BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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

EXHIBIT B

PROPONENT'S ENVIRONMENTAL ASSESSMENT FOR THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY FOR A PERMIT TO CONSTRUCT THE SANTA CRUZ 115 KV REINFORCEMENT PROJECT

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ABBREVIATIONS AND ACRONYMS

AQMP ..... Air Quality Management Plan
AAC ..... all-aluminum conductor
ASCE ..... American Society of Civil Engineers
APMs ..... applicant-proposed measures
APE ..... area of potential effects
AB ..... Assembly Bill
dBA ..... A-weighted decibel
BMP ..... best management practice
CARB ..... California Air Resources Board
CAAQS ..... California Ambient Air Quality Standards
CBC ..... California Building Code
CCAA ..... California Clean Air Act of 1988
CCAR ..... California Climate Action Registry
CCR ..... California Code of Regulations
CDFG ..... California Department of Fish and Game
CAL FIRE ..... California Department of Forestry and Fire Protection
DTSC ..... California Department of Toxic Substances Control
Caltrans ..... California Department of Transportation
CESA ..... California Endangered Species Act
CEC ..... California Energy Commission
CEQA ..... California Environmental Quality Act
CGS ..... California Geological Survey
CGC ..... California Government Code
CNPS ..... California Native Plant Society
CNDDB ..... California Natural Diversity Database
CPUC ..... California Public Utilities Commission
CRLF ..... California red-legged frog
CRHR ..... California Register of Historical Resources
SMARA ..... California Surface Mining and Reclamation Act of 1975
CO_2 ..... carbon dioxide
CO_2E ..... carbon dioxide equivalent
CO ..... carbon monoxide
CAA ..... Clean Air Act
CWA ..... Clean Water Act
CFR ..... Code of Federal Regulations
CNEL ..... community noise equivalent level
CWPP ..... Community Wildfire Protection Plan
CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act
L_{dn} ..... day-night equivalent level
OMR ..... Department of Conservation's Office of Mine Reclamation
CalRecycle ..... Department of Resources Recycling and Recovery
DPM ..... diesel particulate matter
DPS ..... Distinct Population Segment
EDMS ..... Emissions and Dispersion Modeling System
EMFAC ..... Emissions Factors 2007 Software

ESA ..... Endangered Species Act
EPA ..... Environmental Protection Agency
L_{eq} ..... equivalent sound pressure level
Far Western ..... Far Western Anthropological Research Group
FMMP ..... Farmland Mapping and Monitoring Program
FAA ..... Federal Aviation Administration
FEMA ..... Federal Emergency Management Agency
FHWA ..... Federal Highway Administration
FLP ..... Forest Legacy Program
GO ..... General Order
GIS ..... geographic information system
GPS ..... global positioning system
GWPs ..... global warming potentials
GHG ..... greenhouse gas
HCP ..... Habitat Conservation Plan
HMBP ..... hazardous material business plan
HMMP ..... Hazardous Materials Business/Management Plan
HMTA ..... Hazardous Materials Transportation Act
HWCL ..... Hazardous Waste Control Law
H&SC ..... Health and Safety Code
Insignia ..... Insignia Environmental
IEEE ..... Institute of Electrical and Electronics Engineers
kV ..... kilovolt
LOS ..... Level of Service
LSEs ..... load serving entities
LEPC ..... Local Emergency Planning Committee
Mwmax ..... maximum value of magnitude
MSL ..... mean sea level
MW ..... megawatts
CH_4 ..... methane
MTP ..... Metropolitan Transportation Plan
MP ..... Milepost
mm/yr ..... millimeters per year
$MMTCO_2E$ ..... million metric tons of CO2E
MBUAPCD ..... Monterey Bay Unified Air Pollution Control District
NAAQS ..... National Ambient Air Quality Standards
NFIP ..... National Flood Insurance Program
NHPA ..... National Historic Preservation Act
NOAA ..... National Oceanic and Atmospheric Administration's
NPDES ..... National Pollutant Discharge Elimination System
NRHP ..... National Register of Historic Places
NAGPRA ..... Native American Graves Protection and Repatriation Act
NAHC ..... Native American Heritage Commission
NPPA ..... Native Plant Protection Act
NCCP ..... Natural Community Conservation Plan
NRCS ..... Natural Resource Conservation Service

NO_2 ..... nitrogen dioxide
NO_x ..... nitrogen oxides
N_2O ..... nitrous oxide
NCCAB ..... North Central Coast Air Basin
OSHA ..... Occupational Safety and Health Administration
OES ..... Office of Emergency Services
OEHHA ..... Office of Environmental Health Hazard Assessment
OPR ..... Office of Planning and Research
O&M ..... operation and maintenance
OHWM ..... ordinary high water mark
PG&E ..... Pacific Gas and Electric Company
PM ..... particulate matter
ppb ..... parts per billion
ppm ..... parts per million
PPV ..... peak particle velocity
PTC ..... Permit to Construct
PERP ..... Portable Equipment Registration Program
PEA ..... Proponent's Environmental Assessment
PRC ..... Public Resource Code
ROGs ..... reactive organic gases
RWQCB ..... Regional Water Quality Control Board
RPS ..... Renewable Portfolio Standard
RQ ..... reportable quantities
RCRA ..... Resource Conservation and Recovery Act
ROW ..... right-of-way
SDWA ..... Safe Drinking Water Act
project ..... Santa Cruz 115 Kilovolt Reinforcement Project
County ..... Santa Cruz County
RTP ..... Santa Cruz County Regional Transportation Plan
METRO ..... Santa Cruz Metropolitan Transit District
SDC ..... seismic design category
SB ..... Senate Bill
SPCC ..... Spill, Prevention, Control, and Countermeasure
SIP ..... State Implementation Plan
SMGB ..... State Mining and Geology Board
SR ..... State Route
SWRCB ..... State Water Resources Control Board
SWPPP ..... Storm Water Pollution Prevention Plan
SO_2 ..... sulfur dioxide
SF_6 ..... sulfur hexafluoride
SO_x ..... sulfur oxides
SARA ..... Superfund Amendments and Reauthorization Act
TQs ..... threshold quantities
TP ..... Timberland production
TPZ ..... timberland production zone
TMDLs ..... Total Maximum Daily Loads

TACs ..... toxic air contaminants
TSPs ..... tubular steel poles
USACE ..... U.S. Army Corps of Engineers
USDA ..... U.S. Department of Agriculture
USDOT ..... U.S. Department of Transportation
USFWS ..... U.S. Fish and Wildlife Service
USGS ..... U.S. Geological Survey
USTs ..... underground storage tanks
U.S. ..... United States
VOCs ..... volatile organic compounds
V/C ..... volume-to-capacity

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1 – PEA SUMMARY

1.1 INTRODUCTION

In accordance with the California Public Utilities Commission's (CPUC) General Order (GO) 131-D, Pacific Gas and Electric Company (PG&E) is submitting this Proponent's Environmental Assessment (PEA) as part of its application for a Permit to Construct (PTC) for the Santa Cruz 115 Kilovolt (kV) Reinforcement Project (project).

1.2 PROJECT COMPONENTS

The project is divided into the following four components:

1. Rebuilding an approximately 7.1-mile-long portion of the existing 17.7-mile-long Green Valley-Camp Evers 115 kV Power Line (Northern Alignment) between Green Valley Substation and a point near the intersection of Cox Road and Leslie Lane from a single-circuit line to a double-circuit line by replacing the existing wood power poles with tubular steel poles (TSPs) and installing new conductors.

2. Constructing an approximately 1.7-mile-long single-circuit 115 kV power line (Cox-Freedom Segment), beginning at a new TSP interset near the intersection of Cox Road and Leslie Lane and continuing to the existing Rob Roy Substation. The new power line will be in the same right-of-way (ROW) and/or franchise as an existing distribution line; the new power line will be on new TSPs and wood poles, some of which will replace existing wood poles of the existing distribution line.

3. Installing new components at Rob Roy Substation in order to accommodate the new 115 kV circuit.

4. Installing one new TSP and replacing two existing wood power poles with new TSPs to accommodate the interconnection of the existing Green Valley-Rob Roy 115 kV Power Line and Rob Roy-Paul Sweet 115 kV Power Line into the modified Rob Roy Substation. The new TSPs that will be used to facilitate the interconnection of existing power lines to Rob Roy Substation will be installed on PG&E-owned land and within an adjacent ROW currently maintained by PG&E, located approximately 15 feet south of the substation fence line.

1.3 PROJECT LOCATION

The project is located in southern Santa Cruz County, California, spanning the area between the cities of Watsonville and the community of Aptos. The Northern Alignment originates at Green Valley Substation, located on Minto Road north of the City of Watsonville approximately 0.3 mile east of Green Valley Road. From the substation, the line heads north for approximately 0.8 mile to Dalton Lane before turning west for approximately 0.7 mile and spanning Pinto Lake Park. The line then heads northwest for approximately 1.6 miles, turns west for approximately 0.9 mile, then continues northwest for approximately 3.1 miles to a point near the intersection of

Cox Road and Leslie Lane. From this point, the Cox-Freedom Segment will head south along Cox Road for approximately 0.3 mile, turn west along Day Valley Road for approximately 0.1 mile, and then head south along McDonald Road for approximately 0.6 mile. The line will continue southwest along Freedom Boulevard for approximately 0.7 mile before entering Rob Roy Substation at its southerly corner. The Rob Roy Substation Connections run from approximately 1,340 feet southeast of the intersection of Huntington Drive and Huntington Court to Rob Roy Substation and within Rob Roy Substation to a point near the southwest fence line of Rob Roy Substation.

1.4 PROJECT NEED AND ALTERNATIVES

As discussed in Chapter 2 – Project Description, PG&E is proposing the project to increase reliability and responsive support in the area during outages within the local system. Specifically, the project will add a second 115 kV circuit between Green Valley Substation and Rob Roy Substation to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system. Chapter 5 – Alternatives discusses the alternatives that were considered for the proposed project and the justification for the selection of the proposed project route. This discussion is included to comply with the CPUC's GO 131-D, section IX.B.1.c, but is not included as part of the California Environmental Quality Act (CEQA) analysis because this PEA has concluded that all impacts from the proposed project will be less than significant. CEQA does not require a review of alternatives where, as with PG&E's project, the proposed project would result in no significant environmental impacts after mitigation (CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3 (Guidelines), § 15126.6, subdivision (a) and (f)(2)(A); assigned Commissioner's Ruling dated October 16, 2001, A.01-07-004). This is because, under CEQA, a "reasonable alternative" is one that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project (Guidelines, § 15126.6, subdivision (a).) Although several system alternatives were considered during the development of the project, the proposed project was ultimately selected because it meets the project objectives and routing criteria while causing only minimal foreseeable environmental impacts and the least amount of foreseeable environmental impacts of the alternatives analyzed.

1.5 AGENCY COORDINATION

1.5.1 California Public Utilities Commission

On April 26, 2011, Brandon Liddell and Jo Lynn Lambert of PG&E, Buck Jones of Transcon Environmental, and Anne Marie McGraw of Insignia Environmental met with Billie Blanchard, Mary Jo Borak, Andrew Barnsdale, John Boccio, and Lisa Orsaba of the CPUC to discuss the project. During the meeting, PG&E provided an overview of the project and details on the types of poles to be used, pole spacing, ROW requirements, locations of staging areas, helicopter use, land uses crossed, sensitive visual receptors, project outreach efforts, meetings with agencies, and project schedule.

On January 10, 2012, Brandon Liddell and Matthew Fogelson of PG&E, Buck Jones of Transcon Environmental, and Robert Curley of Insignia Environmental met with Lisa Orsaba of the CPUC

and representatives of Panorama Environmental to discuss the project objective, project description, alternatives, anticipated impacts, and the PEA filing schedule.

1.5.2 United States Fish and Wildlife Service

On April 7, 2011, Brandon Liddell and Christine Gaber of PG&E and DJ Allison and Gretchen Padgett-Flohr of Insignia Environmental met with Chad Mitcham of the United States Fish and Wildlife Service (USFWS) to discuss PG&E's intent to conduct protocol-level California red-legged frog (CRLF) surveys in support of the project. During this meeting, a project overview was provided by PG&E and a list of ponds planned for surveys was reviewed. On April 13, 2011, the USFWS granted permission for PG&E/Insignia Environmental to initiate protocol-level CRLF surveys within the project survey area. Additional approval was received to conduct seining and/or dip-netting for larval amphibians within these ponds under the authority of Federal Fish and Wildlife Permit #TE0006112-5 issued to Gretchen Padgett-Flohr under Section 10(a)(1)(A) of the Endangered Species Act. On December 29, 2011, PG&E provided the results of CRLF surveys to the USFWS. The USFWS concurred in an email sent on January 18, 2012 that the project would not result in impacts to the species. All USFWS correspondence will be provided separately to CPUC staff.

1.5.3 Native American Heritage Commission

The Native American Heritage Commission (NAHC) was contacted by letter, informing it of the project and requesting a review of its sacred lands files and a list of the appropriate Native American representatives to contact for input on the project. The NAHC did not indicate the presence of any sensitive locations in the vicinity of the project, but did provide a list of 10 local Native American contacts that may have knowledge of cultural resources within or near the project area. PG&E's cultural resources consultant, Far Western Anthropological Research Group (Far Western), mailed letters to the 10 Native American contacts provided by the NAHC on November 12, 2010 and subsequently contacted each of the representatives by phone on December 3, 2010. Three of those representatives requested that they be provided further information as the project progressed.

On May 12, 2011, Far Western, contacted three Native American representatives to coordinate project activities with the Native American tribes and ensure avoidance of any sacred lands. Of the three Native American representatives contacted, one individual—Ann Marie Sayers of the Indian Canyon Mutsun Band of Costanoans—requested that she be kept informed of the project's progress. Ms. Sayers also requested that a Native American monitor be present during any earth disturbances in sensitive areas, particularly next to waterways. The other two individuals contacted—Patrick Orozco of the Costanoan Ohlone Rumsen-Mutsen Tribe and Ramona Garibay, representative for the Trina-Marine-Ruanoa Family—did not provide any comments or make any requests; however, Far Western will include them in future project updates. All Native American correspondence is included in Attachment 3.5-A: Native American Consultation.

1.5.4 Santa Cruz County

On July 22, 2010 and March 9, 2011, Brandon Liddell of PG&E, Buck Jones of Transcon Environmental, and Anne Marie McGraw of Insignia Environmental met with the Planning

Director, Kathy Previsich, and an Environmental Planner, Todd Sexauer, of the Santa Cruz County Planning Department to discuss the project. During the meetings, PG&E discussed the project objectives and purpose, potential routes that were evaluated for the project, preliminary environmental concerns identified for the project, and the CPUC regulatory process and requirements.

On December 7, 2011, PG&E representatives met with the Santa Cruz County Planning Director, Kathy Previsich, and the Director of Public Works, John Presleigh, to discuss the selected route and to present examples of pole configurations. On December 21, 2011, PG&E sent a letter to the Planning Director documenting the meeting and requesting a letter of support.

1.5.5 Cities/Unincorporated Communities

As described in the following, PG&E met with cities and unincorporated communities served by the proposed power line to consult with them about the project, as required under CPUC GO 131-D. The meetings that were held are summarized as follows:

- On June 28, 2010 and again on March 9, 2011, Brandon Liddell and Wendy Sarsfield of PG&E and Buck Jones of Transcon Environmental met with Santa Cruz County Second District Supervisor Ellen Pirie to discuss the project. The Second Supervisorial District includes the unincorporated communities of Aptos, La Selva Beach, Corralitos, Freedom, and portions of the cities of Capitola and Watsonville.

- On June 28, 2010, Brandon Liddell and Wendy Sarsfield of PG&E and Buck Jones of Transcon Environmental met with Santa Cruz County Fourth District Supervisor, Tony Campos, to discuss the project. On February 16, 2011, Brandon Liddell and Wendy Sarsfield of PG&E and Buck Jones of Transcon Environmental met with the then newly elected Santa Cruz County Fourth District Supervisor, Greg Caput. The Fourth Supervisorial District includes the unincorporated community of Interlaken and most of the City of Watsonville.

- On July 6, 2010, and December 8, 2010, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with City of Scotts Valley Interim Community Development Director, Susan Westman, City Manager, Stephen Ando, and a Senior Planner. On December 21, 2011, PG&E sent a letter to the City of Scotts Valley documenting the meeting and requesting a letter of support.

- On August 11, 2010, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with City of Santa Cruz Director of Public Works, Mark Dettle, and Principal Planner, Ken Thomas. At a November 30, 2011 meeting with PG&E, the City of Santa Cruz expressed interest in co-locating a fiber optic line along the proposed transmission route to facilitate broadband internet communication within Santa Cruz County. On December 8, 2011, PG&E met with the City of Santa Cruz Chief Technology Officer, Christopher Stathis, and the Economic Coordinator to discuss co-locating a fiber optic line along the proposed transmission line. On December 21, 2011, PG&E sent a letter to the City of Santa Cruz documenting the meetings and requesting a letter of support.

- On July 7, 2010, and December 15, 2011, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with City of Capitola Manager, Jamie Goldsmith, and Public Works Director, Steven Jesburg. On December 21, PG&E sent a letter to the City of Capitola documenting the meeting and requesting a letter of support.

- On July 12, 2010, and December 15, 2011, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with City of Watsonville Public Works Director, David Koch; Parks and Community Services Director, Ana Espinoza; Administration Analyst, Adriana Moreno; and Principal Planner, Keith Boyle. On December 21, 2011, PG&E sent a letter to the City of Watsonville documenting the meeting and requesting a letter of support.

- On October 1, 2010, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with University of California, Santa Cruz Planning Department.

During these meetings, PG&E discussed the project scope, CPUC permitting process, coordination with other local agencies, and other developments proposed along the power line. PG&E also noted the lack of need for local customer outages due to construction taking place during the summer months when the electrical load could be supplied by one of the lines in the Santa Cruz power line loop.

1.5.6 Pinto Lake County and City Park

On November 4, 2010, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with City of Watsonville Director of Parks and Community Services Department, Ana Espinoza, to discuss the project.

On December 13, 2010, Brandon Liddell of PG&E and Buck Jones of Transcon Environmental met with Joe Schultz and Gretchen Iliff from Santa Cruz County Parks, Open Space and Cultural Resources to discuss the project. During the meeting, PG&E discussed specific impacts anticipated to Pinto Lake County and City Park.

On December 8, 2011, PG&E met with Santa Cruz County Parks Department staff to discuss the proposed pole locations and construction methods occurring within Pinto Lake County and City Park. County staff provided feedback on scheduling construction activities to minimize interruption to park visitors and said they could supply PG&E with a letter of support for the project. On December 21, 2011, PG&E sent a letter to the Santa Cruz County Parks Department documenting the meeting and requesting a letter of support.

1.6 PROPONENT'S ENVIRONMENTAL ASSESSMENT CONTENTS

This PEA was prepared in accordance with the PEA Checklist issued by the CPUC on November 24, 2008. In addition to this summary section, the PEA includes the following sections:

- Chapter 2 – Project Description, includes specifics regarding the project location; the existing system; project objectives; project components; permanent and temporary land/ROW requirements; construction methods; construction schedule; anticipated

operations and maintenance activities; federal and local permits that may be required for the project; and a summary of all applicant-proposed measures (APMs) to be implemented as part of the project.

- Chapter 3 – Environmental Impact Assessment, includes an environmental impact assessment summary and a discussion of the existing conditions and potential and anticipated impacts of the project for each of the following resource areas:

  3.1 Aesthetics
  3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources
  3.3 Air Quality and Greenhouse Gas Emissions
  3.4 Biological Resources
  3.5 Cultural Resources
  3.6 Geology, Soils, and Mineral Resources
  3.7 Hazards and Hazardous Materials
  3.8 Hydrology and Water Quality
  3.9 Noise
  3.10 Population and Housing, Public Services, and Utilities
  3.11 Transportation and Traffic

  The CPUC's PEA Checklist indicates that the environmental setting section can be provided separately or combined with the impacts and APMs. PG&E has elected to combine the existing conditions, impacts, and APMs for each resource area in Chapter 3 – Environmental Impact Assessment.

  This PEA analyzes the potential environmental impacts associated with construction, operation, and maintenance of the project. With the inclusion of APMs, all resources areas will experience less-than-significant impacts.

- Chapter 4 – Cumulative and Growth-Inducing Analysis, includes a cumulative analysis that discusses past, present, and reasonably foreseeable future projects within the project area; the project's potential to contribute to a significant cumulative effect; and growth-inducing impacts.

- Chapter 5 – Alternatives provides the discussion required by GO 131-D section IX.B.1.c concerning the alternatives that were evaluated in determining the proposed project and the justification for the selection of the proposed route.

The PEA addresses all of the items listed in the CPUC's PEA Checklist. To facilitate review of the PEA, Table 1-1: PEA Checklist Key has been provided at the end of this section. The table identifies the section in which each checklist item is addressed.

1.7 PUBLIC OUTREACH EFFORTS

PG&E held public open houses on October 25, 2011 (at Grange Hall, 165 Little Corral Road in Corralitos) and October 27, 2011 (at the Veterans of Foreign Wars Hall, 1960 Freedom Boulevard in Freedom). PG&E invited residents within 300 feet of the proposed line. The open

houses featured several staffed stations, including a welcome station, a purpose and need station, an approval process station, a project location and description station, an environmental analysis station, a route maps and right-of-way station, and a vegetation management station. A total of approximately 30 residents attended the open houses.

As part of the filing of the PTC application and CEQA review process, all landowners and tenants within 300 feet of the project components will be notified. Members of the public will have multiple opportunities to provide comments during the CPUC environmental review process. In addition, PG&E has established a project hotline phone number for the public to obtain project information, ask questions, and lodge complaints.

