrow | *Passerculus sandwichensis alaudinus* | Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation. | Ground | April through July; single or double brood. | Clutch incubated for 10–13 days; altricial young fledge at 7–14 days. | 75 | 30–75 | 15–30 |
| Belding's Savannah Sparrow | *Passerculus sandwichensis beldingi* | Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation. | Ground | April through July; single or double brood. | Clutch incubated for 10–13 days; altricial young fledge at 7–14 days. | 75 | CR | CR |
| Grasshopper Sparrow | *Ammodramus savannarum* | Ground nest at the base of bunchgrass or other vegetation in grasslands. | Ground | April through July; double or triple brood. | Clutch incubated for 11–12 days by female; altricial young fledge after 9 days. | 75 | 30–75 | 15–30 |
| Song Sparrow | *Melospiza melodia* | Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats. | 1–3 feet | March through July; double, triple, or quadruple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 10 days. | 75 | 30–75 | 15–30 |
| Suisun Song Sparrow | *Melospiza melodia maxillaris* | Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats. | 1–3 feet | March through July; double, triple, or quadruple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 10 days. | 75 | 30–75 | 15–30 |
| Alameda Song Sparrow | *Melospiza melodia pusillula* | Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats. | 1–3 feet | March through July; double, triple, or quadruple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 10 days. | 75 | 30–75 | 15–30 |

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| San Pablo Song Sparrow | *Melospiza melodia samuelis* | Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats. | 1–3 feet | March through July; double, triple, or quadruple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 10 days. | 75 | 30–75 | 15–30 |
| Lincoln's Sparrow | *Melospiza lincolnii* | Cup nests in depressions on the ground in shrubby growth at forest edges, clearings; often near wet areas | Ground | May through July; double brood. | Clutch incubated for 13–14 days by female; altricial young fledge at 10–12 days. | 75 | 30–75 | 15–30 |
| White-crowned Sparrow | *Zonotrichia leucophrys* | Cup nests on ground or in shrubs or small trees in coastal or mountain chaparral and mountain forests. | 0–5 feet | May through September; double or triple brood. | Clutch incubated for 9–15 days; altricial young fledge at 9–11 days | 50 | 30–50 | 15–30 |
| Dark-eyed Junco | *Junco hyemalis* | Cup nests in depressions on the ground among tree roots or brush in variety of woodland habitats; also on building ledges or in trees. | Ground, but up to 8 feet on ledges or trees | April through July; double or triple brood. | Clutch incubated for 12–13 days by female; altricial young fledge at 10–13 days. | 50 | 30–50 | 15–30 |
| Black-headed Grosbeak | *Pheucticus melanocephalus* | Cup nests in trees or shrubs in thickets, under trees along streams in riparian woodlands or coniferous or mixed forests near edges. | 6–12 feet | April through July; single brood. | Clutch incubated for 12–13 days by both sexes; altricial young fledge at 12 days. | 75 | 30–75 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Blue Grosbeak | *Guiraca caerulea* | Cup nests small trees, shrubs, or other low vegetation, usually near open areas in desert, chaparral, savannah, and forest edge habitats. | <1–16 feet | April through August; single or double brood. | Clutch incubated for 11–12 days by female; altricial young fledge at 9–13 days. | 75 | 30–75 | 15–30 |
| Lazuli Bunting | *Passerina amoena* | Cup nests in low thick shrubby riparian or chaparral habitat. | 1–10 feet | May through July; double brood. | Clutch incubated for approximately 12 days by female; altricial young fledge at 10–15 days. | 75 | 30–75 | 15–30 |
| Red-winged Blackbird | *Agelaius phoeniceus* | Cup nests in cattails, bulrushes, and other marsh vegetation or in shrubs in grasslands and shrubby habitats. | 1–13 feet | March through June; double brood. | Clutch incubated for 10–12 days by female; altricial young fledge at 10–11 days. | 75<br>350 (Kern Red-winged Blackbird) | 30–75<br>200–350 (Kern Red-winged Blackbird) | 15–30<br>100–200 (Kern Red-winged Blackbird) |
| Tricolored Blackbird | *Agelaius tricolor* | Cup nests in cattails and bulrushes in marshes and shrubby areas in uplands and agricultural areas. Colonial nester. | 1–5 feet | April through June; double brood. | Clutch incubated for approximately 11 days by female; altricial young fledge at 13 days. | 350 | CR | CR |
| Yellow-headed Blackbird | *Xanthocephalus xanthocephalus* | Cup nests cattails or other emergent vegetation over water in marshes with thick vegetative growth. Colonial nester. | 2–3 feet | May through June; single brood. | Clutch incubated for 10–13 days by female; altricial young fledge at 9–12 days old | 350 | 200–350 | 100–200 |
| Brewer's Blackbird | *Euphagus cyanocephalus* | Cup nests high in trees or shrubs near water in agricultural or suburban/urban areas. | 8–43 feet | March through July; single or double brood. | Clutch incubated for 12–13 days by female; altricial young fledge at approximately 13 days. | 50 | 30–50 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Western Meadowlark | *Sturnella neglecta* | Domed nests on ground in open grasslands. | Ground | March through June; double brood. | Clutch incubated for 13–15 days by female; altricial young fledge at 10–12 days. | 75 | 30–75 | 15–30 |
| Hooded Oriole | *Icterus cucullatus* | Closed cup nests high in trees (often palm treets) or shrubs, often in riparian habitat and in suburban areas. | 10–45 feet | April through August; double or triple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| Bullock's Oriole | *Icterus bullockii* | Pensile cup nests in twig fork of trees in riparian and oak woodlands. | 6–15 feet | April through July; single brood. | Clutch incubated for approximately 14 days by female; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| Pine Grosbeak | *Pinicola enucleator* | Cup nests near the end of horizontal tree branches in coniferous forests. | 16–35 feet | May through August; single brood. | Clutch incubated for 13–14 days by female; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| Purple Finch | *Haemorhous purpureus* | Cup nests high in trees well hidden by foliage, in coniferous forests and woodlands. | 5–60 feet | April through June; double brood. | Clutch incubated for approximately 13 days by female; altricial young fledge at approximately 14 days. | 75 | 30–75 | 15–30 |
| House Finch | *Haemorhous mexicanus* | Cup nests in trees, building ledges, and other locations in urban/suburban, agriculture, woodlands, desert, and chaparral habitats. | 5–7 feet | March through July; double or triple brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 14–16 days. | 50 | 15–30 | 10–15 |
| Red Crossbill | *Loxia curvirostra* | Loose cup constructed near the end of horizontal branch in coniferous forests. | 6–60 feet | February through June; single brood. | Clutch incubated for 12–16 days by female; altricial young fledge at 17–22 days. | 75 | 30–75 | 15–30 |