Table 1-1: PEA Checklist Key

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
Chapter 1: PEA Summary		
	Include major conclusions of the PEA.	Section 1.7 Proponent's Environmental Assessment Conclusions
	List any areas of controversy.	Public outreach efforts for the project to date have not identified any areas of controversy.
	Include a description of inter-agency coordination, if any.	Section 1.5 Agency Coordination
	Include a description of public outreach efforts, if any.	Section 1.8 Public Outreach Efforts
	Identify any major issues that must be resolved, including the choice among reasonably feasible alternatives and mitigation measures, if any.	Public outreach efforts for the project to date have not identified any major issues.
Chapter 2: Project Purpose and Need		
2.1 Overview	Include an analysis of Proposed Project objectives and purpose and need that is sufficiently detailed so that the Commission can independently evaluate the Proposed Project need and benefits in order to accurately consider them in light of the potential environmental impacts.	Section 2.3 Project Objective
	Explain the objective(s) and/or purpose and need for implementing the Proposed Project.	Section 2.3 Project Objective
2.2 Project Objectives	Include an analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of Proposed Project objectives which will aid any appropriate CEQA alternatives screening process.	Section 2.3 Project Objective
Chapter 3: Project Description		
3.1 Project Location	Identify geographical location: County, City (provide Proposed Project location map[s]).	Section 2.1 Project Location Section 2.1.1 Northern Alignment Section 2.1.2 Cox-Freedom Segment Section 2.1.3 Rob Roy Substation Section 2.1.4 Rob Roy Substation Connections Figure 2-1: Project Overview Map Attachment 2-A: Detailed Route Maps

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.1 Project Location (cont.)	Provide a general description of land uses within the Proposed Project site (e.g., residential, commercial, agricultural, recreation, vineyards, farms, open space, number of stream crossings, etc.).	Section 2.1 Project Location Section 2.1.1 Northern Alignment Section 2.1.2 Cox-Freedom Segment Section 2.1.3 Rob Roy Substation Section 2.1.4 Rob Roy Substation Connections Figure 2-1: Project Overview Map Attachment 2-A: Detailed Route Maps
	Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights-of-way (ROW), or requires new ROW. Provide the approximate area of the property or the length of the Proposed Project that is in an existing ROW or which requires new ROWs.	Section 2.1 Project Location Section 2.1.1 Northern Alignment Section 2.1.2 Cox-Freedom Segment Section 2.1.3 Rob Roy Substation Section 2.1.4 Rob Roy Substation Connections Section 2.6 Permanent Land/Right-of-Way Requirements Section 2.6.1 Northern Alignment Section 2.6.2 Cox-Freedom Segment Section 2.6.3 Rob Roy Substation Connections
3.2 Existing System	Describe the local system to which the Proposed Project relates. Include all relevant information about substations, transmission lines, and distribution circuits.	Section 2.2 Existing System
	Provide a schematic diagram and map of the existing system.	Figure 2-2: Existing System Map Figure 2-3: Existing System Schematic
	Provide a schematic diagram that illustrates the system as it would be configured with the implementation of the Proposed Project.	Figure 2-4: Proposed System Schematic
3.4 Proposed Project	Describe the whole of the Proposed Project. Is it an upgrade, a new line, new substations, etc.?	Section 2.3 Project Objective Section 2.4 Project Description
	Describe how the Proposed Project fits into the regional system. Does it create a loop for reliability, etc.?	Section 2.3 Project Objective
	Describe all reasonably foreseeable future phases or other reasonably foreseeable consequences of the Proposed Project.	Section 2.4 Project Description
	Provide the capacity increase in megawatts (MW). If the Proposed Project does not increase capacity, state that.	Section 2.4 Project Description The project increases capacity by over 130 MW.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.4 Proposed Project (cont.)	Provide geographic information system (GIS) (or equivalent) data layers for the Proposed Project preliminary engineering, including estimated locations of all physical components of the Proposed Project, as well as those related to construction.	A CD containing the relevant GIS data for the project will be submitted separately to CPUC staff.
3.5 Project Components **3.5.1 Transmission Line**	Describe what type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV).	Section 2.2 Existing System Section 2.5 Project Components Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Identify the length of the upgraded alignment, the new alignment, etc.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Describe whether construction would require one-for-one pole replacement, new poles, steel poles, etc.?	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
3.5.2 Poles/Towers	Provide information for each pole/tower that would be installed and for each pole/tower that would be removed.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment Table 2-1: Pole Summary Table
	Provide a unique identification number to match GIS database information.	A CD containing the relevant GIS data, which includes unique identification numbers for poles, will be submitted separately to CPUC staff.
	Provide a structural diagram and, if available, photos of existing structure. Preliminary diagram or “typical” drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment Figure 2-5: Typical Pole Drawings Photographs and visual simulations of the existing and proposed structures have been included in Section 3.1 Aesthetics.
	Provide the type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting, lattice, etc.).	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.2 Poles/Towers (cont.)	Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment Section 2.7.8.1 Construction Methods
	Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys, etc.); make sure to note if any guying would likely be required across a road.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	If the Proposed Project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
3.5.3 Conductor/Cable **3.5.3.1 Above-Ground Installation**	Describe the type of line to be installed on the poles/tower (e.g. single-circuit with distribution, double circuit, etc.).	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Describe the number of conductors required to be installed on the poles or tower and the number on each side, including applicable engineering design standards.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment Figure 2-5: Typical Pole Drawings
	Provide the size and type of conductor (e.g., aluminum conductor, steel reinforced, non-specular, etc.) and insulator configuration.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically). Provide specific information at highways, rivers, or special crossings.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment
	Determine whether other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc.); if so, provide conduit diameter of other infrastructure.	Section 2.5.1 Northern Alignment Section 2.5.2 Cox-Freedom Segment

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.3.2 Below Ground Installation	Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables).	No below ground installation is planned for the project.
	Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing.	
	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.).	
3.5.4 Substations	Provide "typical" plan and profile views of the proposed substation and the existing substation if applicable.	Figure 2-6: Rob Roy Substation Layout Drawing Figure 2-7: Rob Roy Substation Profile Drawing
	Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to mobile substations, transformers, capacitors, and new lighting.	Section 2.5.3 Rob Roy Substation Modification Table 2-2: Rob Roy Substation Modification Summary
	Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	Figure 2-6: Rob Roy Substation Layout Drawing Figure 2-7: Rob Roy Substation Profile Drawing
	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?	Section 2.5.3 Rob Roy Substation Modification
	Describe the electrical need area served by the distribution substation.	Section 2.2 Existing System Section 2.3 Project Objectives
3.6 Right-of-Way Requirements	Describe the ROW location, ownership, and width. Would the existing ROW be used or would new ROW be required?	Section 2.6 Permanent Land/Right-of-Way Requirements Section 2.6.1 Northern Alignment Section 2.6.2 Cox-Freedom Segment Section 2.6.3 Rob Roy Substation Connections
	If a new ROW is required, describe how it would be acquired and approximately how much land would be required (length and width).	Section 2.6 Permanent Land/Right-of-Way Requirements

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.6 Right-of-Way Requirements (cont.)	List the properties likely to require acquisition.	A list of properties within 300 feet of the project will be submitted to the CPUC after the project application is noticed. Any locations where additional easement width will be required will not be determined until final engineering has been completed.
3.7 Construction **3.7.1 For All Projects**	Where would the main staging area(s) likely be located?	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards Attachment 2-A: Detailed Route Maps
	Approximately how large would the main staging area(s) be?	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards Attachment 2-A: Detailed Route Maps Table 2-4: Temporary Work Area Table Summary
	Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.).	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards Table 2-4: Temporary Work Area Table Summary
3.7.1.1 Staging Areas	Describe what the staging area would be used for (e.g., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.).	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards
	Describe how the staging area would be secured; would a fence be installed? If so, describe the type and extent of the fencing.	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards
	Describe how power to the site would be provided if required (e.g., tap into existing distribution, use of diesel generators, etc.).	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards
	Describe any grading activities and/or slope stabilization issues.	Section 2.7.3 Staging Areas/Landing Zones Section 2.7.4 Contractor Storage Yards
3.7.1.2 Work Areas	Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.).	Section 2.7.5 Work Areas Section 2.7.5.1 Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections Section 2.7.5.2 Substation Work Area

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.2 Work Areas (cont.)	For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	Section 2.7.5 Work Areas Section 2.7.5.1 Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections Section 2.7.5.2 Substation Work Area Table 2-4: Temporary Work Area Table Summary Attachment 2-A: Detailed Route Maps
	Identify the approximate location of known work areas in the GIS database.	A CD containing the relevant GIS data, which includes the approximate location of known work areas, will be submitted separately to CPUC staff.
	Describe how the work areas would likely be accessed (e.g., construction vehicles, walk-in, helicopter, etc.).	Section 2.7.1 Access Roads/Overland Access Routes Section 2.7.1.1 Northern Alignment Section 2.7.1.2 Cox-Freedom Segment Section 2.7.1.3 Rob Roy Substation Section 2.7.1.4 Roy Roy Substation Connections Section 2.7.2 Helicopter Access
	If any site preparation is likely required, generally describe what and how it would be accomplished.	Section 2.7.5 Work Areas Section 2.7.5.1 Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections Section 2.7.5.2 Substation Work Area Section 2.7.6 Vegetation Clearing Section 2.7.8.1 Construction Methods Section 2.7.8.2 Rob Roy Substation Modification
	Describe any grading activities and/or slope stabilization issues.	Section 2.7.5 Work Areas Section 2.7.5.1 Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections Section 2.7.5.2 Substation Work Area Section 2.7.7 Erosion and Sediment Control and Pollution Prevention Section 2.7.8.1 Construction Methods
	Based on the information provided, describe how the site would be restored.	Section 2.7.8.3 Cleanup and Post-Construction Restoration

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.3 Access Roads and/or Spur Roads	Describe the types of roads that would be used and/or would need to be created to implement the Proposed Project. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements; existing paved road; existing dirt/gravel road; and overland access.	Section 2.7.1 Access Roads/Overland Access Routes Table 2-3: Access Summary Table Attachment 2-A: Detailed Route Maps
	For road types that require preparation, describe the methods and equipment that would be used.	Section 2.7.1 Access Roads/Overland Access Routes Table 2-3: Access Summary Table
	Identify approximate location of all access roads (by type) in the GIS database.	A CD containing the relevant GIS data for the project, which includes the approximate location of all access roads identified by type, will be submitted separately to CPUC staff.
	Describe any grading activities and/or slope stabilization issues.	Section 2.7.1 Access Roads/Overland Access Routes
3.7.1.4 Helicopter Access	Identify which proposed poles/towers would be removed and/or installed using a helicopter.	Section 2.7.2 Helicopter Access
	If different types of helicopters are to be used, describe each type (e.g., light, heavy, or sky crane) and what activities they would be used for.	Section 2.7.2 Helicopter Access
	Provide information as to where the helicopters would be staged, where they would refuel, and where they would land within the Proposed Project site.	Section 2.7.2 Helicopter Access Section 2.7.3 Staging Areas/Landing Zones Attachment 2-A: Detailed Route Maps
	Describe any Best Management Practices (BMPs) that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	Section 2.7.2 Helicopter Access Section 2.10 Applicant-Proposed Measures
	Describe flight paths, payloads, hours of operations for known locations, and work types.	Section 2.7.2 Helicopter Access

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.5 Vegetation Clearance	Describe the types of vegetation clearing that may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.).	Section 2.7.6 Vegetation Clearing
	Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	A CD containing the relevant GIS data for the project, which includes the area of vegetation removal and disturbance, will be submitted separately to CPUC staff.
	Describe how each type of vegetation removal would be accomplished.	Section 2.7.6 Vegetation Clearing
	For removal of trees, distinguish between tree trimming as required under GO-95 and tree removal.	Section 2.7.6 Vegetation Clearing
	Describe the types and approximate number and size of trees that may need to be removed.	The types, number, and sizes of trees to be removed has not yet been determined.
	Describe the type of equipment typically used.	Section 2.7.6 Vegetation Clearing Attachment 2-B: Construction Equipment Summary
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	Describe the areas of soil disturbance including estimated total areas and associated terrain type and slope. List all known permits required. For project sites of less than one acre, outline the BMPs that would be implemented to manage surface runoff. Things to consider include, but are not limited to: Erosion and sedimentation BMPs, vegetation removal and restoration, and/or hazardous waste, and spill prevention plans.	Section 2.7.6 Vegetation Clearing Section 2.9 Anticipated Permits and Approvals Table 2-5: Potential Permits and Approvals Section 2.10 Applicant-Proposed Measures Table 2-6: Applicant-Proposed Measures Chapter 3.6 Geology, Soils, and Mineral Resources
	Describe any grading activities and/or slope stabilization issues.	Section 2.7.7 Erosion and Sediment Control and Pollution Prevention Table 2-6: Applicant-Proposed Measures
	Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed.	Section 2.7.8.3 Cleanup and Post-Construction Restoration
3.7.1.7 Cleanup and Post-Construction Restoration	Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider, but are not limited to, restoration of natural drainage patterns, wetlands, vegetation, and other disturbed areas (i.e., staging areas, access roads, etc.).	Section 2.7.8.3 Cleanup and Post-Construction Restoration Table 2-6: Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2 Transmission Line Construction (Above Ground) **3.7.2.1 Pull and Tension Sites**	Provide the general or average distance between pull and tension sites.	Section 2.7.8.1 Construction Methods
	Provide the area of pull and tension sites including the estimated length and width.	Section 2.7.8.1 Construction Methods
	According to the preliminary plan, identify the number of pull and tension sites that would be required, and their locations. Provide the location information in GIS.	Section 2.7.8.1 Construction Methods Attachment 2-A: Detailed Route Maps A CD containing the relevant GIS data for the project will be submitted separately to CPUC staff.
	Describe the type of equipment that would be required at these sites.	Section 2.7.8.1 Construction Methods Attachment 2-B: Construction Equipment Summary
	If conductor is being replaced, describe how it would be removed from the site.	Section 2.7.8.1 Construction Methods
3.7.2.2 Pole Installation and Removal	Describe how the construction crews and their equipment would be transported to and from the pole site locations. Provide vehicle type, number of vehicles, estimated number of trips, and hours of operation.	Section 2.7.1 Access Roads/Overland Access Routes Section 2.7.2 Helicopter Access Section 2.7.8.1 Construction Methods Attachment 2-B: Construction Equipment Summary
	Describe the process of removing the poles and foundations.	Section 2.7.8.1 Construction Methods
	Describe what happens to the holes that the poles were in (i.e., reused or backfilled)?	Section 2.7.8.1 Construction Methods
	If the holes are to be backfilled, what type of fill would be used and where would it come from?	Section 2.7.8.1 Construction Methods
	Describe any surface restoration that would occur at the pole sites.	Section 2.7.8.3 Cleanup and Post-Construction Restoration
	Describe how the poles would be removed from the sites.	Section 2.7.8.1 Construction Methods
	If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, describe the methodology to access and remove the tops of these poles. Describe any special methods that would be required to top poles that may be difficult to access, etc.	Section 2.7.8.1 Construction Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2.2 Pole Installation and Removal (cont.)	Describe the process of how the new poles/towers would be installed; specifically identify any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers.	Section 2.7.8.1 Construction Methods Section 2.7.2 Helicopter Access
	Describe the types of equipment and their use as related to pole/tower installation.	Section 2.7.8.1 Construction Methods Attachment 2-B: Construction Equipment Summary
	Describe the actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.).	Section 2.7.8.1 Construction Methods
	Describe what would be done with soil that is removed from a hole/foundation site.	Section 2.7.8.1 Construction Methods
	For any foundations required, provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	Section 2.7.8.1 Construction Methods
	Describe briefly how poles/towers and associated hardware are assembled.	Section 2.7.8.1 Construction Methods
	Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off site and brought in or assembled on site?	Section 2.7.8.1 Construction Methods
	Provide the following information about pole/tower installation and associated disturbance area estimates: pole diameter for each pole type (e.g., wood, self-supporting steel, lattice, etc.), base dimensions for each pole type, auger hole depth for each pole type, permanent footprint per pole/tower, number of poles/towers by pole type, average work area around poles/towers by pole type (e.g., for old pole removal and new pole installation), and total permanent footprint for poles/towers.	Section 2.7.8.1 Construction Methods Figure 2-5: Typical Pole Drawings
3.7.2.3 Conductor/Cable Installation	Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable.	Section 2.7.8.1 Construction Methods
	Generally describe the conductor/cable splicing process.	Section 2.7.8.1 Construction Methods
	If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	No vaults are planned for the project.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2.3 Conductor/Cable Installation (cont.)	Describe in what areas conductor/cable stringing/installation activities would occur.	Section 2.7.8.1 Construction Methods Attachment 2-A: Detailed Route Maps
	Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing, etc.).	Section 2.7.8.1 Construction Methods
3.7.3 Transmission Line Construction (Below Ground) **3.7.3.1 Trenching**	Describe the approximate dimensions of the trench (e.g., depth, width).	No trenching is planned for the project.
	Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.).	
	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.	
	Provide off-site disposal location, if known, or describe possible option(s).	
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	
	Describe if dewatering would be anticipated and, if so, how the trench would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed of.	
	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.	
	If pre-existing hazardous waste was encountered, describe the process of removal and disposal.	
	Describe any standard BMPs that would be implemented.	

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Provide the approximate location of the sending and receiving pits.	No trenchless construction is planned for the project.
	Provide the length, width and depth of the sending and receiving pits.	
	Describe the methodology of excavating and shoring the pits.	
	Describe the methodology of the trenchless technique.	
	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.	
	Describe the process for safe handling of drilling mud and bore lubricants.	
	Describe the process for detecting and avoiding “fracturing-out” during horizontal directional drilling operations.	
	Describe the process for avoiding contact between drilling mud/lubricants and stream beds.	
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	
	If dewatering is anticipated, describe how the pit would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed of.	
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	
	If a pre-existing hazardous waste was encountered, describe the process of removal and disposal.	
	Describe any grading activities and/or slope stabilization issues.	
	Describe any standard BMPs that would be implemented.	

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.4 Substation Construction	Describe any earth-moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site for both site grading and foundation excavation.	Section 2.7.8.2 Rob Roy Substation Modification
	Provide a conceptual landscape plan in consultation with the municipality in which the substation is located.	No additional landscaping is planned for the existing project substations; however, potential landscaping is proposed as an APM to reduce visual impacts to residents along the power line.
	Describe any grading activities and/or slope stabilization issues.	Section 2.7.8.2 Rob Roy Substation Modification
	Describe possible relocation of commercial or residential property, if any.	No relocation of existing structures is planned for the Project.
3.7.5 Construction Workforce and Equipment	Provide the estimated number of construction crew members.	Section 2.7.11 Personnel
	Describe the crew deployment, whether crews would work concurrently (i.e., multiple crews at different sites), if they would be phased, etc.	2.7.7 Erosion and Sediment Control and Pollution Prevention
	Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e., trenching, grading, etc.), and the number and types of equipment expected to be used for said activity. Include a written description of the activity.	Section 2.7.8.1 Construction Methods Section 2.7.11 Personnel Attachment 2-B: Construction Equipment Summary
	Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment.	Section 2.7.8.1 Construction Methods Attachment 2-B: Construction Equipment Summary
3.7.6 Construction Schedule	Provide a preliminary project construction schedule; include contingencies for weather, wildlife closure periods, etc.	Section 2.7.10 Schedule
3.8 Operation and Maintenance	Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.).	Section 2.8 Operation and Maintenance Section 2.8.1 Power Lines Section 2.8.2 Rob Roy Substation
	Describe the general maintenance program of the Proposed Project including timing of inspections (i.e., monthly, every July, as needed), type of inspection (i.e., aerial inspection, ground inspection), and a description of how the inspection would be implemented. Things to consider: who/how many crew members, how would they access the site (i.e., walk to site, vehicle, all terrain vehicle), would new access be required, would restoration be required, etc.).	Section 2.8 Operation and Maintenance Section 2.8.1 Power Lines Section 2.8.2 Rob Roy Substation

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.8 Operation and Maintenance (cont.)	If additional full time staff would be required for operation and/or maintenance, provide the number of workers and for what purpose they are required.	Section 2.8 Operation and Maintenance Section 2.8.1 Power Lines Section 2.8.2 Rob Roy Substation
3.9 Applicant-Proposed Measures	If there are measures that the Applicant would propose to be part of the Proposed Project, include those measures and reference plans or implementation descriptions.	Section 2.10 Applicant-Proposed Measures Table 2-6: Applicant-Proposed Measures
Chapter 3: Environmental Setting		
	For each resource area discussion within the PEA, include a description of the physical environment in the vicinity of the Proposed Project (e.g., topography, land use patterns, biological environment, etc.), including the local environment (site-specific) and regional environment.	Section 3.X.3 under each resource area provides a discussion of both the physical environment in the vicinity of the project and the regulatory environment.
	For each resource area discussion within the PEA, include a description of the regulatory environment/context (federal, state, and local).	Section 3.X.3 under each resource area provides a discussion of both the physical environment in the vicinity of the project and the regulatory environment.
	Limit detailed descriptions to those resource areas which may be subject to a potentially significant impact.	Section 3.X.4 under each resource area provides a discussion of resources that may be subject to a potentially significant impact.
Chapter 5: Environmental Impact Assessment Summary		
5.1 Aesthetics	Provide visual simulations of prominent public view locations, including scenic highways, to demonstrate the views before and after project implementation. Additional simulations are highly recommended.	Figure 3.1-3: through Figure 3.1-14 depict existing views and visual simulations of the project area
5.2 Agriculture Resources	Identify the types of agricultural resources affected.	Section 3.2.4 Potential Impacts and Applicant-Proposed Measures
5.3 Air Quality	Provide supporting calculations/spreadsheets/technical reports that support emission estimates in the PEA.	Attachment 3.3-A: Project Emissions Calculation Methodology
	Provide documentation of the location and types of sensitive receptors that could be impacted by the Project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors are dependent on type of construction activity.	Section 3.3.3 Existing Conditions Section 3.3.4 Potential Impacts and Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.3 Air Quality (cont.)	Identify Proposed Project GHG emissions.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures Table 3.3-8: Unmitigated GHG Emissions from Construction Table 3.3-9: Mitigated GHG Emissions from Construction Table 3.3-10: CO_2E GHG Emissions from Construction
	Quantify GHG emissions from a business as usual snapshot. That is, what the GHG emissions will be from the Proposed Project if no mitigations were used.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures
	Quantify GHG emission reductions from every APM that is implemented. The quantifications will be itemized and placed in tabular format.	Section 3.3.4.4 Question 3.3b – Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Table 3.3-9: Mitigated GHG Emissions from Construction
	Identify the net emissions of the Proposed Project after mitigation have been applied.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures
	Calculate and quantify GHG emissions (CO_2 equivalent) for the Proposed Project, including construction and operation.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures
	Calculate and quantify the GHG reduction based on reduction measures proposed for the Proposed Project.	Section 3.3.4.4 Question 3.3b – Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Table 3.3-9: Mitigated GHG Emissions from Construction
	Propose APMs to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures
	Discuss programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the U.S. Environmental Protection Agency (EPA) SF_6 reduction program, reductions from energy efficiency, demand response, long-term procurement plan, etc.	Section 3.3.3 Existing Conditions Section 3.3.4 Potential Impacts and Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.3 Air Quality (cont.)	Ensure that the assessment of air quality impacts is consistent with PEA Section 3.7.5, as well as with the PEA's analysis of impacts during construction, including traffic and all other emissions.	Attachment 3.3-A: Project Emissions Calculation Methodology
5.4 Biological Resources	Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well.	Wetland delineations were not required for the project because no wetlands will be impacted by the project.
	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.	The Biological Resources Technical Report, California Red-Legged Frog Protocol-Level Survey Report, and Rare Plant Survey Report that were prepared for the project will be provided separately to CPUC staff.
5.5 Cultural Resources	Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation.	The Archaeological Survey Report will be provided separately to CPUC staff.
	Provide a copy of the records found in the literature search.	The cultural records found during the literature search will be provided separately to CPUC staff.
	Provide a copy of all letters and documentation of Native American consultation.	Copies of all correspondence with the NAHC and the Native American representatives will be provided to CPUC staff separately.
5.6 Geology, Soils, and Seismic Potential	Provide a copy of the geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	A geotechnical investigation has not yet been completed. However, a detailed discussion of geologic hazards is included in Section 3.6 Geology, Soils, and Mineral Resources.
5.7 Hazards and Hazardous Materials	Include an Environmental Data Resources report.	Section 3.7.4 Potential Impacts and Applicant-Proposed Measures The Hazardous Materials Database Search Records will be provided separately to CPUC staff.
	Include a Hazardous Substance Control and Emergency Response Plan, if required.	This plan is not required for the project.
	Include a Health and Safety Plan, if required.	This plan has not yet been prepared for the project. This plan is generally prepared prior to construction by the contractor when selected.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.7 Hazards and Hazardous Materials (cont.)	Describe the Worker Environmental Awareness Program.	Section 3.7.4 Potential Impacts and Applicant-Proposed Measures
	Describe which chemicals would be used during construction and operation of the Proposed Project. For example, fuels for construction, naphthalene to treat wood poles before installation, etc.	Section 3.7.4 Potential Impacts and Applicant-Proposed Measures Table 3.7-2: Hazardous Materials Typically Used for Construction
5.8 Hydrology and Water Quality	Describe impacts to groundwater quality including increased runoff due to construction of impermeable surfaces, etc.	Section 3.8.4 Potential Impacts and Applicant-Proposed Measures
	Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	Section 3.8.4 Potential Impacts and Applicant-Proposed Measures
5.9 Land Use and Planning	Provide GIS data of all parcels within 300 feet of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	The property owner information has been submitted under separate cover due to its confidential nature.
5.10 Mineral Resources	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not Applicable (NA)
5.11 Noise	Provide long-term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, etc.).	Section 3.9.4 Potential Impacts and Applicant-Proposed Measures
5.12 Population and Housing	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	NA
5.13 Public Services	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	NA
5.14 Recreation	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	NA
5.15 Transportation and Traffic	Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	Section 3.11.4 Potential Impacts and Applicant-Proposed Measures
	Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	A specific Traffic Management Plan is not proposed for this project because traffic impacts and road closures are expected to be minimal. Encroachment permits from local and state jurisdictional agencies will provide guidance on required traffic management measures.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.16 Utilities and Services Systems	Describe how treated wood poles would be disposed of after removal, if applicable.	Section 3.10.4 Potential Impacts and Applicant-Proposed Measures
5.17 Cumulative Analysis	Provide a list of projects (i.e., past, present, and reasonably foreseeable future projects) within the Proposed Project area that the applicant is involved in.	Table 4-1: Planned and Proposed Projects Within 1 Mile
	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.	Table 4-1: Planned and Proposed Projects Within 1 Mile
5.18 Growth-Inducing Impacts, If Significant	Provide information on the Proposed Project's growth- inducing impacts, if any.	Section 4.2 Growth-Inducing Impacts. The project will not result in any growth-inducing impacts.
	Provide information on any economic or population growth in the surrounding environment that will, directly or indirectly, result from the Proposed Project.	
	Provide information on any increase in population that could further tax existing community service facilities (e.g., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project.	
	Provide information on any obstacles to population growth that the Proposed Project would remove.	Section 4.2 Growth-Inducing Impacts. The project will not result in any growth-inducing impacts.
	Describe any other activities, directly or indirectly encouraged or facilitated by the Proposed Project, that would cause population growth that could significantly affect the environment, either individually or cumulatively.	
Chapter 6: Detailed Discussion of Significant Impacts		
6.1 Mitigation Measures Proposed to Minimize Significant Effects	Discuss each mitigation measure and the basis for selecting a particular mitigation measure should be stated.	Section 3.X.4 under each resource area provides a description of and basis for selecting each applicant-proposed measure. Section 2.10 Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.2 Description of Project Alternatives and Impact Analysis	Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project.	Section 5.3 Description and Analysis of Alternatives Section 5.3.1 Evaluated Alternatives Table 5-1: Alternatives Comparison Figure 5-1: Project Alternatives
	Alternatives considered and described by the Applicant should include, as appropriate, system or facility alternatives, route alternatives, route variations, and alternative locations.	Figure 5-1: Project Alternatives
	A description of a "No Project Alternative" should be included.	This PEA provides the alternatives discussion required by CPUC GO 131-D.
	If significant environmental effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the Proposed Project objectives and are more costly.	No significant environmental effects are anticipated after implementation of the APMs.
6.3 Growth-Inducing Impacts	Discuss if the Proposed Project would foster economic or population growth, either directly or indirectly, in the surrounding environment.	Section 3.10.4 Potential Impacts and Applicant-Proposed Measures Section 4.2 Growth-Inducing Impacts
	Discuss if the Proposed Project would cause an increase in population that could further tax existing community services (e.g., schools, hospitals, fire, police, etc.).	Section 3.10.4 Potential Impacts and Applicant-Proposed Measures Section 4.2. Growth-Inducing Impacts
	Discuss if the Proposed Project would remove obstacles to population growth.	Section 4.2 Growth-Inducing Impacts
	Discuss if the Proposed Project would encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively.	Section 4.2 Growth-Inducing Impacts

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions	Include a menu of suggested APMs that applicants can consider to address GHG emissions. Suggested APMs include, but are not limited to: 1. If suitable park-and-ride facilities are available in the Project vicinity, construction workers will be encouraged to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker show-up time and the Project's construction schedule. 2. To the extent feasible, unnecessary construction vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up that limit their availability for use following startup. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. 3. Use low-emission construction equipment. Maintain construction equipment per manufacturing specifications and use low-emission equipment described here. All offroad construction diesel engines not registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Sec. 2423(b)(1). 4. Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures A selection of these measures was included to reduce GHG emissions.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions (cont.)	5. Alternative Fuels: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel. 6. Alternative Fuels: Ethanol, increased use of ethanol fuel 7. Green Buildings Initiative. 8. Facility wide energy efficiency audit. 9. Complete GHG emissions audit. The audit will include a review of the GHG emitted from those facilities (substations), including carbon dioxide, methane, CFC, and HFC compounds (SF6). 10. There is an EPA approved SF6 emissions protocol (http://www.epa.gov/electricpowersf6/resources/index.html#three). 11. SF6 program wide inventory. For substations, keep inventory of leakage rates. 12. Increase replacement of breakers once leakage rates exceed one percent within 30 days of detection. 13. Increased investment in current programs that can be verified as being in addition to what the utility is already doing. 14. The SF_6 Emission Reduction Partnership for the Electric Power Systems was launched in 1999 and currently includes 57 electric utilities and local governments across the U.S. 15. SF6 is used by this industry in a variety of applications, including that of dielectric insulating material in electrical transmission and distribution equipment, such as circuit breakers. Electric power systems that join the Partnership must, within 18 months, establish an emission reduction goal reflecting technically and economically feasible opportunities within their company. They also agree to, within the constraints of economic and technical feasibility, estimate their emissions of SF6, establish a strategy for replacing older, leakier pieces of equipment, implement SF6 recycling, establish and apply proper handling techniques, and report annual emissions to the EPA. The EPA works as a clearinghouse for technical information, works to obtain commitments from all electric power system operators and will be sponsoring an international conference in 2000 on SF6 emission reductions.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures A selection of these measures was included to reduce GHG emissions.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions (cont.)	16. Quantify what comes into the system and track programmatically SF6. 17. Applicant can propose other GHG reducing mitigations.	Section 3.3.4 Potential Impacts and Applicant-Proposed Measures A selection of these measures was included to reduce GHG emissions.
Chapter 7: Other Process-Related Data Needs		
Noticing	Include an excel spreadsheet that identifies all parcels within 300 feet of any Proposed Project component with the following data: APN number, owner mailing address, and parcels physical address.	The property owner information will be provided separately to CPUC staff.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

CHAPTER 2 – PROJECT DESCRIPTION

This chapter describes the location, project objective, and construction methods for Pacific Gas and Electric Company's (PG&E's) proposed Santa Cruz 115 Kilovolt (kV) Reinforcement Project (project). This section also provides a detailed description of the project components that will be installed and/or modified as part of the project. This section has been prepared in accordance with the California Public Utilities Commission (CPUC) Proponent's Environmental Assessment Checklist, issued November 24, 2008.

2.1 PROJECT LOCATION

The project is located in southern Santa Cruz County, California, spanning the area roughly between the cities of Watsonville and Aptos. The project traverses an area of rolling terrain, including agricultural valleys and grassland, as well as low ridgelines forested with mature trees. The predominant development pattern throughout the project area is a mix of low-density residential, open space, and agricultural land uses. The agricultural areas are predominantly apple orchards, berry orchards, livestock pastures, and row crops.

The project is divided into the following four components: (1) Northern Alignment; (2) Cox-Freedom Segment; (3) Rob Roy Substation; and (4) Rob Roy Substation Connections. The locations of the components are depicted in Figure 2-1: Project Overview Map and Attachment 2-A: Detailed Route Maps. A description of each component is provided in the following subsections.

2.1.1 Northern Alignment

The Northern Alignment extends for 7.1 miles from Green Valley Substation to an existing pole located near the intersection of Cox Road and Leslie Lane. PG&E plans to rebuild the Northern Alignment by converting the existing single-circuit 115 kV power line to a double-circuit 115 kV power line. During the conversion process, the existing single-circuit wood poles will be replaced with double-circuit tubular steel poles (TSPs). The Northern Alignment originates at Green Valley Substation, located on Minto Road north of the City of Watsonville, approximately 0.3 mile east of Green Valley Road and approximately 0.4 mile east of Pinto Lake. From the substation, the line heads north for approximately 0.8 mile to Dalton Lane before turning west for approximately 0.7 mile and spanning Pinto Lake County Park. The line then heads northwest cross-country for approximately 1.6 miles, turns west for approximately 0.9 mile, then continues northwest for approximately 3.1 miles to an existing pole located near the intersection of Cox Road and Leslie Lane. The Green Valley-Camp Evers 115 kV Power Line continues to the City of Scotts Valley, but PG&E will rebuild only the portion of the line between Green Valley Substation and the existing pole located near the intersection of Cox Road and Leslie Lane.

The Northern Alignment is located within an existing 60-foot-wide easement centered on the existing alignment. The easement contains a building restriction limiting structures and uses that have the potential to conflict with the safe operation of the power line. This easement may be expanded in some locations to accommodate the rebuilt line; however, no existing structures will be affected. The present centerline of the building restriction will be maintained as feasible and

expansion will occur on an as-needed basis. The final limits of this expansion will be determined during final engineering.

2.1.2 Cox-Freedom Segment

The Cox-Freedom Segment extends for 1.7 miles from an existing pole of the Northern Alignment located near the intersection of Cox Road and Leslie Lane to Rob Roy Substation. PG&E plans to construct a new single-circuit 115 kV power line along this segment within an existing distribution line alignment using new TSPs and wood poles. New overhang easements will be acquired beyond the road franchise where necessary. These easements will typically vary in width from approximately 10 to 20 feet depending upon the limits of the county road franchise, but may expand up to 40 feet in some locations. Where appropriate, the existing distribution line will be collocated on the new poles. The project will not replace every distribution pole. Instead, TSPs and wood poles will be placed at span lengths of approximately 200 to 550 feet, skipping over intermediate distribution poles.

From an existing pole near the intersection of Cox Road and Leslie Lane, the new line will head south along Cox Road for approximately 0.3 mile, turn west along Day Valley Road for approximately 0.1 mile, and then extend south along McDonald Road for approximately 0.6 mile. The line will continue southwest along Freedom Boulevard for approximately 0.7 mile before entering Rob Roy Substation from the south.

2.1.3 Rob Roy Substation

Rob Roy Substation is located along Freedom Boulevard in the unincorporated community of Aptos, California. It is located on land owned by PG&E and bordered by rural residential development and undeveloped oak woodland and chaparral habitats. PG&E will modify Rob Roy Substation to accommodate the new power line. The modifications will begin with the conversion of the existing tap line bus configuration to a four-breaker ring bus arrangement using new steel structures. Modifications will also include the installation of the following:

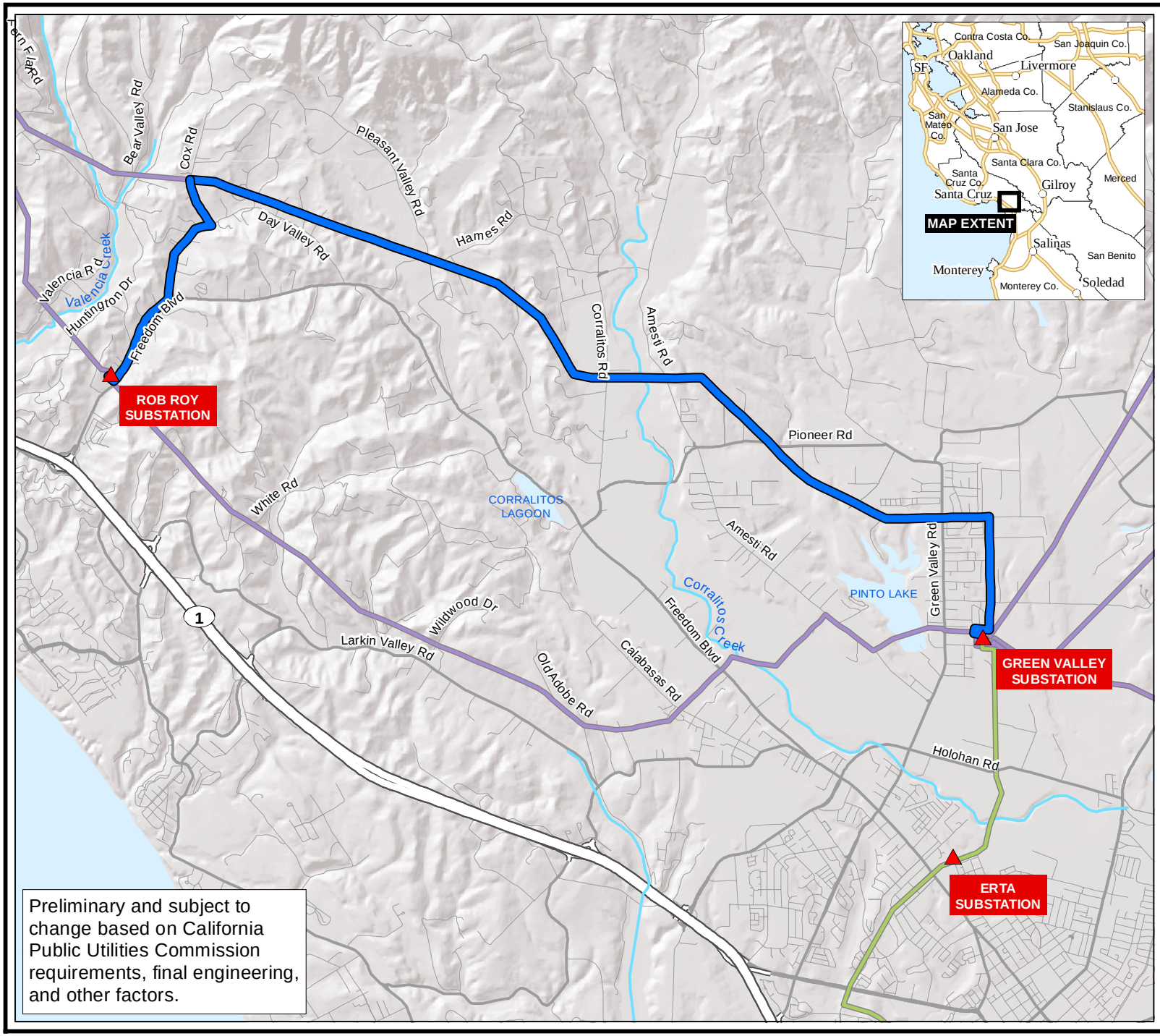
- 4 new 115 kV circuit breakers,
- 12 new 115 kV air break switches,
- 9 new 115 kV coupling capacitor-type voltage transformers,
- 2 new approximately 35-foot-tall dead-end take-off structures, and
- an approximately 30-foot by 16-foot control enclosure.

In order to maintain this new equipment, the existing ring road within the substation will be expanded. The substation's existing northeast fence line will be relocated approximately 50 feet northeast to accommodate these modifications; however, all work will be conducted on PG&E-owned substation property.

Figure 2-1: Project Overview Map

Santa Cruz 115 kV Reinforcement Project

Figure 2-1
Project Overview Map



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

- Existing Substation
- 115 kV Reinforcement Project Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line

0 0.5 1 Miles

Scale 1:60,000
when printed on 8.5x11 paper

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2.1.4 Rob Roy Substation Connections

Two existing 115 kV power lines currently connect to Rob Roy Substation—the Green Valley-Rob Roy Power Line and the Rob Roy-Paul Sweet Power Line. As described previously, Rob Roy Substation will be converted from a double-tap line bus configuration to a four-breaker ring bus arrangement. As part of the conversion process for the Rob Roy-Paul Sweet Power Line, one new TSP will be installed approximately 50 feet northwest of the substation. In addition, one existing wood pole structure located approximately 200 feet northwest of Rob Roy Substation will be replaced with a new TSP. For the Green Valley-Rob Roy Power Line, an existing wood pole structure adjacent to the southwest fence line will be replaced with a new TSP. The new structures associated with these connections will be located within PG&E's existing easement and/or on PG&E-owned land.

2.2 EXISTING SYSTEM

The project area's electrical power grid consists of two, single-circuit 115 kV wood pole power lines located in separate power line corridors—the Green Valley-Rob Roy-Paul Sweet Corridor on the south side of the service area, and the Green Valley-Camp Evers Corridor to the north. The two corridors join at the junction of the Camp Evers Tap. The substations that connect to these corridors include Green Valley Substation at the southeasterly end, Camp Evers Substation at the northwesterly end (from Camp Evers Tap), and Paul Sweet Substation and Rob Roy Substation along the southern corridor. All power to the project area comes from Green Valley Substation, which provides almost 100 percent of the Santa Cruz area loading and serves electric customers throughout Santa Cruz County.

PG&E's existing electrical system is depicted in Figure 2-2: Existing System Map and Figure 2-3: Existing System Schematic. The proposed system is depicted in Figure 2-4: Proposed System Schematic.

2.3 PROJECT OBJECTIVE

The objective of the project is to add a second 115 kV circuit between Green Valley Substation and Rob Roy Substation to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system.

As explained in Section 2.2 Existing System, electricity in the service area is transmitted along two power line corridors—the Green Valley-Rob Roy-Paul Sweet Corridor on the south side of the service area and the Green Valley-Camp Evers Corridor to the north. When equipment fails at a substation or along one of these corridors, electricity is rerouted to the area distribution substations via the alternate corridor. As the "impaired" system tries to serve all customers, the Santa Cruz area power system is at risk for overload or low voltage should another system element fail.

The existing 115 kV system serving the Santa Cruz area was updated and put into service during the 1970s. Since then, no major upgrades have been undertaken, with the exception of the addition in 1997 of voltage support equipment at Paul Sweet Substation to help improve local system voltages. In the 1970s, the population served by this system totaled approximately 50,000

people, and peak electrical demand was less than 110 MW. Today, the service area has a population of approximately 90,000, nearly double that of 1970. According to records of daily peak loads from 2004 to 2010, the area has a summer peak demand of about 145 MW, which is 30 percent larger than in 1970. Winter peak demand has reached 175 MW, which is almost 60 percent higher than the demands recorded in 1970.

An outage in the voltage support equipment installed at Paul Sweet Substation can take weeks to diagnose and repair. Should there be an overlapping outage of the southern 115 kV line between Green Valley Substation and Rob Roy Substation, the remaining northern 115 kV line will be heavily loaded. If this event occurs during a winter peak demand period, the northern 115 kV line will be loaded to 95 percent of its winter emergency rating and area voltages will be below minimum acceptable operating levels. Even with the voltage support equipment in-service, a single outage of the southern 115 kV line will result in the northern line loading up to 90 percent of its emergency rating. An overlapping outage of the voltage support equipment and the northern 115 kV line during winter peak conditions will result in the southern line loading to more than 90 percent of its emergency rating. One method to reduce the load in these situations is to cut power to customers in the service territory.

The project will provide better system reliability and increase operational flexibility and overall system capacity. The new circuit will provide two sources of power to flow from Green Valley Substation to Rob Roy Substation in the event of an outage of the southern line between Green Valley Substation and Rob Roy Substation or an outage of the existing northern line between Green Valley Substation and Camp Evers Substation. With the completion of these system upgrades, the area transmission system will have sufficient capacity for many years. Outages of two 115 kV lines from Green Valley Substation or overlapping outages of voltage support equipment and a line will not result in overloads or low voltages.

In addition, the second circuit along the Green Valley-Camp Evers Corridor will also increase the reliability of electrical service in the region during contingency situations. The replacement of the single-circuit wood pole power line with a double-circuit TSP line, which is supported by concrete foundations, increases the capability of the line structures to withstand strong storm conditions that occur during the winter peak loading months.

2.4 PROJECT DESCRIPTION

The project includes the following four components, which are more fully described in the subsections that follow:

1. Northern Alignment – approximately 7.1 miles of an existing single-circuit 115 kV power line will be converted to a double-circuit 115 kV power line by replacing existing wood poles with TSPs.

2. Cox-Freedom Segment – a new, approximately 1.7-mile-long single-circuit 115 kV power line connecting the Green Valley-Camp Evers 115 kV Power Line to Rob Roy Substation will be constructed in an existing distribution line alignment by installing new poles and collocating some existing distribution facilities.

Figure 2-2: Existing System Map

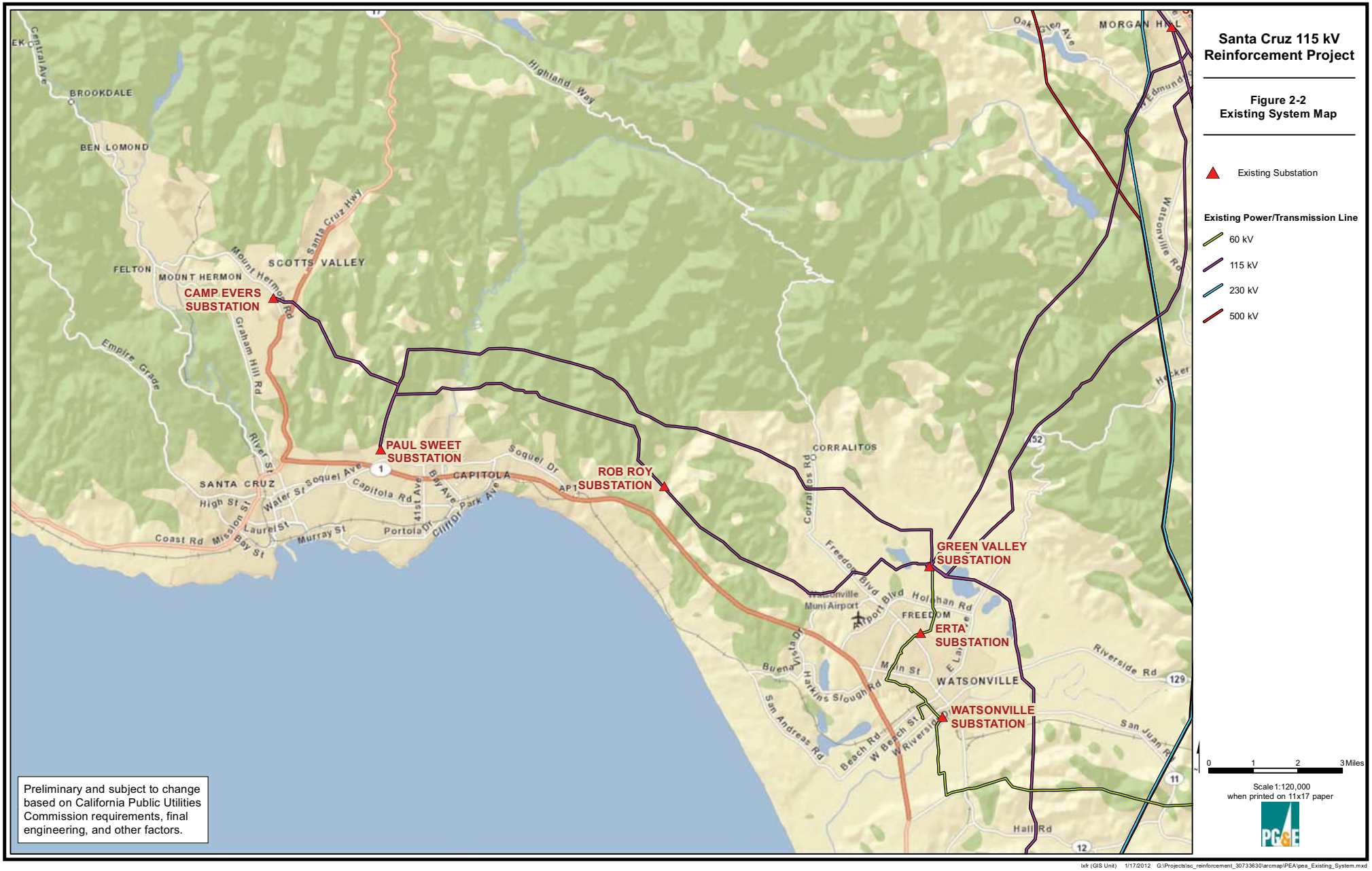
Santa Cruz 115 kV Reinforcement Project
Figure 2-2
Existing System Map
Existing Substation
Existing Power/Transmission Line
60 kV
115 kV
230 kV
500 kV
CAMP EVERS SUBSTATION
PAUL SWEET SUBSTATION
ROB ROY SUBSTATION
GREEN VALLEY SUBSTATION
ERTA SUBSTATION
WATSONVILLE SUBSTATION
BROOKDALE
BEN LOMOND
FELTON
MOUNT HERMON
SCOTTS VALLEY
SANTA CRUZ
CAPITOLA
CORRALITOS
WATSONVILLE
MORGAN HILL
Highland Way
Soquel Dr
Soquel Ave
Capitola Rd
Graham Hill Rd
Mount Hermon Rd
Santa Cruz Hwy
Empire Grade
River St
Water St
High St
Mission St
Bay St
Laurel St
Coast Rd
Murray St
Portola Dr
Cliff Dr
Park Ave
41st Ave
Bay Ave
Corralitos Rd
Freedom Blvd
Airport Blvd
Holohan Rd
Watsonville Muni Airport
Main St
Riverside Rd
Buena Vista Dr
Harkins Slough Rd
San Andreas Rd
Beach Rd
W Beach St
San Juan Rd
Hall Rd
Watsonville Rd
Oak Glen Ave
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
0 1 2 3 Miles
Scale 1:120,000
when printed on 11x17 paper
lxfr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_Existing_System.mxd