| Common Name | Scientific Name | Nest Location, Substrate, and Habitat | Vertical Height | Peak Breeding Season/Number of Broods per Season | Incubation Duration/Chick-rearing Duration | Standard Buffer* (feet) | Medium to High Disturbance Category Buffer (feet) | Low to Medium Disturbance Category Buffer (feet) |
|---|---|---|---|---|---|---|---|---|
| Pine Siskin | *Spinus pinus* | Cup nest constructed on conifer or hardwood in coniferous or mixed hardwood forests. | 3–50 feet | April through July; single or double brood. | Clutch incubated for approximately 13 days; altricial young fledge at 14–15 days. | 75 | 30–75 | 15–30 |
| Lesser Goldfinch | *Spinus psaltria* | Cup nests in trees and shrubs in a variety of open habitats including oak woodlands, mixed coniferous forests, riparian woodlands, chaparral, agricultural and suburban habitats. | 3–36 feet | April through July; single or double brood. | Clutch incubated for approximately 12 days by female; altricial young fledge at 11 days. | 75 | 30–75 | 15–30 |
| Lawrence's Goldfinch | *Spinus lawrencei* | Cup nests in scattered trees in oak woodlands and savannahs. | 3–40 feet | April through July; single or (rarely) double brood | Clutch incubated for 12–13 days by female; altricial young fledge at approximately 11 days. | 75 | 30–75 | 15–30 |
| American Goldfinch | *Spinus tristis* | Cup nests in a variety of shrubs in variety of open habitats including ruderal fields and grasslands with shrub component nearby. | 3–10 feet | April through August; single or double brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 11–17 days. | 75 | 30–75 | 15–30 |
| Evening Grosbeak | *Coccothraustes vespertinus* | Cup nests in fir or other conifers in coniferous forests. | 30–60 feet | June through August; single or (rarely) double brood. | Clutch incubated for 12–14 days by female; altricial young fledge at 13–14 days. | 75 | 30–75 | 15–30 |

[a] Consultation recommended to perform work within the standard buffer. Confer internally on avoidance and minimization approach.

[b] The 1,320-foot (0.25-mile) buffer applies to the highest noise level category (90 dB or greater measured at 50 feet). Smaller buffers may be appropriate based on the noise levels of the project. Biologists should follow the methodology found in *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (U.S. Fish and Wildlife Service 2006) to determine the noise level and appropriate buffer for their specific project.

# E PREPARERS

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Many PG&E employees and representatives contributed to the preparation of, or reviewed and commented on drafts of, the Proponent's Environmental Assessment. In addition, the following consultants provided support in preparing this document:

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