Figure 2-3: Existing System Schematic

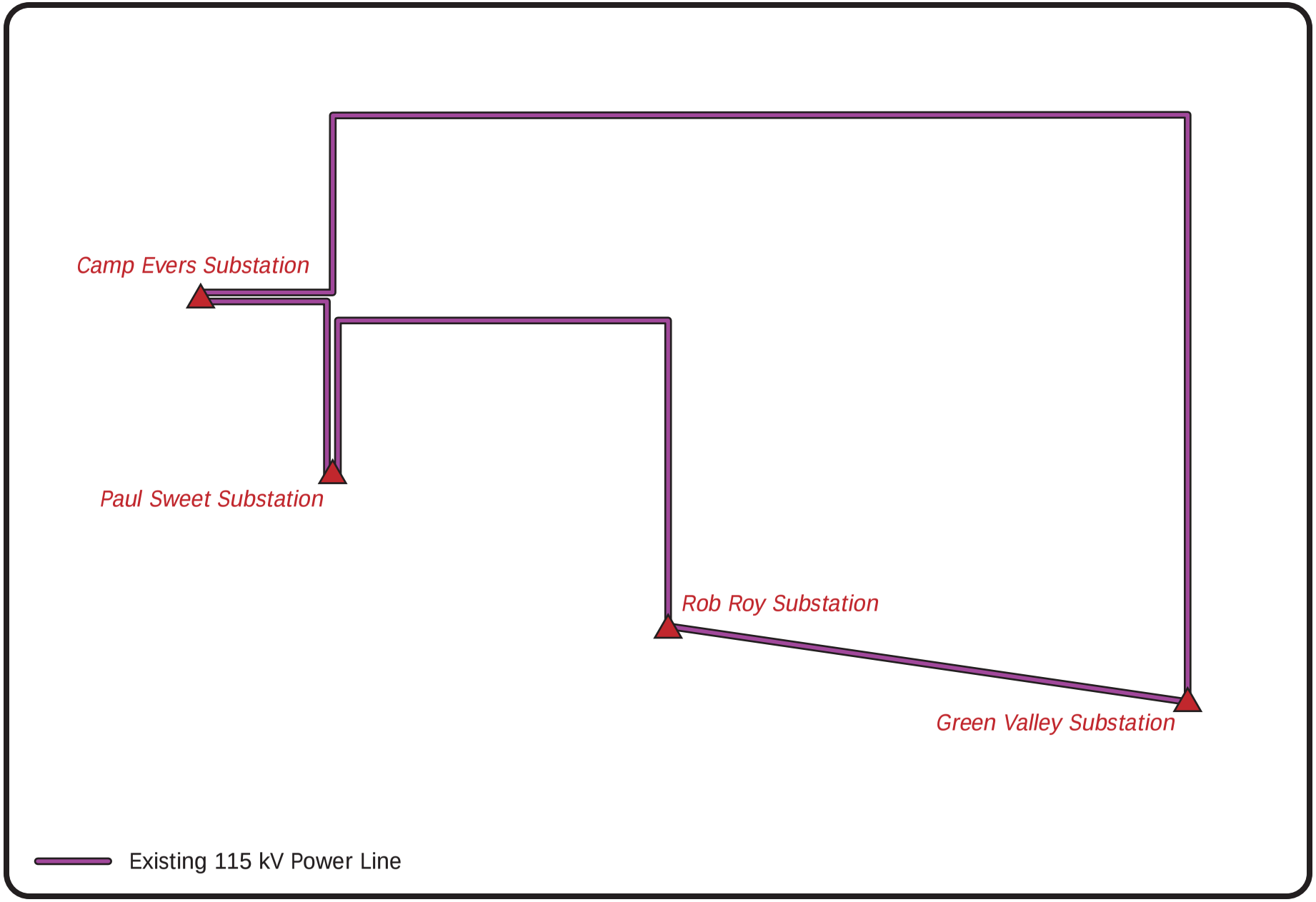

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Figure 2-3: Existing System Schematic

Figure 2-4: Proposed System Schematic

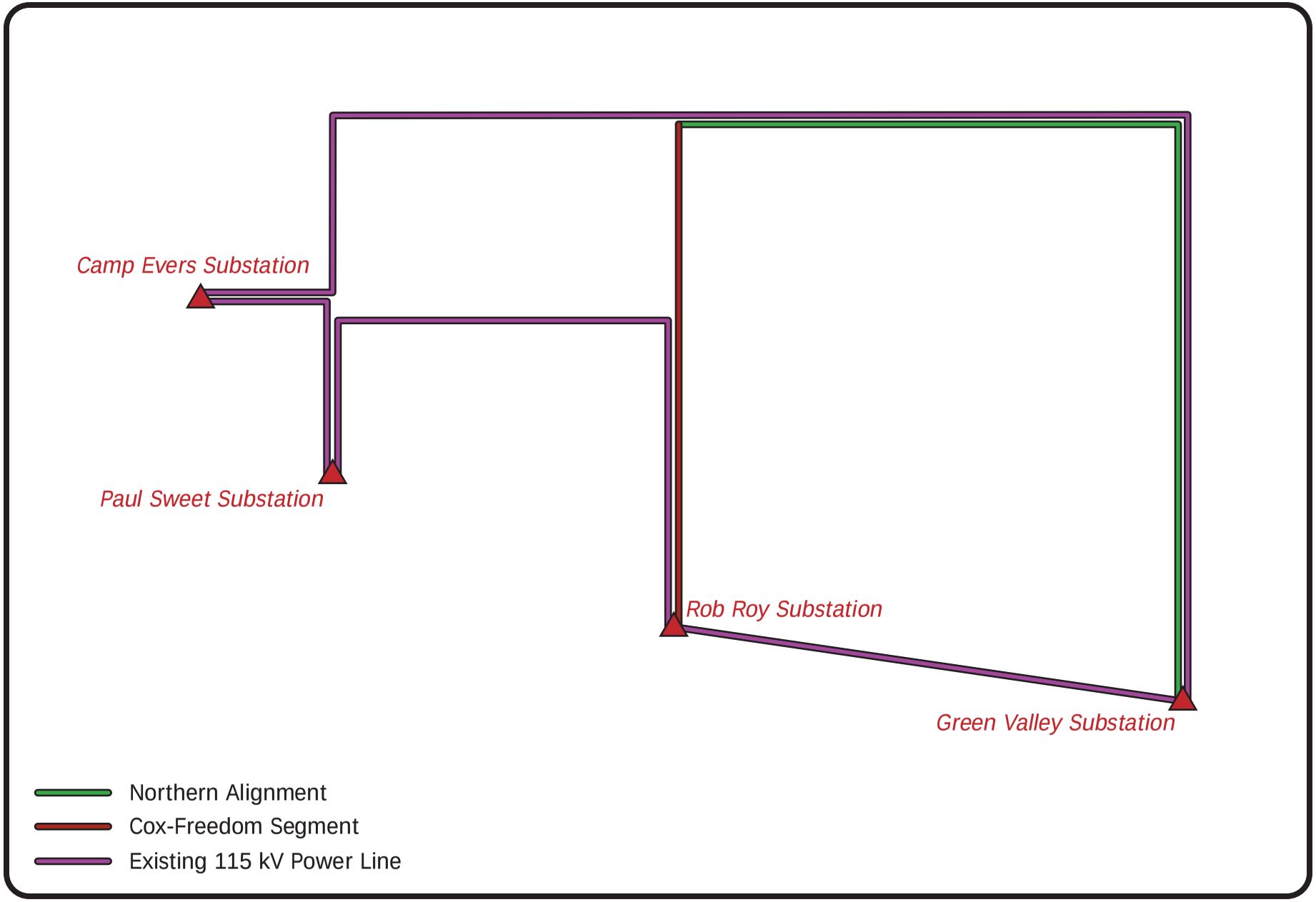

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Figure 2-4: Proposed System Schematic

3. Rob Roy Substation Modification – the existing substation will be modified to accommodate the new circuit

4. Rob Roy Substation Connections – one new TSP will be installed and two existing power poles will be replaced with TSPs to accommodate the interconnection of existing power lines following modification of Rob Roy Substation

The Santa Cruz 115 kV Reinforcement Project is a stand-alone project; there are no foreseeable future phases or projects that are currently connected to or associated with the construction, operation, or maintenance of the project or any of its components. Reconstructing Green Valley Substation to a breaker-and-a-half operating scheme is presently under engineering and scheduled for construction during 2012 and 2013. This reconstruction is not required to support the proposed project as the Green Valley Substation currently contains line and breaker positions to accommodate the proposed new circuit.

2.5 PROJECT COMPONENTS

2.5.1 Northern Alignment

The Northern Alignment will consist of approximately 7.1 miles of double-circuit 115 kV line on new TSPs. As part of the project, PG&E will remove poles at approximately 62 locations and top[1] approximately 12 poles. Each of these locations have 1 to 3 existing 35-foot to 77-foot-tall wood poles, which currently carry the single-circuit 115 kV power line. As summarized in Table 2-1: Proposed Pole Summary Table, approximately 72 TSPs will replace the existing wood pole locations at a ratio of approximately 1 to 1. The new TSPs will have a maximum height of approximately 100 feet, and will have span lengths between approximately 250 and 1,600 feet.

The TSPs will typically be placed in line with the existing conductor and within 20 feet of the existing wood poles.[2] These poles will have an approximate diameter of 4 feet at the base and 2 feet at the tip. Tangent poles will be used when the pole alignment continues in a generally straight line and angle poles will be used when the run of poles changes direction. All TSPs will be installed on concrete foundations measuring approximately 4 to 7 feet in diameter and approximately 20 feet below grade. The top of each foundation will be installed approximately 2 feet above grade. Typical drawings of each type of pole that will be installed have been provided in Figure 2-5: Typical Pole Drawings. Tangent and angle pole heights will range from approximately 54 to 100 feet. The majority of the project has been designed to conform to the suggested guidelines in the following documents:

- Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 – Avian Power Line Interaction Committee (APLIC), 1994

[1] Topping a pole involves removing the existing 115 kV conductors and hardware, removing the top of the pole, and leaving the existing distribution underbuild intact. Pole topping is discussed in more detail in Section 2.7.8.1 Construction Methods.

[2] Pole locations are based upon preliminary engineering data. The final pole locations will be determined during final engineering. In some locations, the proposed poles may be located more than 20 feet from existing locations to avoid sensitive resources, due to local terrain conditions, or due to engineering considerations. In locations where a large change of conductor direction is required, two TSPs separated by up to 45 feet may be used.

Table 2-1: Proposed Pole Summary Table

Action/Project Component	Pole Type				
	TSP	Wood	Stub	Distribution	Third-Party Cable[3]
Add					
Northern Alignment	72	- -	- -	- -	- -
Cox-Freedom Segment	4	21	7	3	- -
Rob Roy Substation Connections	3	- -	- -	- -	- -
Remove					
Northern Alignment	- -	62	- -	- -	- -
Cox-Freedom Segment	- -	- -	4	19	3
Rob Roy Substation Connections	- -	3	- -	- -	- -
Retain					
Northern Alignment	- -	- -	- -	4	- -
Cox-Freedom Segment	- -	- -	- -	31	- -
Rob Roy Substation Connections	- -	- -	- -	- -	- -
Top					
Northern Alignment	- -	- -	- -	12	- -
Cox-Freedom Segment	- -	- -	- -	- -	- -
Rob Roy Substation Connections	- -	- -	- -	- -	- -

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

[3] In three locations, third-party cable will be moved onto PG&E power line poles.

Figure 2-5: Typical Pole Drawings

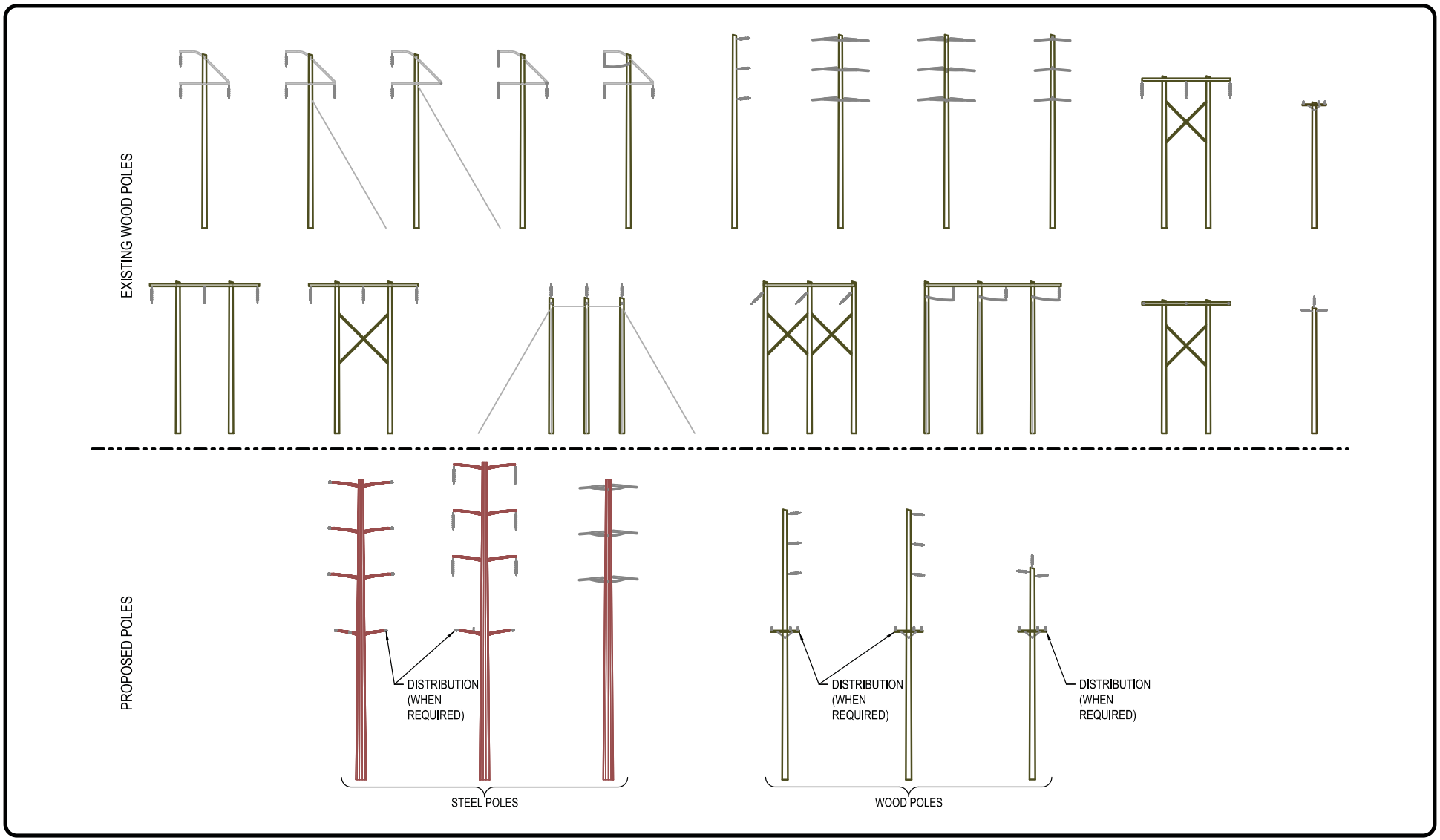

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Figure 2-5: Typical Pole Drawings

- Avian Protection Plan Guidelines – APLIC and U.S. Fish and Wildlife Service, April 2005
- Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 – APLIC, 2006

The project's final design and installation will reflect these suggested guidelines; however, no 115 kV insulators have been manufactured that meet the recommended 71-inch horizontal phase to ground clearance guideline. As a result, the project will not conform to this suggested guideline.

Each TSP will be configured to carry six individual 954 kcmil[4] (1.124-inch diameter) all-aluminum conductor (AAC) "Magnolia" conductors. Three conductors will be installed on each side of the TSPs and will be arranged in a vertical configuration for raptor protection. The overhead conductor will be attached to the transmission poles using six non-reflective grey porcelain insulators installed on each TSP. The new conductors will be installed with a minimum vertical and horizontal separation of approximately 8 feet. In accordance with General Order 95, the lowest conductor will be installed at least 30 feet above the ground.

2.5.2 Cox-Freedom Segment

The Cox-Freedom Segment will consist of approximately 1.7 miles of single-circuit 115 kV power line supported by new TSPs and wood poles within an appropriate easement designed to conform to GO 95 specifications. As part of the project, PG&E will remove approximately 19 existing 20- to 72-foot-tall wood distribution poles. Approximately 26 new power line poles, which will typically replace every third existing wood distribution pole, will be installed. The poles will generally be in line with the existing distribution line and within 20 feet of the wood poles being replaced.[2] The existing distribution line will be collocated on the new structures where appropriate.

As summarized in Table 2-1: Proposed Pole Summary Table, the Cox-Freedom Segment will be supported by approximately 25 new poles—approximately 21 wood poles and 4 TSPs—that will have an average span length between approximately 200 and 550 feet. The wood poles and TSPs will have an average installed height of approximately 85 feet and 91 feet, respectively. TSPs will typically be used at angle points where the transmission line must change direction, while wood poles will typically be installed in locations where the alignment is generally straight. In locations where additional support for wood poles is required due to line tension or local terrain, stub poles and guy wires will be installed. Similar to the Northern Alignment, the new TSPs will be installed on concrete foundations measuring approximately 4 to 7 feet in diameter and approximately 15 to 33 feet below grade. The concrete foundations will be installed approximately 2 feet above grade. The new wood poles will be direct buried with setting depths of approximately 10 percent of the installed pole height plus 2 feet. Stub poles will be installed at an approximate depth of 5 feet. Typical drawings of each type of pole that will be removed or installed are depicted in Figure 2-5: Typical Pole Drawings. As described previously, poles will be designed and installed to conform with APLIC suggested guidelines to the extent possible.

[4] A circular mil is a unit equal to the area of a circle whose diameter is 1 mil (0.001 inch); used chiefly in specifying cross-sectional areas of round conductors. One kcmil is a thousand circular mils.

The Cox-Freedom Segment will utilize three individual 954 kcmil AAC Magnolia conductors. The existing distribution conductors that will be collocated on the new poles are generally 2 gauge copper or 715.5 kcmil aluminum with diameters of approximately 0.414 inch and 0.974 inch, respectively. The Cox-Freedom Segment conductors will be attached to the power poles using three non-reflective grey composite or porcelain insulators at each pole. The conductors will be separated by a minimum vertical distance of 8 feet. The lowest power line conductor will be installed at least 25 feet above the ground. In instances where distribution conductors are collocated on the power line poles, the distribution conductors will be installed approximately 8 feet below the lowest 115 kV conductor; a minimum ground clearance for the distribution conductors of 25 feet will be maintained. The ground clearance and conductor separation distances have been designed to comply with General Order 95.

2.5.3 Rob Roy Substation Modification

The fenced area of Rob Roy Substation measures approximately 265 feet by 230 feet and occupies approximately 1.40 acres. The substation is currently enclosed by an approximately 8-foot-tall chain-link fence topped with approximately 1 foot of three-stranded barbed wire. The substation is accessed by an approximately 465-foot-long and 20-foot-wide paved access road from Freedom Boulevard, as shown in Attachment 2-A: Detailed Route Maps. As described previously, PG&E will install new components to create a new 4-ring bus, including 4 new 115 kV circuit breakers, 12 new 115 kV air break switches, 9 new 115 kV coupling capacitor-type voltage transformers, 2 new approximately 35-foot-tall dead-end take-off structures, and an approximately 30-foot by 16-foot control enclosure. The new components are summarized in Table 2-2: Rob Roy Substation Modification Summary. PG&E will expand the existing north and east fence line approximately 50 feet to accommodate the modifications to the substation. In addition, the existing network of access roads within the substation will be expanded to surround the new components. The substation's proposed layout is depicted in Figure 2-6: Rob Roy Substation Layout Drawing, and Figure 2-7: Rob Roy Substation Profile Drawing, respectively.

Table 2-2: Rob Roy Substation Modification Summary

Component	Quantity	Function
115 kV Circuit Breaker	4	Designed to automatically protect an electrical circuit from damage caused by overload or short circuit. Its basic function is to detect a fault condition and, by interrupting continuity, to immediately discontinue electrical flow.
115 kV Air Break Switch	12	Designed to break an electrical circuit, interrupting the current or diverting it from one conductor to another.
115 kV Dead-End Take-Away Structures	2	Serves as the link between the substation and the 115 kV power line.
Coupling Capacitor-type Voltage Transformer	9	Used to step down extra high-voltage signals, provide a low voltage signal for measurement purposes, or to operate a relay.
Control Enclosure	1	Houses an assembly of equipment used to control the substation, collect data, and improve reliability and performance.

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

Figure 2-6: Rob Roy Substation Layout Drawing

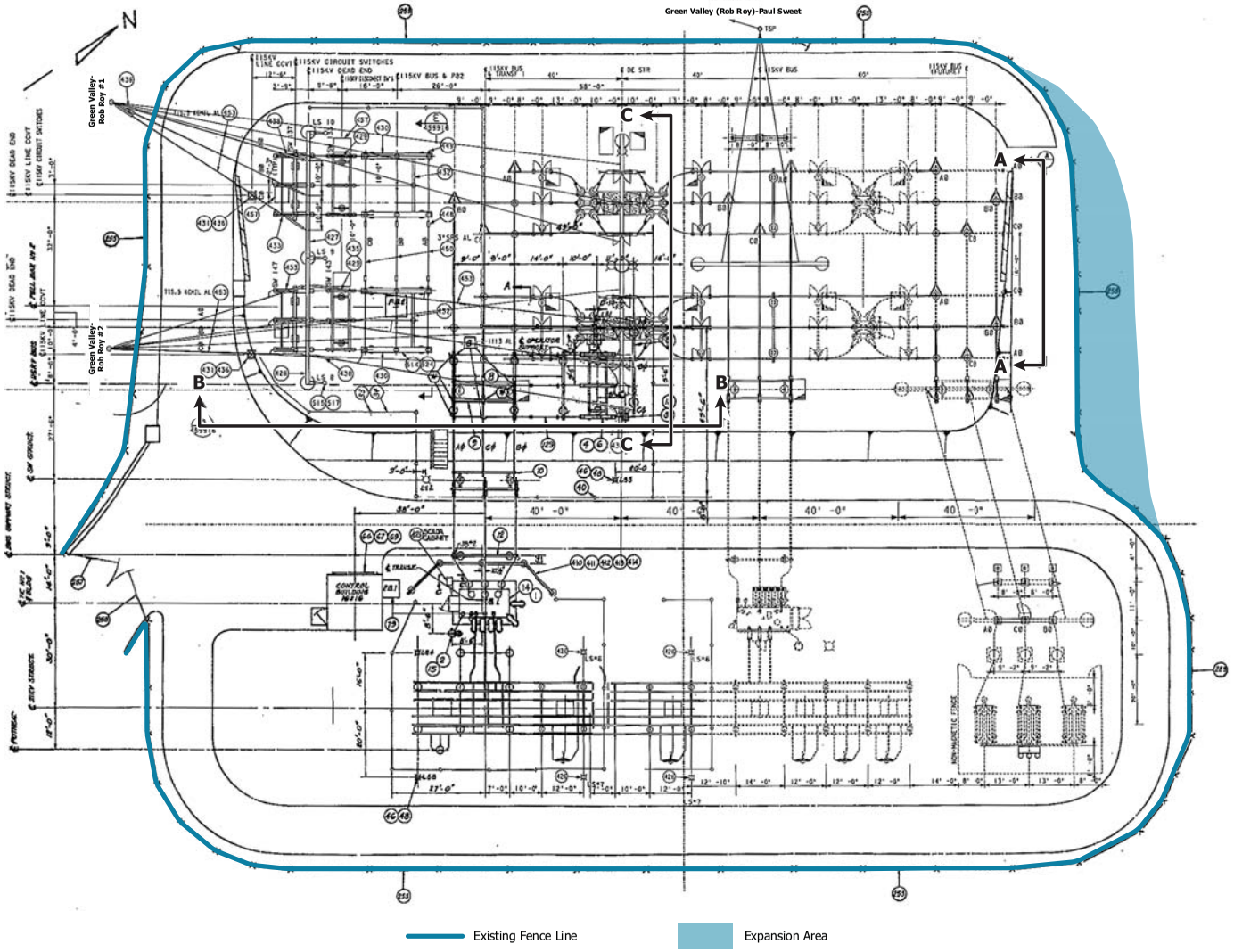
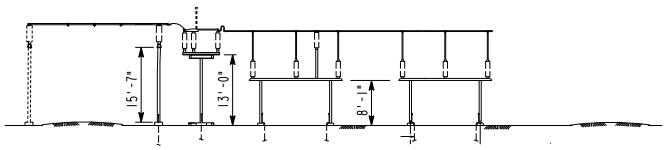
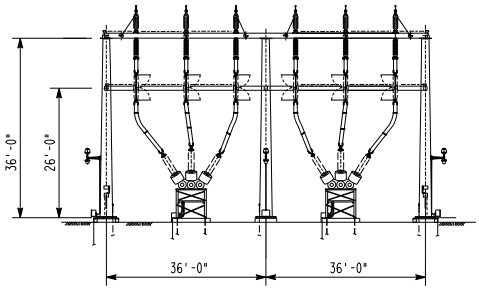


Figure 2-6: Rob Roy Substation Layout Drawing

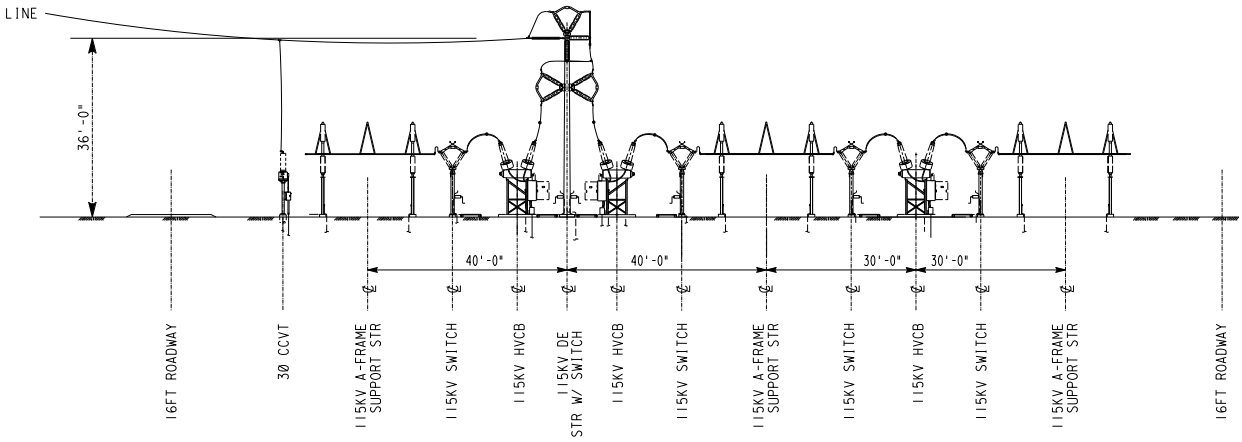
Figure 2-7: Rob Roy Substation Profile Drawing



SECTION A
SCALE: NONE



SECTION C
SCALE: NONE



SECTION B
SCALE: NONE

Pacific Gas and Electric Company®

Figure 2-7: Rob Roy Substation Profile Drawing

2.5.4 Rob Roy Substation Connections

As described previously, one new TSP will be installed and two existing poles will be replaced with TSPs in order to facilitate connecting two existing power lines to the modified Rob Roy Substation. The new TSPs will be similar to those described in Section 2.5.1 Northern Alignment.

2.6 PERMANENT LAND/RIGHT-OF-WAY REQUIREMENTS

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. Rather, any land rights issues will be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the CPUC on PG&E's application (see, for example, Jefferson-Martin 230 kV Transmission Project, A.02-04-043, D.04-08-046, p. 85).

In order to accommodate the additional 115 kV circuit, additional ROW will be required in some locations. The location of the new poles will typically be the centerline of the existing or expanded ROW. Final pole locations may not be known until the final engineering phase of the project and, as a result, the edge of the ROW may be adjusted to accommodate some pole locations. PG&E owns the parcel on which the Rob Roy Substation is located, so no new substation property will be required. A preliminary discussion of foreseen additional ROW requirements follows.

2.6.1 Northern Alignment

According to preliminary calculations, the Northern Alignment's existing 60-foot-wide building restriction appears to be sufficient for 62 of the 72 spans. The easement will be expanded or modified in the remaining locations in order to accommodate the operation and maintenance (O&M) of the new double-circuit line. Additional ROW may be required to accommodate the sway of the conductor and other design factors. The final ROW limits will be determined during the final engineering phase.

2.6.2 Cox-Freedom Segment

The Cox-Freedom Segment will replace existing poles located along the road shoulder, primarily in the county road franchise that PG&E presently occupies. However, an additional easement width of 20 feet may be necessary for construction of the Cox-Freedom Segment. As a result, PG&E may acquire approximately 4.4 acres of new permanent overhang ROW for this segment. Design considerations may require the ROW to be larger than 40 feet wide in some locations and the final ROW limits will be determined during the final engineering phase.

2.6.3 Rob Roy Substation Connections

The new TSPs that will be used to facilitate the connection of existing power lines to Rob Roy Substation will be installed on PG&E-owned land or within ROWs currently maintained by PG&E. As a result, no new property will be required.

2.7 CONSTRUCTION

Prior to initiating construction, PG&E will contact the Underground Service Alert prior to the start of ground-disturbing activities in order to identify underground utilities in the immediate area. Construction will proceed as described in the following subsections.

2.7.1 Access Roads/Overland Access Routes

Construction crews, materials, and equipment will primarily access the project site by using State Route (SR) 1 and either traveling along Green Valley Road from Watsonville or traveling along Freedom Boulevard, McDonald Road, and Cox Road from SR-1.

In addition to using a system of existing roads, PG&E may also grade or mow new temporary unpaved roads or travel overland in order to provide access to the pole locations along the Northern Alignment. Typical construction equipment required for the construction of unpaved roads includes a grader, compactor, and haul trucks. Some poles may also be accessed on foot if sensitive resources preclude the used of heavy equipment. An overview of the access roads that are currently planned to be used during the construction of the project is provided in Table 2-3: Access Summary Table, and these roads are depicted in Attachment 2-A: Detailed Route Maps. Minor adjustments may be necessary at the time of construction due to land-use changes, unanticipated impacts, and other factors. Work along the Cox-Freedom Segment will typically occur from the road shoulder; therefore, no access roads will be required. Additional access requirements by project component are described in the sections that follow.

2.7.1.1 Northern Alignment

Access to the Northern Alignment will be accomplished on existing paved roads, a network of existing unpaved access roads, and overland access routes that will be established during site-preparation activities. Approximately 1.5 miles of existing paved roads and 3.7 miles of existing unpaved roads will be used during construction. Approximately 0.2 mile of existing unpaved roads will be improved prior to construction. In addition to the existing access roads in the area, PG&E plans to use approximately 2.0 miles of overland access routes. No new access roads will be created for the construction of the Northern Alignment.

2.7.1.2 Cox-Freedom Segment

Access to the Cox-Freedom Segment will be primarily provided by paved public roads—Cox Road, McDonald Road, and Freedom Boulevard—that are currently used to access the existing distribution line. Approximately 300 feet of existing unpaved access roads and approximately 280 feet of overland access routes will also be used during construction. No new access roads or improvements to existing roads will be required to construct the Cox-Freedom Segment.

2.7.1.3 Rob Roy Substation

Access to Rob Roy Substation will be on an existing approximately 520-foot-long, 20-foot-wide access road from Freedom Boulevard. No improvements will be made to this paved road.

Table 2-3: Access Summary Table

Type of Road	Project Component to be Accessed[5]	Road Surface/Improvements	Approximate Width (feet)	Approximate Length (feet)	Total Approximate Area (acres)
Existing Paved	Northern Alignment	No improvements will be required.	10	8,150	1.9
	Cox-Freedom Segment		N/A	N/A	0.0
	Rob Roy Substation Modification		20	520	0.2
Existing Unpaved	Northern Alignment	No improvements will be required.	20	19,750	9.1
	Cox-Freedom Segment		20	300	0.1
	Rob Roy Substation Modification		N/A	N/A	0.0
Improved Unpaved[6]	Northern Alignment	Grading and vegetation removal may occur as necessary.	12	1,150	0.3
	Cox-Freedom Segment		N/A	N/A	0.0
	Rob Roy Substation Modification		N/A	N/A	0.0
Overland Route[7]	Northern Alignment	Vegetation removal may occur as necessary for fire-prevention purposes.	12	10,325	2.8
	Cox-Freedom Segment		12	280	0.1
	Rob Roy Substation Modification		N/A	N/A	0.0

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

[5] Access to the TSPs that will be installed as part of the connections to Rob Roy Substation have been included in the summary for the Cox-Freedom Segment.
[6] Improved unpaved access roads will generally be 12 feet wide but may be expanded to 15 feet around corners to allow safe access by construction equipment.
[7] Overland routes will generally be 12 feet wide but may be expanded to 15 feet around corners to allow safe access by construction equipment.

2.7.1.4 Rob Roy Substation Connections

Information on access to the three TSPs that will be installed as part of the connections to Rob Roy Substation has been included in Section 2.7.1.2 Cox-Freedom Segment.

2.7.2 Helicopter Access

Helicopters with a maximum payload capacity of approximately 4,000 pounds will be used to assist with the installation of new poles in areas along the Northern Alignment where limited access or local terrain conditions prohibit the work from being conducted by ground-based crews and equipment. One helicopter may also be used during the conductor installation and removal activities. As described in Section 2.7.3 Staging Areas/Landing Zones, approximately two landing zones will be established for the staging and refueling of the helicopter. Watsonville Airport may also be used during construction for operation of the helicopter.

Typical pay loads will include, but not be limited to, wood poles, TSP segments, sock lines, power line hardware, crew members, and equipment. PG&E has preliminarily identified the designated landing zones adjacent to the existing power line alignment and will typically limit helicopter operation to avoid sensitive receptors. Hours of helicopter operation will be limited to those allowed by local regulations and ordinances, and will occur during the proposed construction hours as described further in Section 2.7.10 Schedule.

PG&E best management practices (BMPs) will be implemented at the landing zones in order to reduce potential impacts to air quality, hazards and hazardous materials, and noise. These specific measures are discussed in detail in Section 3.3 Air Quality and Greenhouse Gas Emissions, Section 3.7 Hazards and Hazardous Materials, and Section 3.9 Noise, respectively.

2.7.3 Staging Areas/Landing Zones

The project will utilize approximately two primary staging areas, as preliminarily identified in Attachment 2-A: Detailed Route Maps. These approximately 300-foot by 300-foot areas—approximately 4.1 acres total—will be used to store construction materials and equipment as they arrive on site. In addition, construction trailers will be mobilized to these areas for use during construction. Temporary power will be brought to the trailers by tapping into distribution lines located adjacent to the staging areas. This temporary power will be used for the operation of the construction trailers and lighting. These sites may also be used to stage and refuel the helicopter used during construction activities.

The staging areas may be relocated or adjusted as necessary at the time of construction due to land-use changes, unanticipated impacts, and other factors. They will be located in previously disturbed areas and thus will require minimal grading or other preparation. Depending upon substrate conditions, a layer of gravel may be spread over the staging areas to control mud or other track-out. For security purposes, approximately 6-foot-tall chain-link fences, with approximately 1 foot of barbed wire, will be installed around the perimeter of the staging areas. Locking gates will also be installed to control access. During conductor stringing operations, 24-hour security guards may be used to enhance security at the site.

2.7.4 Contractor Storage Yards

One contractor storage yard has been preliminarily identified for use during construction of the project. Additional yards may be identified for use prior to construction. These yards will be reviewed for sensitive resources to ensure avoidance prior to use. Any contractor storage will be located in previously disturbed areas and thus will not require grading or other preparation. These areas will be used to store construction materials and equipment throughout the construction phase of the project. Temporary power will be brought to these work areas by tapping into adjacent distribution lines. Depending upon substrate conditions, a layer of gravel may be spread over the staging areas to control mud or other track-out.

The preliminarily identified contractor storage yard will be located adjacent to the east fence line of Green Valley Substation within property owned by PG&E. This approximately 540-foot by 140-foot area is depicted in Attachment 2-A: Detailed Route Maps. Prior to use, an approximately 6-foot-tall chain-link fence, with approximately 1 foot of barbed wire, will be installed around the perimeter of this yard. A locking gate will also be installed to control access.

Project construction materials may also need to be stored prior to mobilization to the project area; these materials may be stored at existing PG&E facilities. In addition, PG&E personnel may report to existing PG&E offices or yards during construction.

2.7.5 Work Areas

Several temporary work areas will be established in order to facilitate construction of the project. A summary of the preliminary locations of these temporary work areas and their dimensions are provided in Table 2-4: Temporary Work Area Table Summary. These temporary work areas are also described in further detail in the sections that follow. The precise locations of these temporary work areas may change as necessary at the time of construction due to land-use changes, unanticipated impacts, and other factors.

2.7.5.1 Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections

Crossing Structure Work Areas

Prior to removing the existing conductors along the Northern Alignment, within the Cox-Freedom Segment ROW, and at the Rob Roy Substation, temporary crossing structures—typically consisting of either vertical wood poles with cross arms or staged construction equipment—will be installed or mobilized at crossings of energized electric lines, communication facilities, and/or major roadways to prevent the conductors from sagging onto other lines or roads during removal or installation. In order to accommodate the installation of a crossing structure, PG&E will establish a work area—measuring an estimated 55 feet by 40 feet and 110 feet by 90 feet—at each proposed crossing. The locations of these crossings are depicted in Attachment 2-A: Detailed Route Maps.

Pole Work Areas

Approximately 78 pole work areas will be required to construct the Northern Alignment, approximately 37 pole work areas will be necessary to construct the Cox-Freedom Segment, and approximately 3 pole work areas will be required to install the Rob Roy Connections. Work areas—between approximately 10 feet in diameter and 140 feet long and 100 feet wide—

Table 2-4: Temporary Work Area Table Summary

Project Component	Workspace Description	Quantity	Required Improvements	Approximate Average Dimensions/Size per Site (feet)	Approximate Area (acres)
Northern Alignment	Pole Work Area[8]	78	Vegetation removal and minor grading may be required.	140 by 100	15.0
	Crossing Structure	15	Vegetation removal may be required.	75 by 70[9]	0.7
	Pull Site	5	Vegetation removal and minor grading may be required.	460 by 210	6.3
	Staging Area/Landing Zone	2	None	300 by 300	4.2
Cox-Freedom Segment	Pole Work Area[8]	37	Vegetation removal and minor grading may be required.	20-foot-diameter	0.5
	Pull Site[10]	4	Vegetation removal may be required.	115 by 70	0.2
Rob Roy Substation Modification	Substation Work Area[11]	1	Vegetation removal may be required.	565 by 20	0.3
Rob Roy Substation Connections	Pole Work Area[8]	3	Vegetation removal and minor grading may be required.	10- to 100-foot-diameter	0.4
All	Contractor Storage Yard	1	None	550 by 125	1.3
Total	- -	- -	- -	- -	**28.9**

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

[8] Pole work areas have also been included for the installation of stub poles for guying.
[9] Three typical crossing structure work area designs will be used during construction. The maximum dimensions of these three designs have been averaged.
[10] Approximately three of the four pull sites that will be used to install the conductors along the Cox-Freedom Segment will be located within paved public road ways. As a result, they have not been included in the total area but are depicted in Attachment 2-A: Detailed Route Maps.
[11] The substation work area will be located along the northwest and northeast perimeter of the substation.

established near each existing and proposed pole location will be used to stage construction materials and equipment, totaling approximately 15.9 acres. These work areas may be cleared of vegetation and graded, if necessary, prior to their use.

Pull Sites

Approximately nine pull sites will be used to install and remove conductors during construction. These areas will be utilized by PG&E to stage conductor-pulling trucks and conductor reel trucks. All pull sites located outside of paved areas may require vegetation removal and, depending on the local terrain, some minor grading to ensure a flat and safe work environment.

Northern Alignment

Along the Northern Alignment, PG&E will establish approximately five 200- to 800-foot-long by 100- to 300-foot-wide pull sites[12] that will be generally in line with the existing power line and distribution line alignments to facilitate installation of the new overhead conductors onto the poles. These five pull sites will require a total of approximately 6.3 acres of temporary disturbance. On average, the pull sites will be located approximately 1.7 miles apart, as preliminarily depicted in Attachment 2-A: Detailed Route Maps.

Cox-Freedom Segment

Approximately four pull sites will be located along the Cox-Freedom Segment. Three of these pull sites will be located within public paved roads. One additional pull site, measuring approximately 115 feet by 70 feet, will be located in the pole work area adjacent to and directly west of Cox Road near the southern corner of Rob Roy Substation, as depicted in Attachment 2-A: Detailed Route Maps. These four pull sites will be located approximately 0.6 mile apart.

Rob Roy Connections

No additional pull sites will be required to install conductor for the Rob Roy Connections.

2.7.5.2 Substation Work Area

Substation work at Rob Roy Substation will require the existing north and east fence lines to be relocated approximately 50 feet to allow for the additional components and an interior access road to be installed, as depicted in Figure 2-6: Rob Roy Substation Layout Drawing. An approximately 20-foot-wide work area will also be established around the perimeter of the extended fence line to accommodate construction activities. These additional areas will be located within PG&E's existing parcel and will accommodate substation construction equipment and the interior access road.

2.7.6 Vegetation Clearing

In order to establish access roads and routes, and clear staging areas/landing zones and work areas for construction activities, up to 30 acres of existing vegetation may need to be cleared or

[12] The pull sites are irregularly shaped. As a result, these dimensions represent minimum and maximum values. The pull sites will have an average size of approximately 1.5 acres each.

mowed. Less than 0.1 acre of existing vegetation will be cleared to accommodate the modifications at Rob Roy Substation. Mowers, excavators, front-end loaders, and bulldozers will be used to clear these sites. During clearing activities, vegetation will be mowed or grubbed, leaving root systems intact wherever possible to encourage resprouting and minimize erosion. Brush and shrubs cleared during construction will be disposed of at an approved landfill.[13]

2.7.7 Erosion and Sediment Control and Pollution Prevention

Construction of the project will involve ground-disturbing activities, including grading and vegetation clearing in conjunction with the construction of necessary work areas, structure foundation installation, and access road improvement. As a result of these activities—which will total more than 1 acre—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 No. 2009-0009-DWQ (General Permit). In order to obtain coverage under the permit, PG&E will develop and submit Permit Registration Documents, including a Notice of Intent, Storm Water Pollution Prevention Plan (SWPPP), risk assessment, site map, certification, and annual fee, to the SWRCB prior to initiating construction activities.

In conjunction with the SWPPP, appropriate BMPs will be developed for each activity that has the potential to degrade surrounding water quality through erosion, sediment run-off, and other pollutants. These BMPs will then be implemented and monitored throughout the project by a qualified SWPPP practitioner.

2.7.8 Methods

2.7.8.1 Construction Methods

Site Development

Because the Northern Alignment will be constructed almost entirely within an existing ROW, limited tree removal is anticipated to be required, as the majority of the ROW is currently devoid of trees; however, tree-trimming and brush removal may be required in areas where the ROW will be expanded or as necessary to maintain existing ROW clearances. Because the Cox-Freedom Segment ROW may be expanded by up to 20 feet in some locations from the current road franchise position, tree trimming and brush removal are anticipated to be required. A more detailed discussion of the vegetation removal and tree trimming is provided in Section 3.4 Biological Resources.

During the site development process, some existing access roads will be improved and some new access roads will be established, as discussed in Section 2.7.1 Access Roads/Overland Access Routes.

[13] Buena Vista Landfill, located at 1231 Buena Vista Drive in Watsonville, has been identified as a potential disposal facility for brush and other cleared vegetation.

Crossing Structure Installation

Crossing structures will be installed to protect existing roadways and other facilities from sagging conductors during construction. PG&E will auger an approximately 2-foot-diameter, 8-foot-deep hole within each crossing structure work area to facilitate the crossing structure installation. The wood poles will then be placed in the excavations using a small crane or loader and secured by backfilling and compacting the excavated material into the remaining void. In areas where crossing protection may be short in duration or of low risk, equipment, such as line trucks, loaders, backhoes, or cranes, may be temporarily positioned to shield the crossing from potentially sagging conductors.

Pole Installation

Work Area Preparation

Pole installation will begin with the clearing of the pole work area—as described in Section 2.7.5 Work Areas—at the location of each pole using a mower and/or backhoe. If necessary, minor grading may be conducted in order to develop a flat, safe area.

Foundation Construction

In order to install TSPs, concrete foundations will be constructed prior to erecting the pole. Foundation construction will commence with the excavation of an approximately 3- to 7-foot-diameter, 15- to 33-foot-deep hole using large augers and drill rigs. A reinforcing steel rebar cage will then be delivered to the work area. Due to design considerations and available access, the cage may be delivered in more than one piece. The complete cage will then be lowered into the excavation and an approximately 2-foot-tall surface form will be built. Once the rebar cage is in place and the form is established, concrete will be poured to fill the excavation and encase the rebar cage. The completed foundation is then left to cure for between 7 and 14 days.

Grounding the Line and Obtaining Clearance

Prior to installing either the TSPs or wood poles, an approved clearance from PG&E System Operations must be obtained and the line must be grounded/cleared of electrical energy. To start this process, PG&E System Operations will de-energize the line through remote-controlled operation of the substations or opening distribution line switches. Once the line is cleared and determined to be non-energized, grounding clamps will be attached to the conductors on either side of the pole work area. The grounding clamps are attached to insulated rods with conductor pigtails that will be attached to copper ground rods driven into the ground. The line will then be tested again to be sure it is not energized. If it is determined to be non-energized, the installation of the poles and transfer of conductor can proceed. At the end of the approved clearance period or the daily duration of construction, the grounding scheme will be removed at the work area and the line will be reenergized.

Tubular Steel Pole Installation

The poles or pole segments, cross arms, insulators, and hardware will then be delivered to the pole work area. The cross arms will be attached, the pole will be placed onto the cured concrete

foundations using cranes, and the pole will be secured using the appropriate hardware. If the pole is delivered in multiple segments due to access restrictions or other engineering considerations, the segments will be placed in order and secured using hardware. In areas of difficult terrain, poles may be delivered and assembled on their foundations using a helicopter. Once the pole is installed, additional hardware will be added to the cross arms using a bucket truck. If applicable, the existing conductor will then be attached to the new TSP hardware, and the line will be re-energized.

Wood Pole Installation

Wood poles will be embedded directly in the ground without the use of a separate foundation. Work will begin by excavating an approximately 3- to 4-foot-diameter and approximately 8- to 11-foot-deep hole. As described previously, direct-bury poles will be embedded at an approximate distance of 10 percent of their total installed height plus 2 feet.[14] Following the excavation process, the poles, insulators, and hardware will be delivered to the pole work area and will be assembled. The poles will then be placed in the excavation using line trucks or cranes, the remaining void will be backfilled, and the surrounding area will be compacted. Once the pole is embedded and the surrounding area compacted, additional hardware will be added to the cross arms using a bucket truck. If applicable, the existing conductor will then be attached to the new wood pole hardware, and the line will be re-energized.

Conductor Installation

The new 115 kV circuit conductor stringing between Green Valley Substation and Rob Roy Substation will begin with the installation of insulators and stringing sheaves during TSP installation. Sheaves are rollers that will be temporarily attached to the lower end of the insulators to allow the conductor to be pulled along the line. A rope will then be pulled through the rollers from structure to structure. This may be accomplished through the use of a helicopter in instances where terrain is difficult or the use of a bucket truck or aerial man-lift is not feasible. Once the rope is in place, it will be attached to a steel cable and pulled back through the sheaves. The 115 kV conductor will then be attached to the steel cable and pulled back through the sheaves and into place using conventional tractor-trailer pulling equipment located within one of the substations or within designated pull sites located along the alignments. The pulling through each structure will be done under a controlled tension to keep the conductor elevated and away from obstacles.

After the 115 kV conductor has been pulled into place, the sag between the structures will be adjusted to a pre-calculated level. The lowest 115 kV conductor will be installed with a minimum ground clearance of approximately 30 feet. The conductor will then be attached to the end of each insulator, the sheaves will be removed, and the vibration dampers and other hardware accessories will be installed. The existing 12 kV distribution line will be transferred from the existing poles to the new collocated poles where applicable. The installation and transfer of the conductors will require temporary partial system outages. This process will be

[14] Stub poles will be installed in a similar fashion as wood power poles.

repeated again to reconductor the existing Green Valley-Camp Evers 115 kV line between Green Valley Substation and an existing pole near the intersection of Cox Road and Leslie Lane.

Pole Removal

Following the transfer of the existing Green Valley-Camp Evers 115 kV circuit conductors to the new TSPs, and transfer of the existing distribution line to the new Cox-Freedom Segment poles, crews will remove the existing distribution and transmission poles and hardware using cranes, aerial man lifts, and/or helicopters. The old poles will be cut off at ground level and transported off site. The bases of the poles will then be removed, the voids will be backfilled and compacted with native soil from new pole excavations, and the backfilled areas will be allowed to revegetate naturally. Removed poles will be transported to a PG&E service yard for temporary storage until the poles are reused or disposed of at a permitted landfill site, as appropriate.[15]

Pole Topping

Approximately 12 existing poles along the Northern Alignment that currently have distribution underbuilt will be retained following construction. Approximately eight of these poles will be topped (i.e., the top will be cut off with a chainsaw) approximately 1 foot above the horizontally configured distribution underbuild. The distribution underbuild at approximately four of these poles will be reframed as a vertical configuration and the existing pole will be topped approximately 1 foot above the highest distribution conductor.

2.7.8.2 Rob Roy Substation Modification

To accommodate the additional 115 kV circuit, modification of Rob Roy Substation will be required. All of the modifications planned will take place within the existing PG&E-owned parcel. Backhoes and augers will be used to excavate the new footing for the additional substation components. Following excavation work, PG&E will construct necessary forms and pour additional concrete footings. Once all footings have cured, all equipment will be anchored into final position, and wiring, controls, and protective devices will be installed. All new components will be delivered to the site using a flatbed truck and positioned using a small crane.

2.7.8.3 Cleanup and Post-Construction Restoration

Surplus material, equipment, and construction debris will be removed at the completion of construction activities. All man-made construction debris will be removed and recycled or disposed of at permitted landfill sites, as appropriate. Cleared vegetation will either be chipped and stored on the ROW for later use during reclamation or disposed of off-site, depending on landowner and agency agreements.

All areas that are temporarily disturbed around each pole, as well as areas used for conductor stringing and staging, will be restored to preconstruction conditions, to the extent practicable, following construction. This will include returning areas to their original contours and reseeding

[15] The Monterey County Regional Waste Management District Landfill, located at 14201 Del Monte Boulevard in Marina, has been identified as a potential disposal facility for old wood power line poles.

in accordance with prearranged landowner agreements, where applicable. Existing access roads that have been widened will be returned to their preconstruction widths.

All temporarily disturbed areas within and around Rob Roy Substation will be restored to the extent necessary for safe operation. All construction waste will be disposed of in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste disposal, through transport to an authorized landfill. Because all work will occur within existing or modified fence lines, no landscaping work is proposed around the substation.

2.7.9 Equipment

The equipment that will be used during project construction, as well as a summary of deliveries and pickups for each piece of equipment, is outlined in Attachment 2-B: Construction Equipment Summary.

2.7.10 Schedule

PG&E anticipates that construction of the project will take approximately 8 months during a 1-year construction period. Site development and preparation for all project components are preliminarily scheduled to begin in April 2013, after which construction of each of the components will occur concurrently. Commissioning and startup of the new circuit is scheduled to occur in December 2013.

Construction will typically occur 6 days per week (Monday through Saturday) throughout the duration of construction. Daily work hours will generally be 10 hours per day with construction typically occurring between 7:00 a.m. and 5:30 p.m. Occasionally, work will occur during the evening hours. Such activities will include, but are not limited to, monitoring the substation foundation curing process, and testing and commissioning the new substation components.

2.7.11 Personnel

Different phases of the construction process require varying numbers of construction personnel. It is anticipated that construction of the Northern Alignment will be conducted by two six- to eight-crewmember teams working from May 2013 through October 2013. The Cox-Freedom Segment will be constructed by one to two eight-crewmember teams working from May 2013 through August 2013. Rob Roy Substation modifications will be conducted by approximately nine personnel working from April 2013 through November 2013. The total number of construction personnel and vendors visiting the site will range between approximately 12 and 70 per day.

2.8 OPERATION AND MAINTENANCE

This section describes the O&M activities that will be conducted for each project component once the project has been constructed and is in service.

2.8.1 Power Lines

Inspection, maintenance, and repair of the new 115 kV power lines will continue to be performed as it has been for the existing lines in the project corridor. As with the existing electric lines, O&M activities will involve both routine preventative maintenance and emergency procedures to maintain service continuity. Aerial and ground inspections of project facilities will continue to be performed. The TSPs and line will be inspected annually, at a minimum, for corrosion, equipment misalignment, loose fittings, and other common mechanical problems. Approximately 30-foot by 15-foot work spaces around all TSPs and wood poles will be maintained for the 115 kV power line poles. These areas will be kept clear of shrubs and other obstructions for inspection and maintenance purposes.

2.8.2 Rob Roy Substation

Rob Roy Substation will be unmanned during operation, and substation monitoring and control functions will be continue to be performed remotely. Unauthorized entry into the substation will be prevented by the existing fencing around the facility and locked gates. No new personnel will be required for O&M of the substation. Routine inspections will continue to occur approximately 12 times per year by approximately two or three PG&E employees to ensure that the substation is in proper functioning condition.

2.9 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 necessary permits for the project from federal, state, and local agencies. **Error! Reference source not found.**, provides the potential permits and approvals that may be required for project construction.

Table 2-5: Potential Permits and Approvals

Permit/Authorization	Agency	Jurisdiction/Purpose
State		
PTC	CPUC	Construction of a new 115 kV circuit
CEQA Review/Approval		Issuance of a PTC
National Pollutant Discharge Elimination System – Construction General Permit (ministerial)	SWRCB	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Local (ministerial only)		
Encroachment Permit	Santa Cruz County	Work within county roads/road ROW or property
Building Permit	Santa Cruz County	Attachment of control enclosure to foundation at Rob Roy Substation
Grading Permit (if ministerial)	Santa Cruz County	Grading at Rob Roy Substation

2.10 APPLICANT-PROPOSED MEASURES

In addition to the requirements stipulated in the project permits and applicable regulations, PG&E has committed to implementing the Applicant-Proposed Measures (APMs) outlined in Table 2-6: Applicant-Proposed Measures. Implementation of these measures will further facilitate avoidance and/or minimization of potential adverse environmental impacts. The various resource sections in Chapter 3 – Environmental Impact Assessment, detail how and when the APMs will be applied.

2.10.1 Implementation of Applicant-Proposed Measures

PG&E will maintain an environmental compliance management program throughout the duration of the project to allow for implementation of the APMs to be monitored, documented, and enforced, as appropriate. PG&E's contractor will be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects. Table 2-6: Applicant-Proposed Measures, contains a list of the project APMs.

Table 2-6: Applicant-Proposed Measures

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
Aesthetics					
AES-01	Construction activities will be kept as clean and inconspicuous as practical.	✓	✓	✓	✓
AES-02	Non-reflective 115 kV conductor and insulators will be installed along the Northern Alignment and Cox-Freedom Segment to minimize the reflectivity and general visibility of the line.	✓	✓		
AES-03	The new and replacement tubular steel poles that will be installed will be manufactured of self-weathering steel.	✓	✓		✓
AES-04	The new lighting at Rob Roy Substation will use non-glare or hooded fixtures, and will be directed to reduce spillover into areas outside the substation site and minimize the visibility of lighting from off-site locations.			✓	
AES-05	To reduce the potential visibility of new poles as seen from a limited number of residences within approximately 250 feet, where relatively unobstructed views of the project are seen and the new structures appear prominent, PG&E will consult with residential property owners regarding the potential purchase of trees and large shrubs for visual screening to be installed at key locations on residential properties, where feasible. The selected plant materials will be ecologically appropriate to the local landscape setting (in terms of water usage, horticultural and soil requirements, etc.) and will be consistent with PG&E and CPUC requirements for landscaping in proximity to power facilities.	✓	✓		
Air Quality and Greenhouse Gas Emissions					
AIR-01	All active construction areas, unpaved access roads, parking areas, and staging areas will be watered or stabilized with non-toxic soil stabilizers at least two times per day or as needed to control fugitive dust.	✓	✓	✓	✓
AIR-02	Traffic speeds on unpaved roads and rights-of-way will be limited to 15 miles per hour.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
AIR-03	Vehicle idling time will be limited to a maximum of 5 minutes for vehicles and construction equipment, except where idling is required for the equipment to perform its task.	✓	✓	✓	✓
AIR-04	If suitable park-and-ride facilities are available in the project vicinity, construction workers will be encouraged to carpool to the job site, to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.	✓	✓	✓	✓
Biological Resources					
BIO-01	All project vehicular movement will be restricted to existing access roads, temporary access roads constructed as a part of the project, designated overland routes, approved temporary work areas, and existing permanent work areas. All approved access roads, access routes, and work areas will be located in advance of construction to the extent possible, and will be marked in sensitive areas except when not feasible due to physical or safety constraints. Construction personnel and equipment will be confined to these delineated work areas, access roads, and access routes. Vehicle travel to each construction site will be limited to the minimum number of trips and vehicles necessary to perform work safely. If new access routes or work areas are needed in biologically sensitive areas, they will be surveyed first by a qualified biologist to ensure that no special-status species or sensitive habitat is present. Approval from a qualified biologist will be obtained prior to any travel off of approved routes or work areas in biologically sensitive areas.	✓	✓	✓	✓
BIO-02	Vegetation-clearing (i.e., tree removal, tree trimming, and understory vegetation removal) will be confined to the minimal amount necessary to safely facilitate work. Pre-construction surveys will be performed prior to vegetation-clearing activities, and as feasible, those activities will be planned to avoid sensitive periods for special-status species.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-03	The existing conditions of work areas and overland travel routes will be documented by a qualified biologist before construction begins, and these areas will be returned to pre-existing contours and conditions following construction. A Revegetation and Monitoring Plan will be developed; this plan will describe which vegetation restoration method (i.e., natural revegetation, re-seeding with native seed stock, or reseeding in compliance with the project's Stormwater Pollution Prevention Plan [SWPPP]) will be implemented in the project area. The Revegetation and Monitoring Plan will include additional measures for areas that support sensitive habitat (coastal scrub) and/or special-status plant populations, as discussed in APM BIO-04 and APM BIO-22. This plan will also include measures to control highly invasive weed species.	✓	✓	✓	✓
BIO-04	During the appropriate phenological periods, pre-construction rare plant surveys will be conducted in areas where either special-status plants were previously identified or have the potential of occurring within work areas. Agricultural fields and developed areas will not be surveyed due to the lack of suitable habitat for supporting rare plant species. Prior to construction, the boundaries of all special-status plant populations will be delineated with clearly visible flagging, fencing, or other suitable means of marking the area for avoidance. This boundary will be maintained during work at these locations, and these areas will be avoided during all construction activities to the extent possible. Where these areas will be disturbed, additional measures will be implemented. PG&E will develop and implement a Revegetation and Monitoring Plan, as described in APM BIO-03, which will include measures for special-status plant species that may be impacted by project construction. This plan will include specific measures for Monterey spineflower, which will be impacted by project activities, as well as general measures in the event that other special-status plant species are encountered prior to or during project construction.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-05	A qualified biologist will develop an environmental training program, and an environmental representative will present the training to all crew members before they begin work on the project. The training will describe special-status species and sensitive habitats that could occur within the project area, protection afforded these species, and the avoidance and minimization measures necessary to avoid/minimize impacts. Penalties for violations of environmental laws will also be incorporated into the training session. Each crewmember will be provided with an informational training handout and a decal to indicate that he/she has attended the training.	✓	✓	✓	✓
BIO-06	To the maximum extent feasible, burrows will be avoided.	✓	✓	✓	✓
BIO-07	Work will be conducted between sunrise and sunset in areas with suitable upland habitat for Santa Cruz long-toed salamander, unless approved by a qualified biologist or required due to an emergency situation. Suitable upland habitat includes areas with small mammal burrows, tree roots, dense leaf litter, and fallen logs in coastal oak woodlands, willow riparian woodlands, and dense coastal scrub (especially on north-facing slopes) within 1 mile of known and potential breeding ponds for Santa Cruz long-toed salamander.	✓	✓	✓	✓
BIO-08	Under the direction of the PG&E Project Biologist, a qualified biologist will be present at all active construction areas in biologically sensitive areas.	✓	✓	✓	✓
BIO-09	If a special-status species is observed on site, crews will immediately stop work when it is safe to do so and will contact the qualified biologist. Crews will not be permitted to touch, handle, or relocate special-status wildlife. A communication protocol will be developed and provided to all project personnel to guide the special-status species reporting. If a biological monitor is not in the immediate area to document the resource observation, crews will immediately contact the Environmental Compliance Manager and the PG&E Project Biologist.	✓	✓	✓	✓
BIO-10	When safe to do so, a speed limit of 15 miles per hour will be observed on unpaved access routes, and crews will maintain awareness for wildlife in the roadway. Travel on paved roadways will be conducted according to established speed limits or as safety follows.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-11	PG&E is consulting with a Santa Cruz long-toed salamander expert to develop measures for avoiding the impacts to this species. PG&E expects to provide an updated measure in February of 2012.	✓	✓		✓
BIO-12	If work is scheduled to occur during the avian nesting season (February through August), active work areas will be surveyed by a qualified biologist within 15 days before work begins in those areas to determine if any nesting birds are present. Exclusionary buffer zones will be established by a qualified biologist around any active nests within the project area. Typical exclusionary buffer zones will be 250 feet for raptors and a minimum of 50 feet for non-raptors; however, the size of the buffer zone may also be modified at the discretion of the biologist based on the following factors: 1) the species' sensitivity to disturbance, 2) the topography surrounding the nest site, and 3) its concealment from project activities. In addition to exclusionary buffers, helicopters will not be permitted to hover over active nests, regardless of height. If construction activities are required within an exclusionary buffer zone, the nest will be monitored for disturbance by a qualified biologist until the young have fledged and are independent of the adults. Nest disturbance will be assessed based on behavioral cues such as time off the nest, hesitation approaching the nest, and incessant chattering and bill swiping, among other indications. All potential sources of nest disturbance, including non-construction activities, will be assessed and documented. If no nest disturbance is observed, work may continue. If the biologist determines that activities are causing nest disturbance, work will not be allowed to continue within the buffer zone until the young have fledged. In the event of an unforeseen circumstance regarding avian species, the PG&E Avian Protection Plan Manager will be consulted.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-13	The majority of the project has been designed to conform to the suggested guidelines in the following documents: • Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 – Avian Power Line Interaction Committee (APLIC), 1994 • Avian Protection Plan Guidelines – APLIC and U.S. Fish and Wildlife Service, April 2005 • Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 – APLIC, 2006 The project's final design and installation will reflect these suggested guidelines; however, no 115 kV insulators have been manufactured that meet the recommended 71-inch horizontal phase to ground clearance guideline. As a result, the project will not conform to this suggested guideline.	✓	✓		✓
BIO-14	Pre-construction surveys for special-status wildlife species will be conducted by a qualified biologist at all work areas within 2 weeks or as appropriate for species requiring survey methods during specific seasons before construction begins at those work areas. If a special-status species is encountered, PG&E will avoid the species. If a special-status species cannot be avoided, the appropriate agency or agencies will be notified.	✓	✓	✓	✓
BIO-15	When feasible, tree-trimming and tree-removal activities will be conducted during warmer periods, outside of the bat breeding season, in the presence of a qualified biologist. If vegetation-removal activities will be conducted during the bat breeding season, a habitat evaluation of those areas will be performed to assess the habitat's potential to support sensitive bat species. As necessary, an exclusionary buffer around active roost features will be maintained during project activities; the size of the buffer zone may be modified at the discretion of the qualified biologist based on the species' sensitivity to disturbance. A qualified biologist will monitor roost site exclusion zones during project activities to determine if roosting activity is influenced by noise or other activities and to determine when young bats are able to fly from the roost. Exclusion buffers may be removed after a qualified biologist has determined that bats have vacated the occupied roost sites. If project activities cannot avoid directly impacting active colonial roost sites, PG&E will contact the CDFG to discuss implementing alternative measures.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-16	During the pre-construction surveys, described in APM BIO-14, a qualified biologist will identify potential San Francisco dusky-footed woodrat houses within 50 feet of project activities. At the discretion of a qualified biologist, an exclusion buffer will be established around any woodrat houses that can be avoided, and these exclusion zones will be flagged or fenced. If impacts to a woodrat house are unavoidable, PG&E will work with a qualified biologist to develop a Woodrat Trapping and Relocation Plan, and will coordinate with the CDFG to handle and relocate the San Francisco dusky-footed woodrats.	✓	✓	✓	✓
BIO-17	Excavations that may act as pitfall traps (i.e., those exceeding 6 inches in depth) will be securely fenced or covered. In biologically sensitive areas, the fences around excavations will provide one-way passage for small animals to exit the immediate work area in the event they are encountered. Covers will be strong enough to prevent wildlife from falling into the excavations and will be secured to prevent burrowing underneath the covers. Existing pole excavations will be inspected before they are filled to ensure the absence of wildlife. If a special-status species is located in the excavation or an area of impact and cannot escape, the species will be avoided. Project activities in the immediate work area will cease and the CDFG and/or USFWS (as appropriate, depending on the species listing status) will be contacted.	✓	✓	✓	✓
BIO-18	Before being moved, all poles and similar construction materials stored overnight at the construction site will be thoroughly inspected for animals. If special-status species are observed within poles or similar construction materials, they will be avoided and allowed to leave of their own volition.	✓	✓	✓	✓
BIO-19	Crewmembers and project personnel will not be allowed to bring pets to the project area.	✓	✓	✓	✓
BIO-20	Firearms will be prohibited in all work areas, unless carried by authorized security personnel.	✓	✓	✓	✓
BIO-21	Littering will be prohibited. Food-related garbage and trash will be enclosed in covered containers and removed from the project area daily. Storage yards, contractor yards, and other non-temporary work areas may use centralized areas to aggregate and store wastes. Covered, water-tight waste bins will be required for permanent stored wastes. Stored waste containers will be emptied once a week at a minimum.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
BIO-22	Before construction begins, the boundaries of coastal scrub that can be avoided will be delineated with clearly visible flagging or fencing, or otherwise marked for avoidance. Alternatively, the project access/work areas near coastal scrub vegetation that can be avoided will be marked. The flagging, fencing, and/or other marking will be maintained in place for the duration of construction at each location until work is completed at that site, and these areas will be avoided to the maximum extent practical. Where feasible, measures in the Revegetation and Monitoring Plan, described in APM BIO-03, will be implemented to restore areas of coastal scrub vegetation that will be disturbed during construction activities.	✓			
Cultural Resources					
CUL-01	Prior to construction, all PG&E, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including the potential for exposing subsurface cultural resources and paleontological resources and how to recognize possible buried resources. This training will include a presentation of the procedures to be followed upon discovery or suspected discovery of archaeological materials, including Native American remains and their treatment, as well as of paleontological resources.	✓	✓	✓	✓
CUL-02	Prior to construction, SCPL-2 will be evaluated to determine if it is eligible for listing on the CRHR. If SCPL-2 is eligible, PG&E will not improve the road and will place steel plates along the existing access road to protect this resource in the event the road is used during wet conditions. If SCPL-2 is not eligible, PG&E will use the access road in its current state. Regardless of eligibility, resources identified within SCPL-2 that are outside of the existing access road will be flagged prior to project construction, and the proposed pull site will be situated to avoid the flagged location. Proper signage that states “Exclusion Zone, No Access” will be posted in the restricted area. All crewmembers will be directed not to enter the exclusion zone.	✓			

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
CUL-03	The area between the three poles located approximately 1,000 feet northeast of the intersection of Whiteman Avenue and Harrison Way will be examined by a qualified archaeologist prior to any ground-disturbing activities. Any identified cultural resources that can be avoided will be flagged and marked with proper signage that states “Exclusion Zone, No Access” in the restricted area. All crewmembers will be directed not to enter the exclusion zone. If avoidance of an identified cultural resource is not feasible, the resource will be formally evaluated for its eligibility to be listed on the CRHR by a qualified professional historian prior to project construction. Once the find has been identified and evaluated, PG&E’s cultural resources specialist will make the necessary plans for treatment of the find and mitigation of impacts if the find is determined to be significant as defined by CEQA.	✓			
Geology, Soils, and Mineral Resources					
GEO-01	PG&E will contract a professional geotechnical engineer to conduct a geotechnical investigation in areas that are suspected to have unstable soils or that could be subject to strong ground shaking. PG&E will consider the recommendations and findings in the geotechnical report in the project’s final design to minimize the effects of expansive soils, differential settling, and strong ground shaking. When necessary, design features, such as engineered subgrades and reinforced foundations, will be incorporated into the project’s design. In addition, PG&E will comply with all applicable codes and seismic standards.	✓	✓	✓	✓
Hazards and Hazardous Materials					
HAZ-01	Prior to construction, all PG&E, contractor, and subcontractor project personnel will receive training in the applicable environmental laws and regulations associated with hazardous materials, the use and storage of hazardous materials used on the project, and spill response and cleanup BMPs in the event of an unanticipated release.	✓	✓	✓	✓
HAZ-02	PG&E will update the existing SPCC Plan for Rob Roy Substation and ensure compliance with applicable standards 160 by incorporating the design, control, training, containment, and response requirements for the increased amounts of hydrocarbon and oil storage that will be located at the modified substation, so that hazardous materials will not encounter the soil.		✓		

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
HAZ-03	Smoking will not be permitted during fire season, except in a barren area that is cleared to mineral soil at least 10 feet in diameter or within vehicles or enclosed equipment cabs. Under no circumstances will smoking be permitted during fire season while employees are operating light or heavy equipment, or while walking or working in grass and woodlands.	✓	✓	✓	✓
HAZ-04	PG&E construction crew trucks and equipment will have at a minimum a standard round point shovel and a fire extinguisher. If construction activities likely to cause sparks—e.g., welding, grinding, or grading in rocky terrain—are conducted, emergency fire tool boxes will be readily available to crews. The tool boxes will contain fire-fighting items such as shovels, axes, and water.	✓	✓	✓	✓
Hydrology and Water Quality					
HYD-01	PG&E will file a Notice of Intent with the State Water Resources Control Board for coverage under the General Construction Storm Water Permit and will prepare and implement a SWPPP in accordance with General Order No. 99-08-DWQ. Implementation of the SWPPP will help stabilize graded areas and waterways and reduce erosion and sedimentation. The following measures are generally drawn from that permit and PG&E's standard practices, and will be included in the SWPPP prepared for the construction of the project: • All BMPs will be on-site and ready for installation before the start of construction activities. • BMPs will be developed to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed APMs are followed throughout project construction.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
HYD-01 (cont.)	• Examples of BMPs include the following measures: - straw wattles, water bars, covers, silt fences, sensitive area access restrictions (e.g., flagging), or other sediment containment methods placed around and/or down slope of work areas prior to earth disturbing activities and before the onset of winter rains or any anticipated storm events; - mulching, seeding, or other suitable measures to protect exposed areas during construction activities as necessary; - installation of additional silt fencing prior to construction to address unforeseen runoff into nearby wetlands and drainages; - use of brooms and shovels (as opposed to water) when possible to maintain a clean site; - construction of a stabilized construction entrance/exit to prevent tracking of dirt onto public roadways;establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids; - no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or drainages; and - positioning stationary equipment (e.g., pumps, generators, etc.) used or stored within 100 feet of wetlands, culverts, or drainages within secondary containment. • All BMPs will be inspected before and after each storm event. BMPs will be maintained on a regular basis, and replaced as necessary throughout the course of construction. • A Qualified SWPPP Practitioner will supervise placement of silt fencing to limit the area of disturbance. The silt fence will be monitored regularly to ensure effectiveness.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
Noise					
NOI-01	Equipment will be positioned to maximize the distance from residences and to maintain safe and effective operation.	✓	✓		
NOI-02	All internal combustion engine-driven equipment will be equipped with exhaust mufflers that are in good condition and that meet or exceed the manufacturers' specifications. All equipment will be maintained and tuned according to manufacturers' recommendations.	✓	✓	✓	✓
NOI-03	When backup alarms have more than one volume setting, they will be set to the lowest volume setting that meets OSHA safety requirements.	✓	✓	✓	✓
NOI-04	When construction activities are located within 50 feet of residences, an approximately 3-foot-tall temporary noise barrier will be placed between the residences and any noise-generating equipment that cannot move under its own power while in use.	✓	✓		
NOI-05	Helicopters will maintain a height of at least 500 feet when passing above residential areas, except when they are at temporary construction areas or actively assisting with the stringing of conductor or other project activities. Helicopters will maintain a lateral distance of at least 500 feet from schools when in session.	✓	✓		✓
Population and Housing, Public Services, and Utilities and Service Systems					
PS-01	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, including, but not limited to, the Santa Cruz County Fire Department, Aptos/La Selva Fire Protection District, Santa Cruz County Sheriff's Office, and Watsonville Police Department. 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.	✓	✓	✓	✓

APM Number	Description	Project Component			
		Northern Alignment	Cox-Freedom Segment	Rob Roy Substation Modification	Rob Roy Connections
Transportation and Traffic					
TRA-01	Reflective bollards will be installed around the base of TSP foundations to increase vehicle safety along Dalton Lane and at the corner of McDonald Road and Freedom Boulevard.	✓	✓		
TRA-02	At least 2 weeks prior to work within 1,000 feet of any Santa Cruz Metropolitan Transit District (METRO) bus stop, PG&E will coordinate with the METRO to inform them of the project's potential to impact the bus stop. PG&E will provide the METRO with information regarding the location of the bus stop; the anticipated date, time, and duration of construction activities; and a telephone contact number.	✓			

ATTACHMENT 2-A: DETAILED ROUTE MAPS

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 1 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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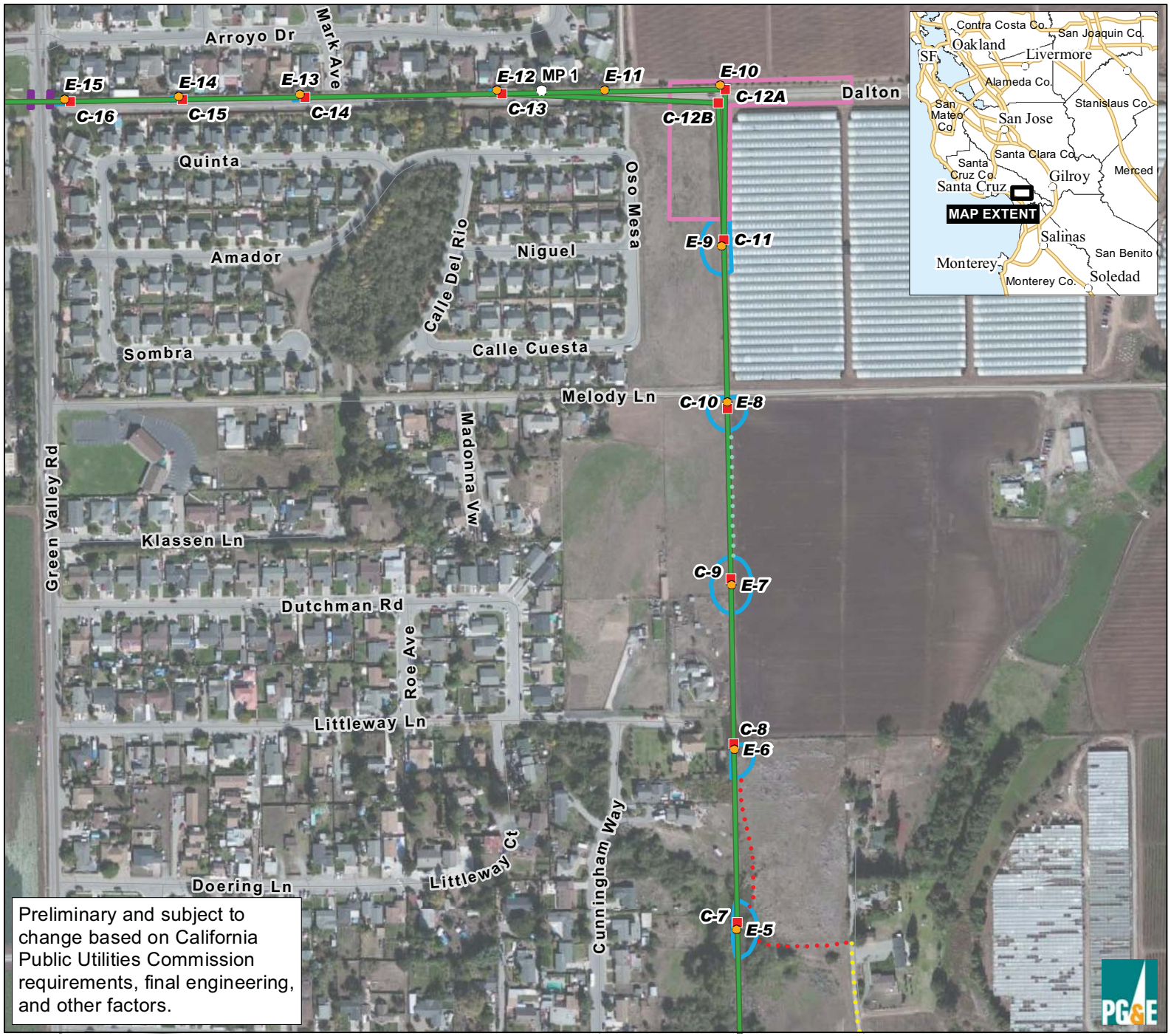

Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 2 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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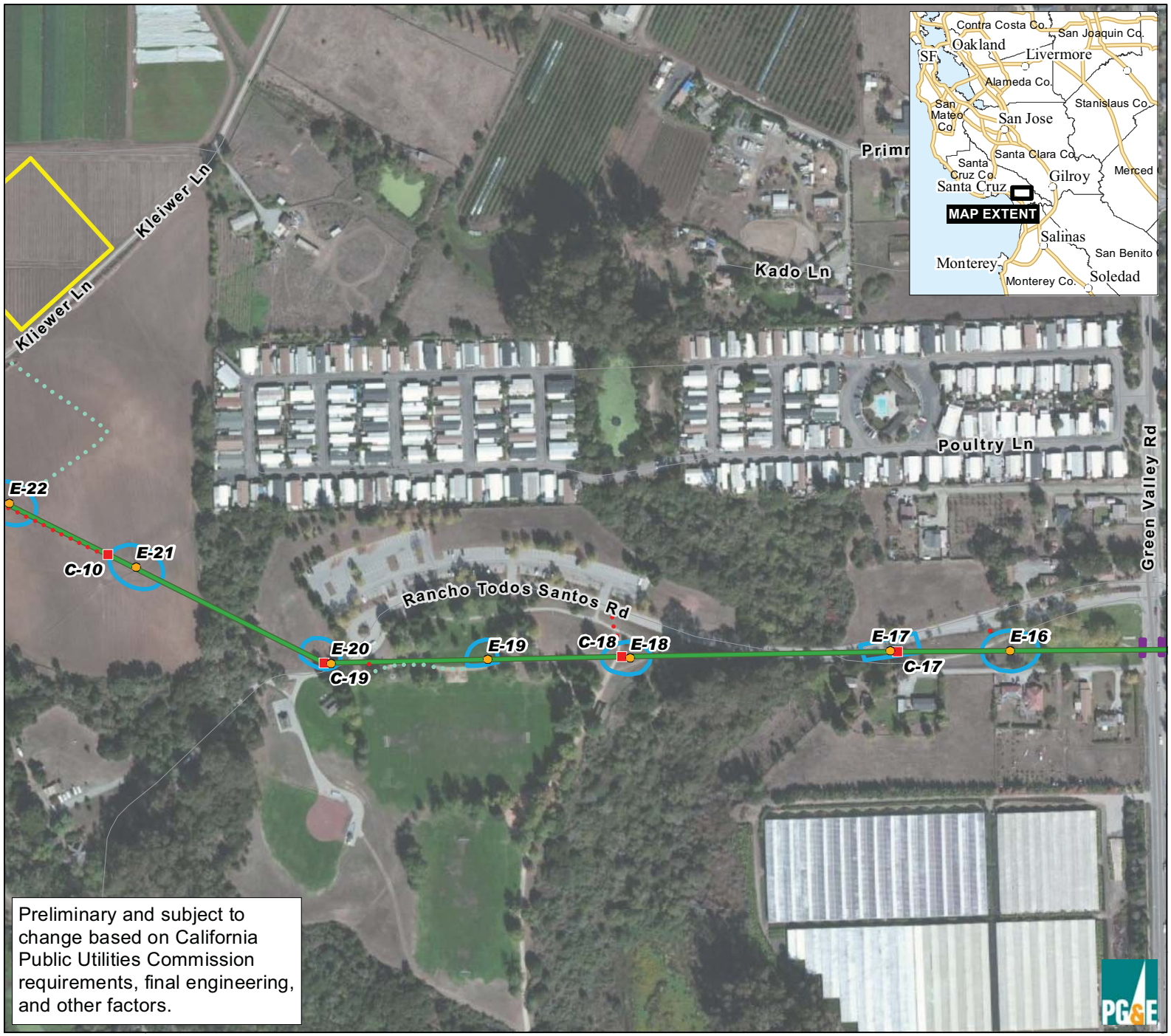

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 3 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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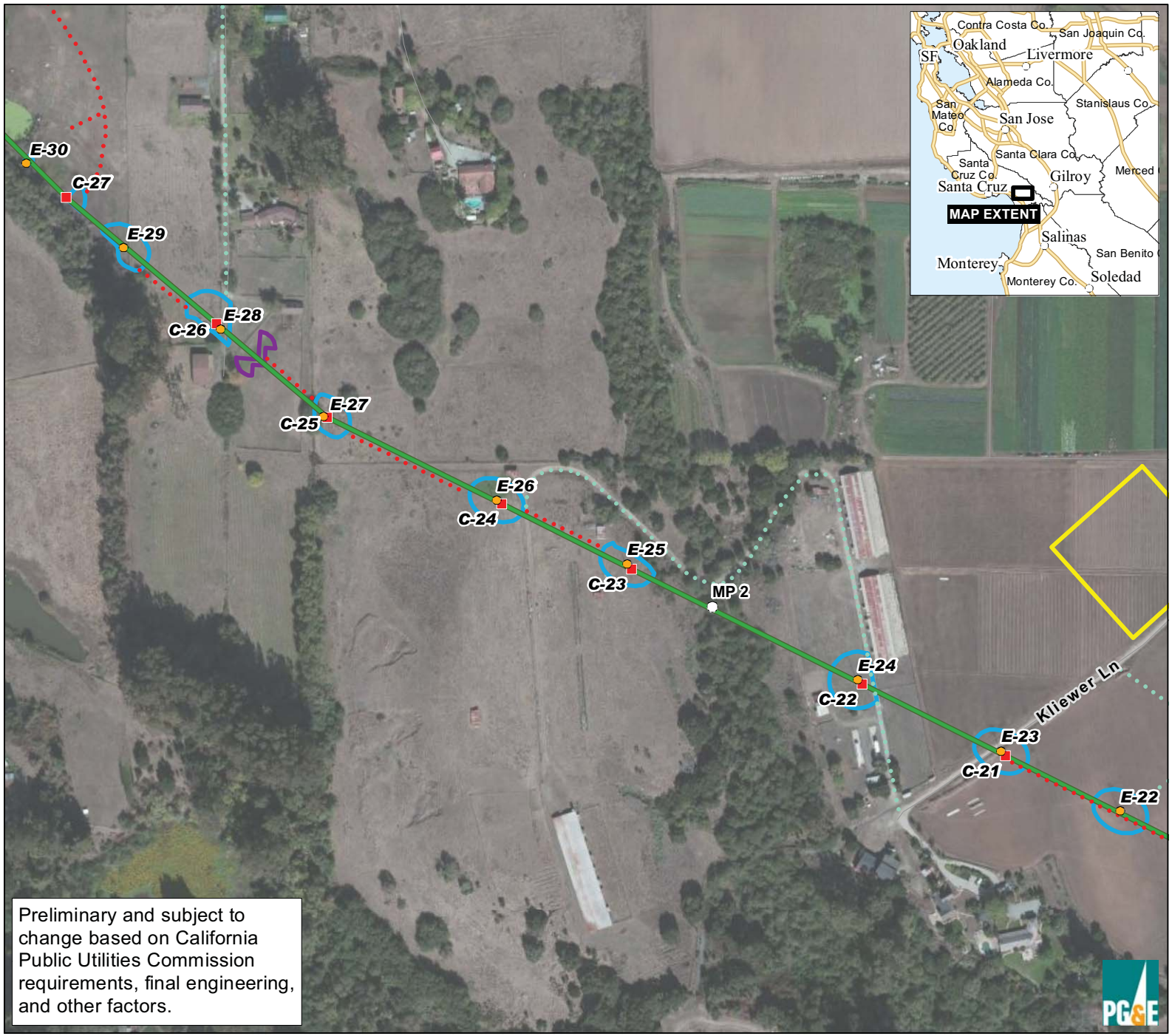

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 4 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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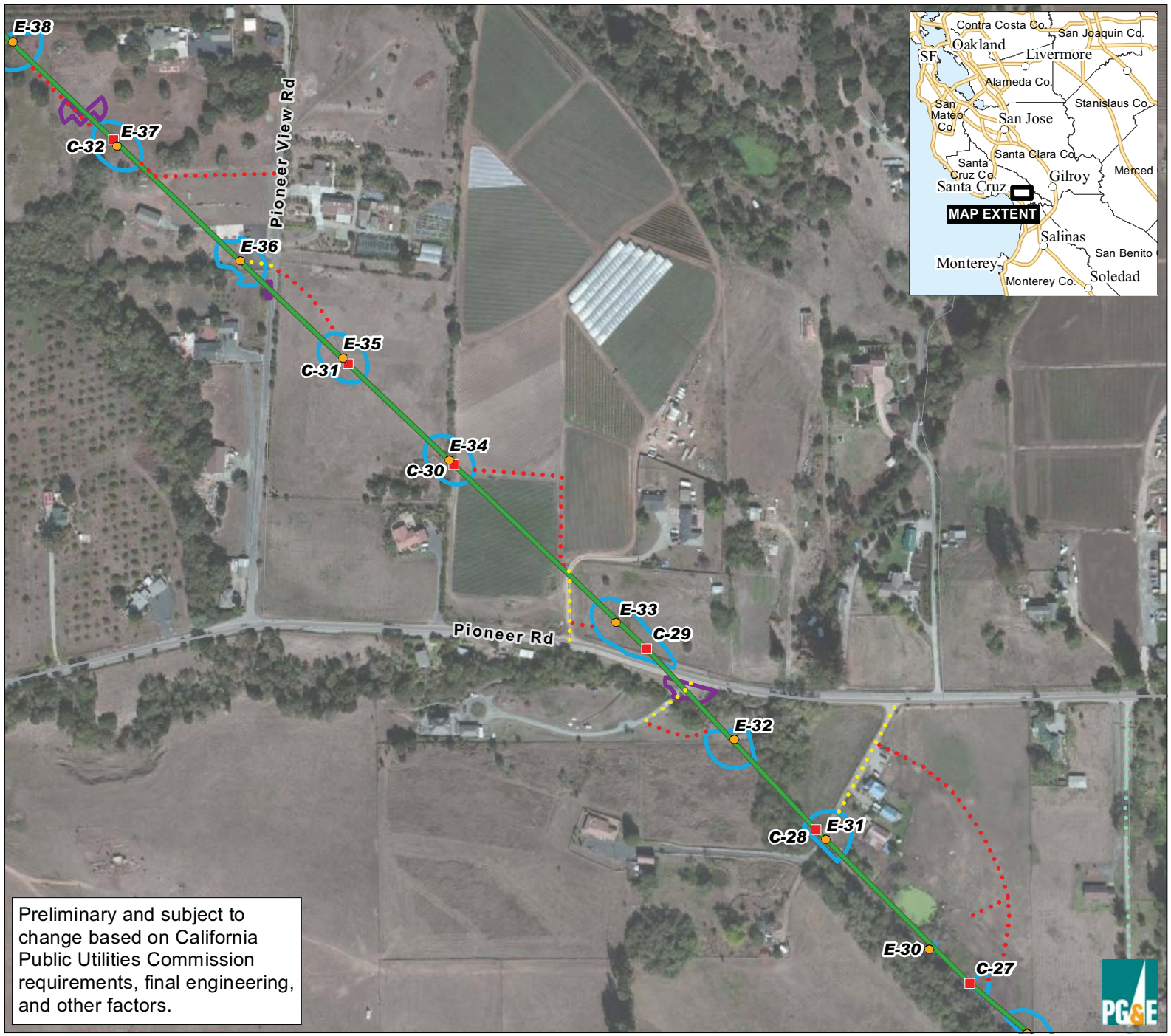

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 5 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

0 200 400 Feet

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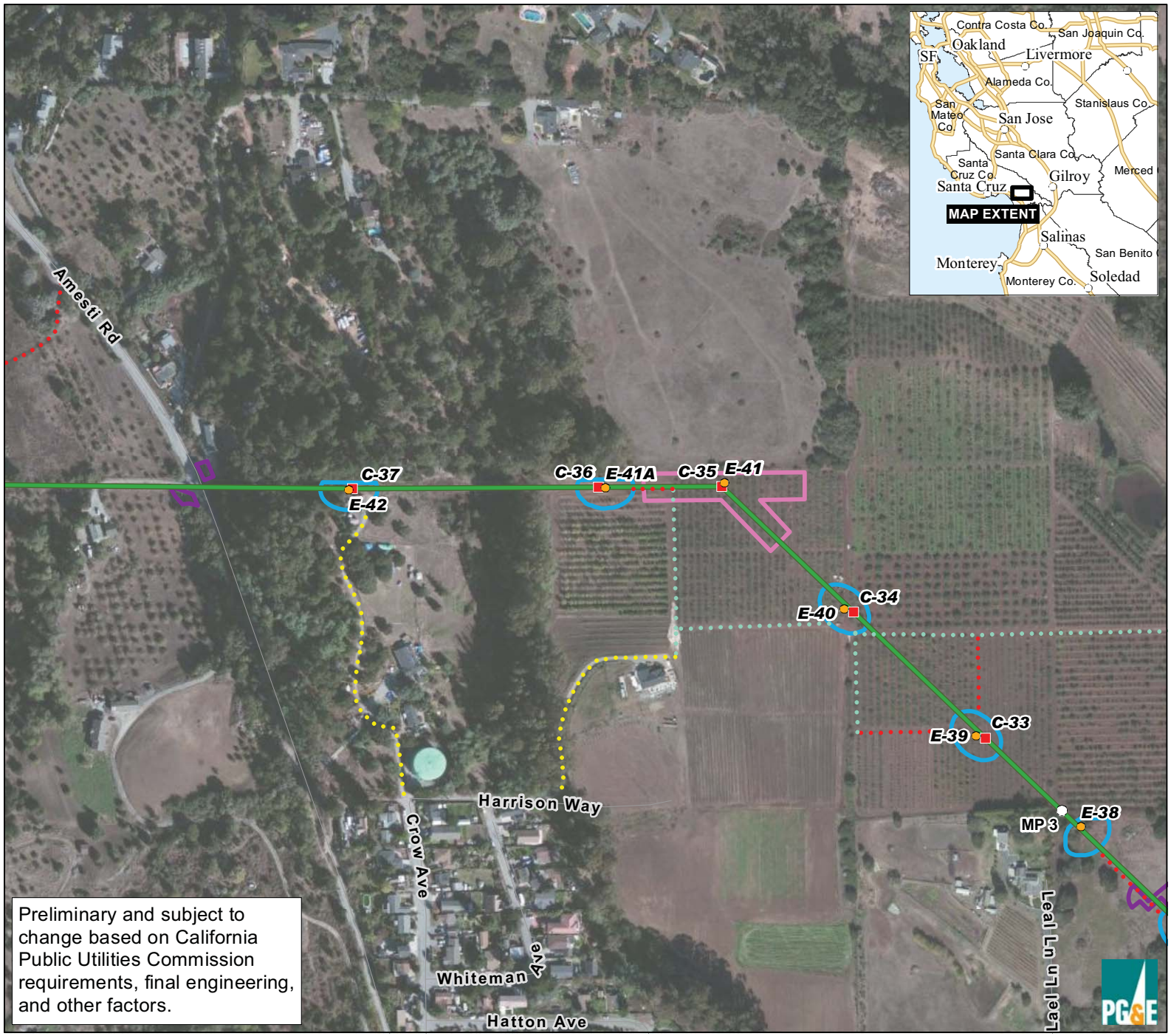

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 6 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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0 200 400 Feet

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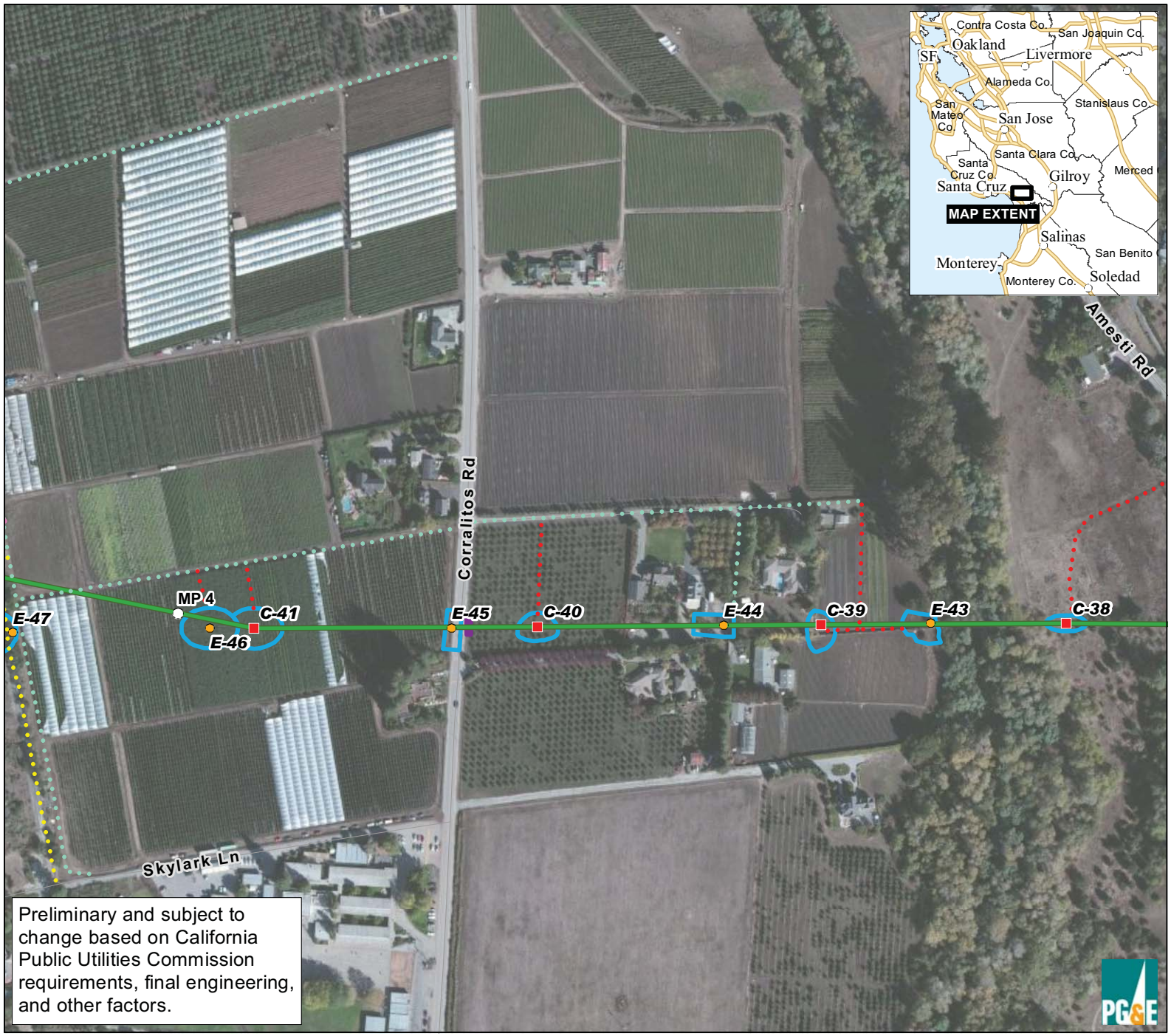

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 7 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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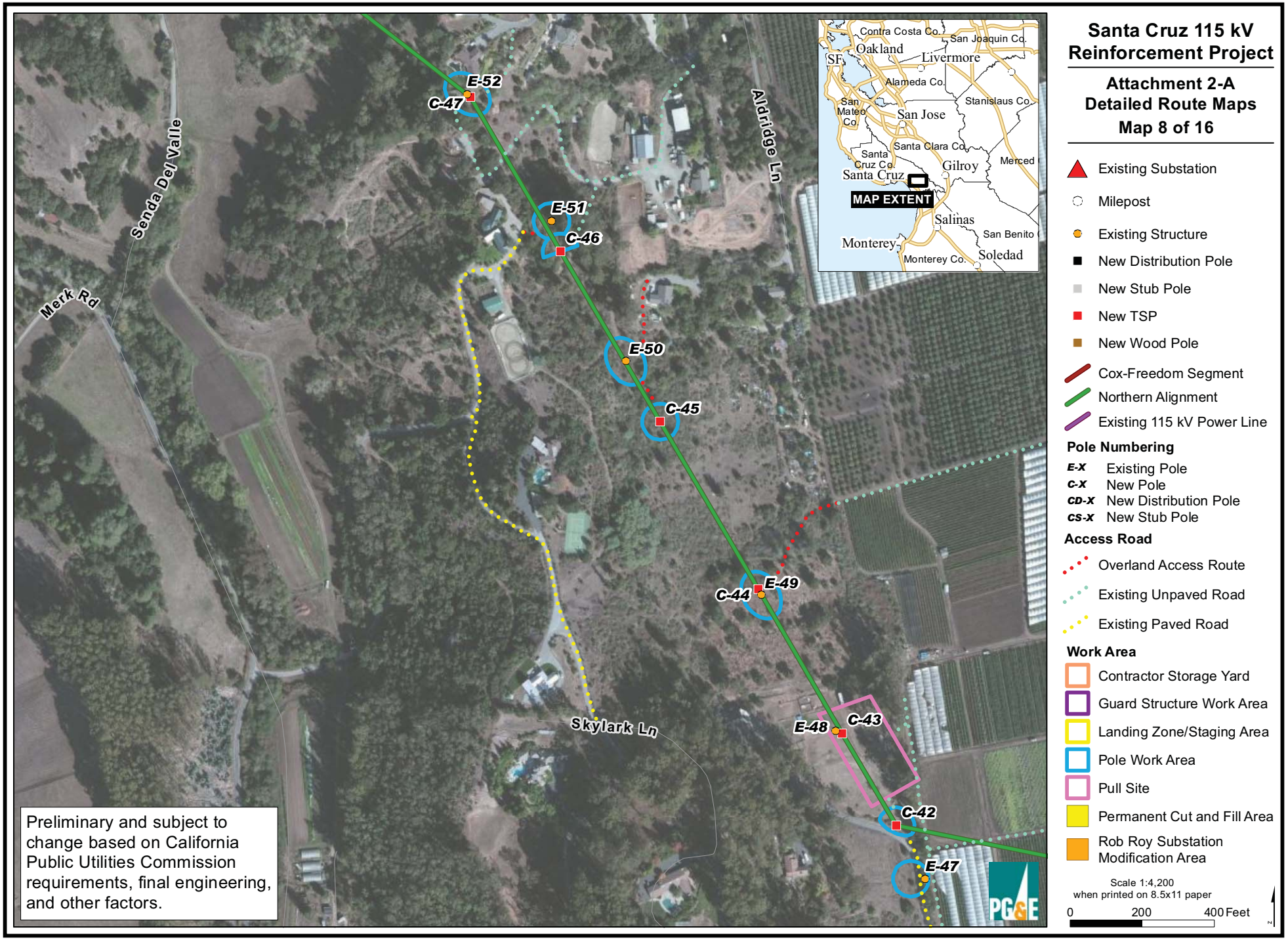

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 8 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

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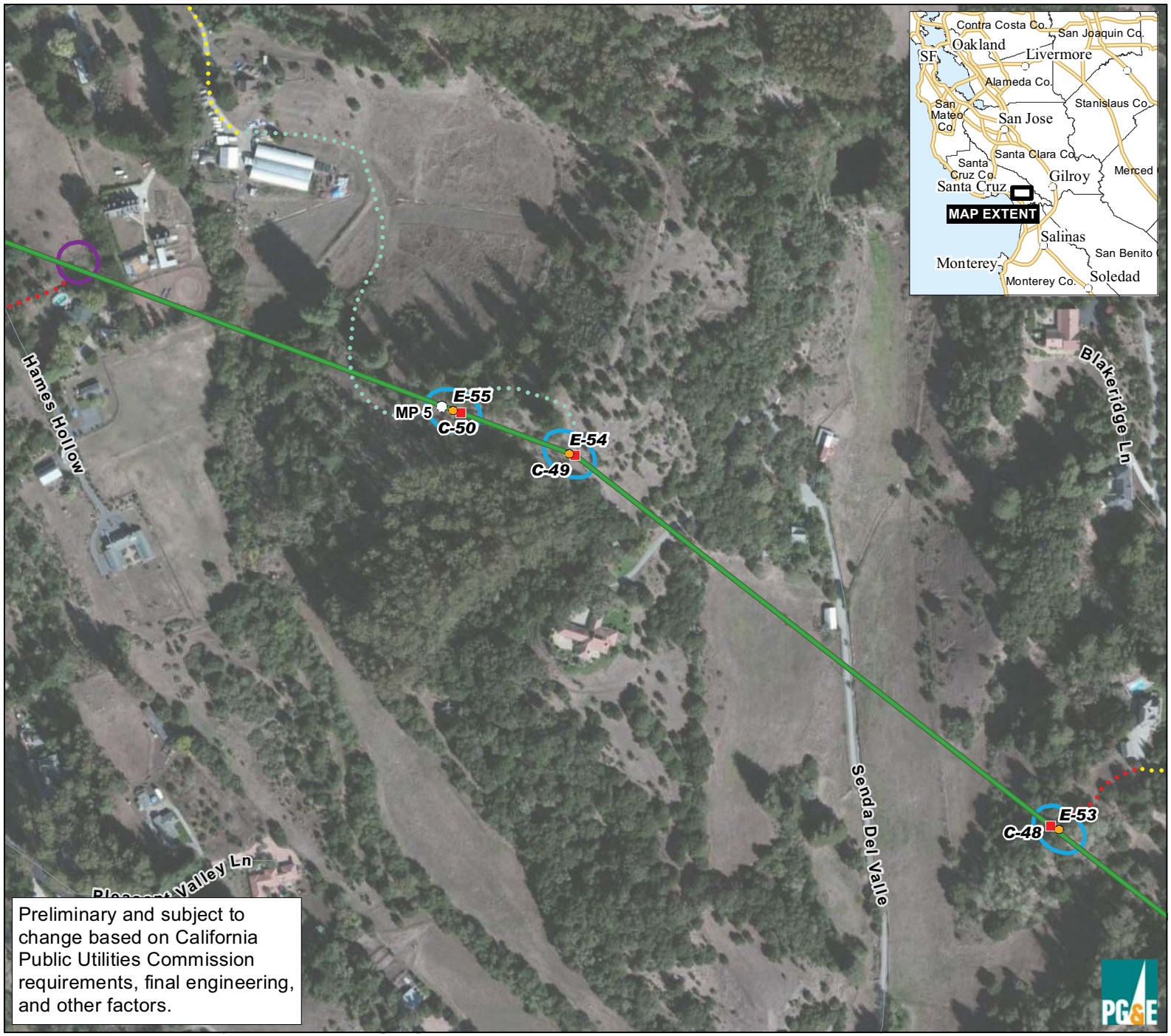

Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 9 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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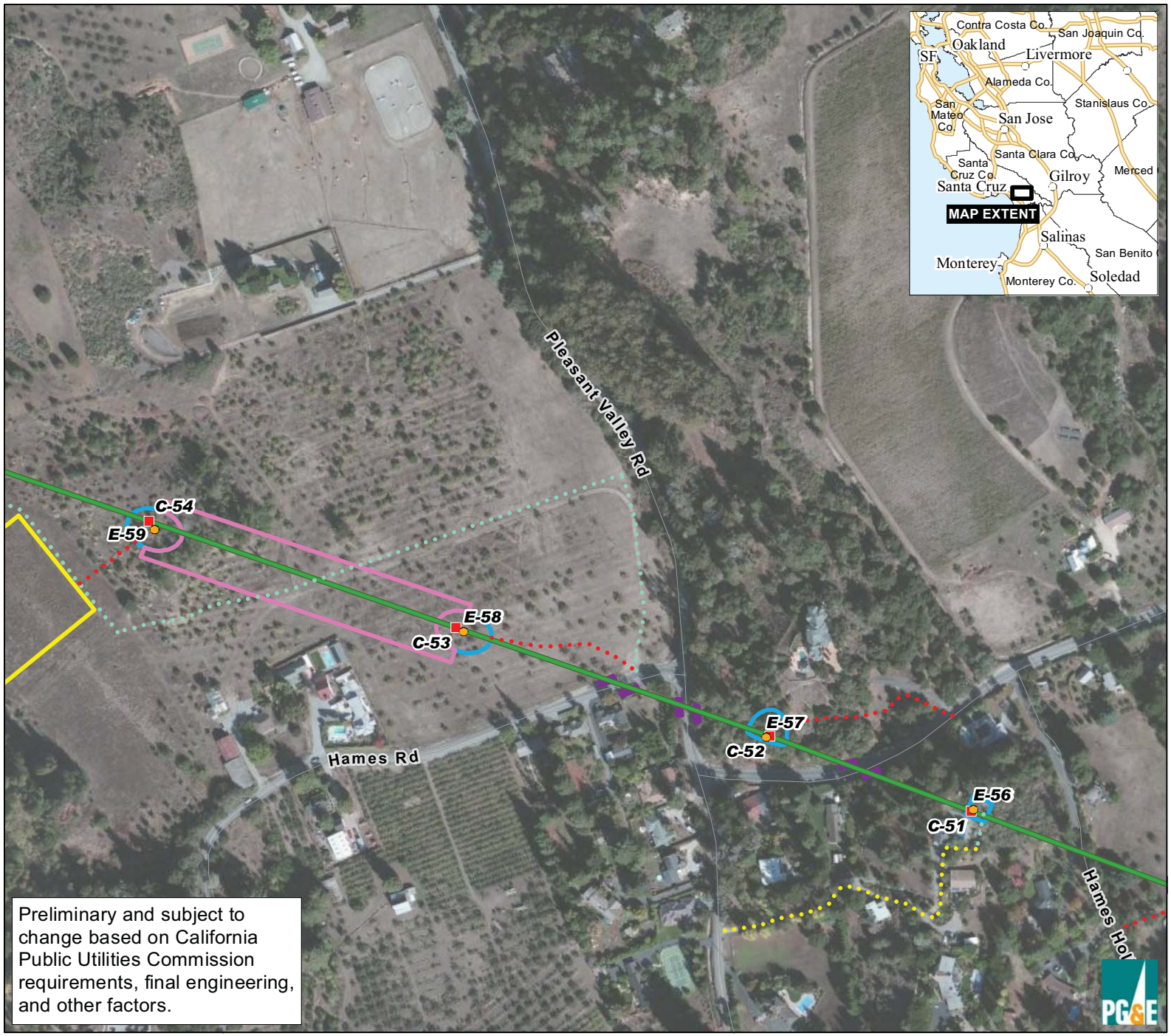

Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 10 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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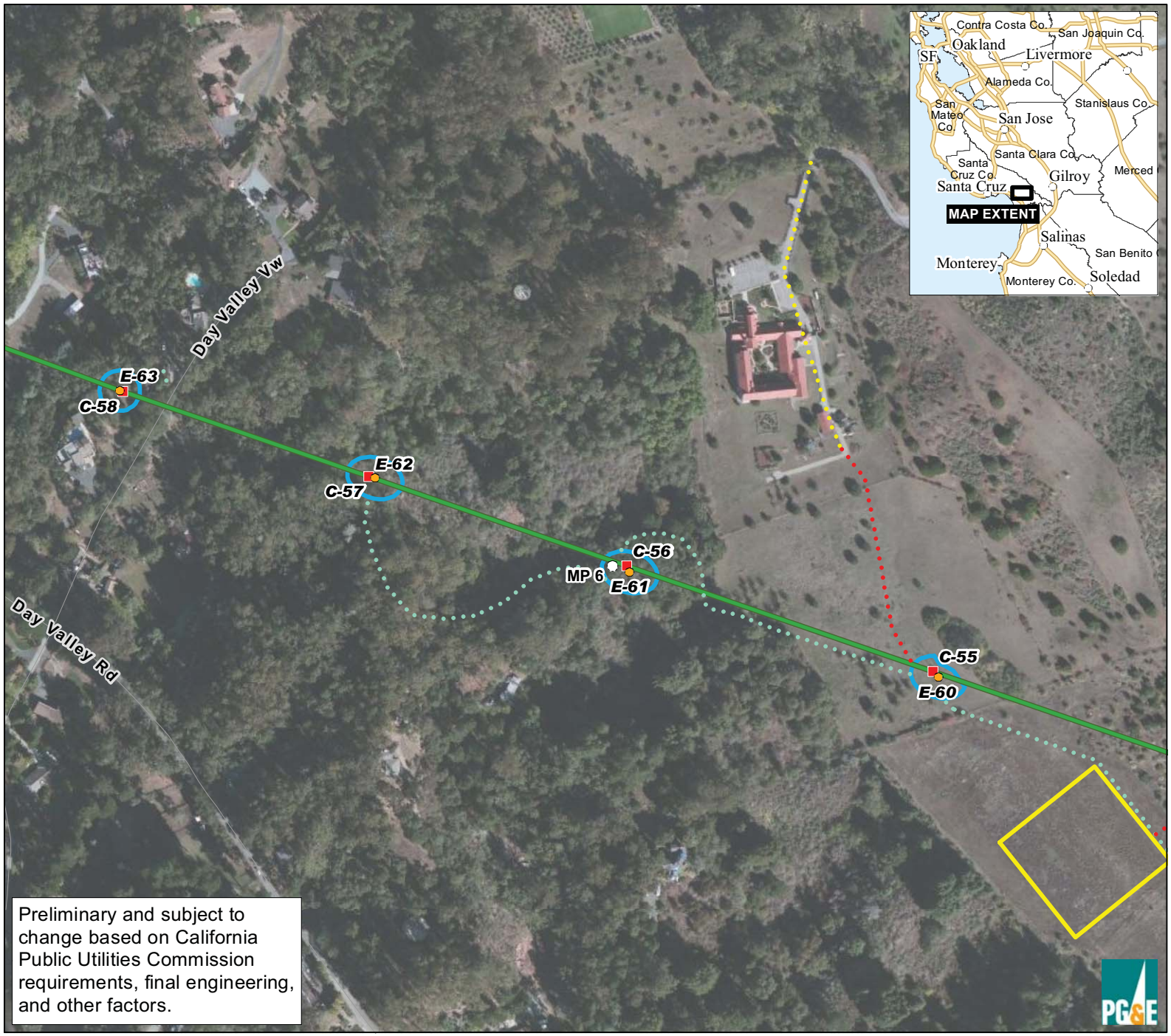

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 11 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
when printed on 8.5x11 paper

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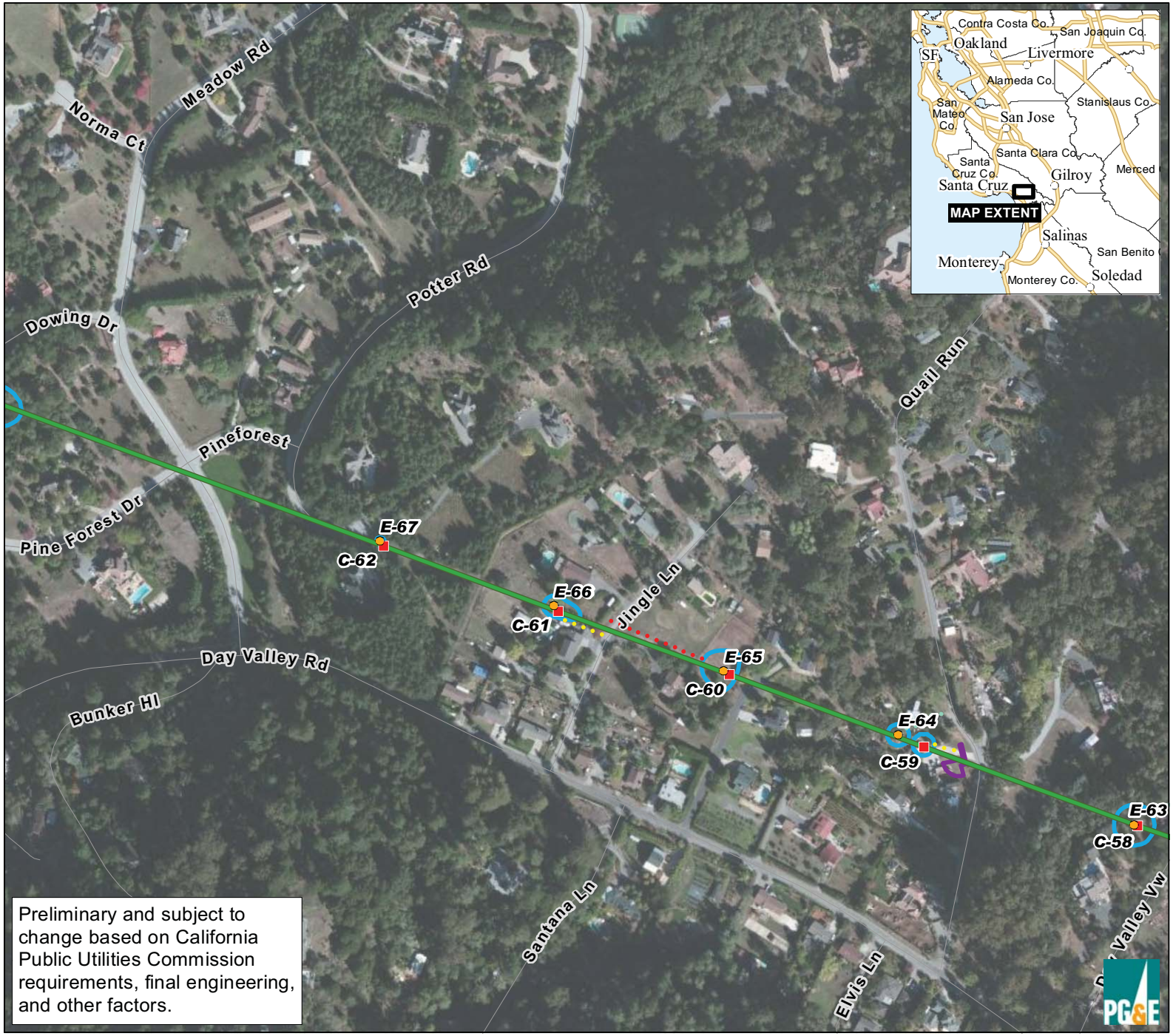

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 12 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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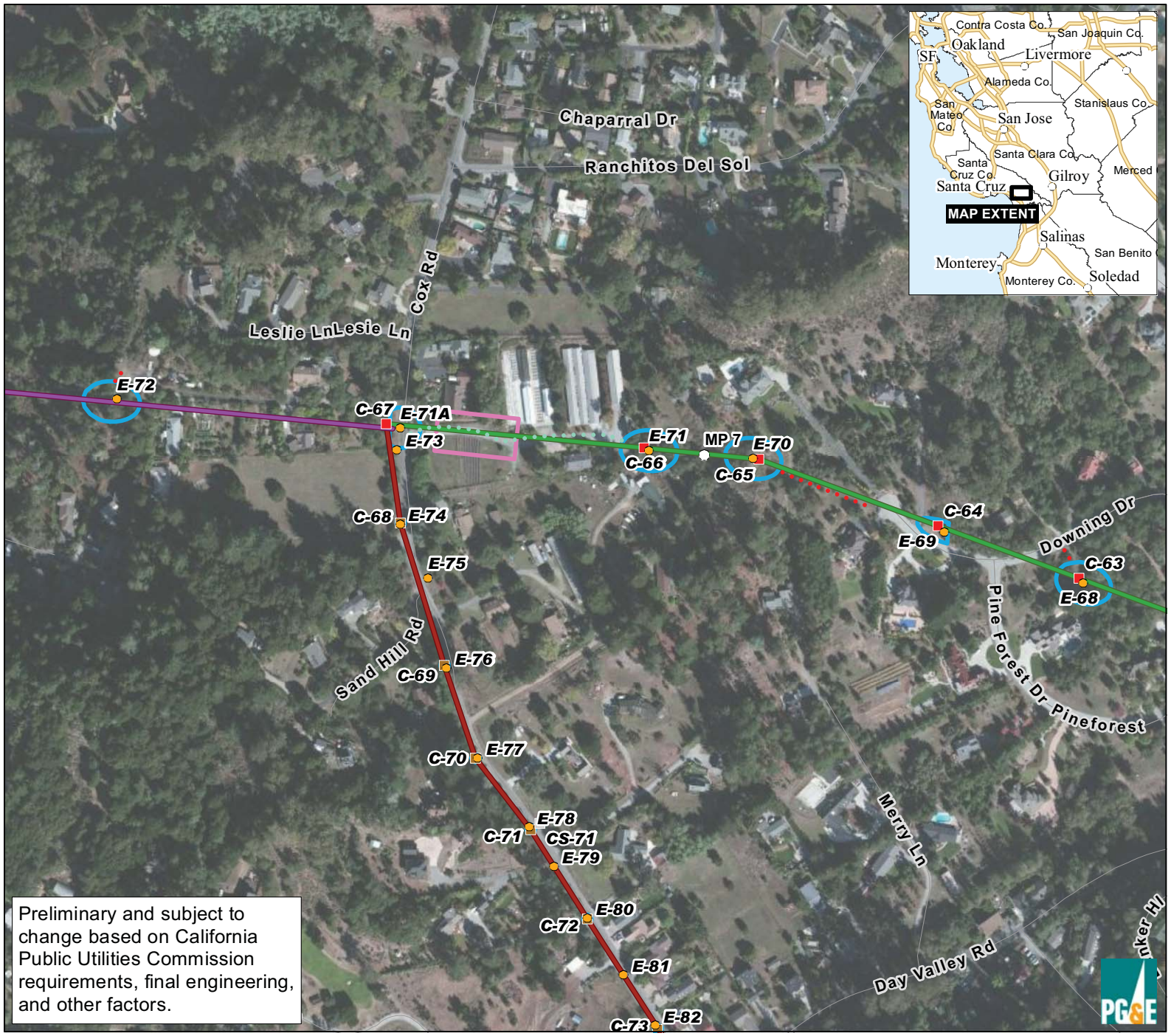

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A
Detailed Route Maps
Map 13 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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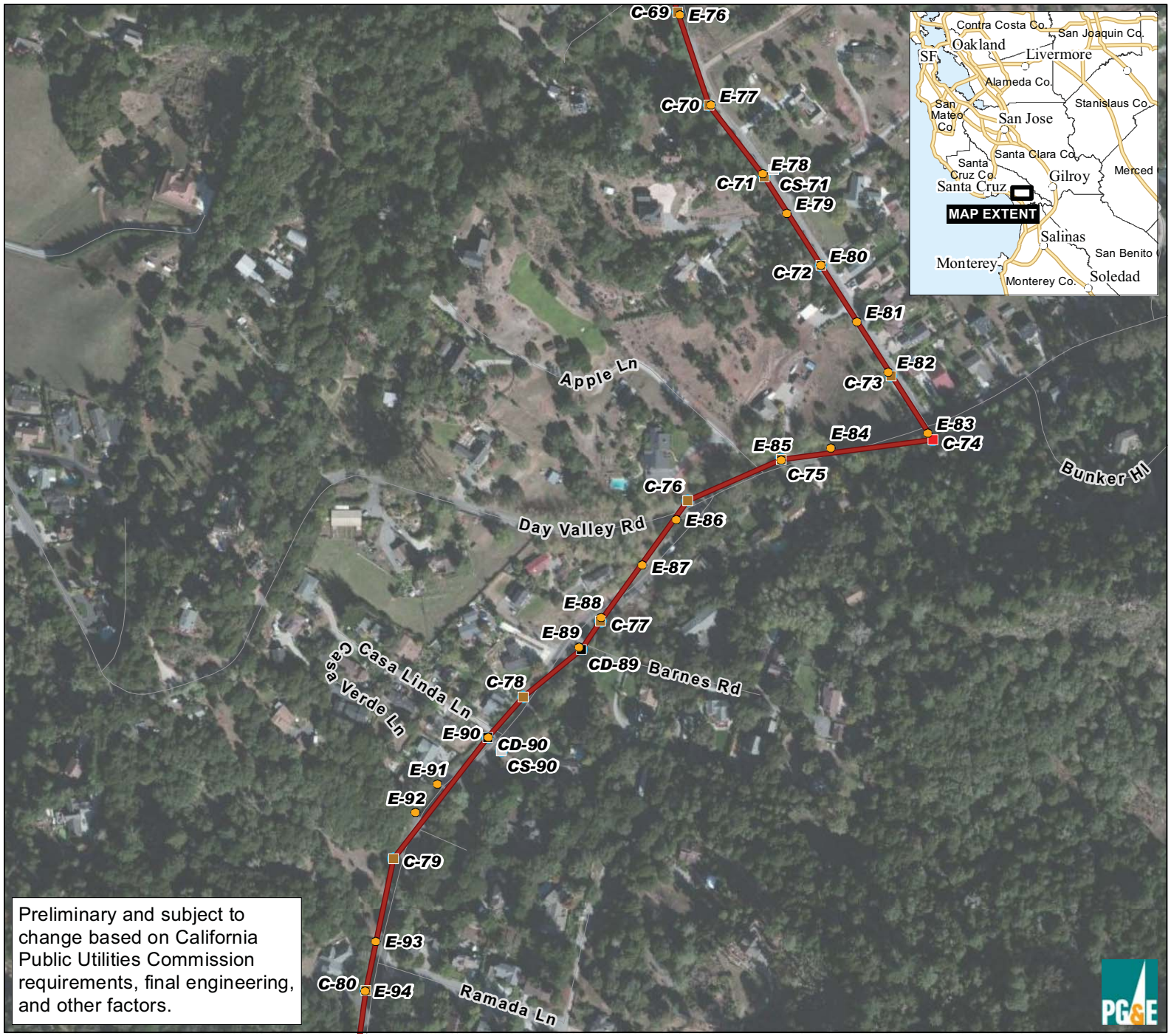

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 14 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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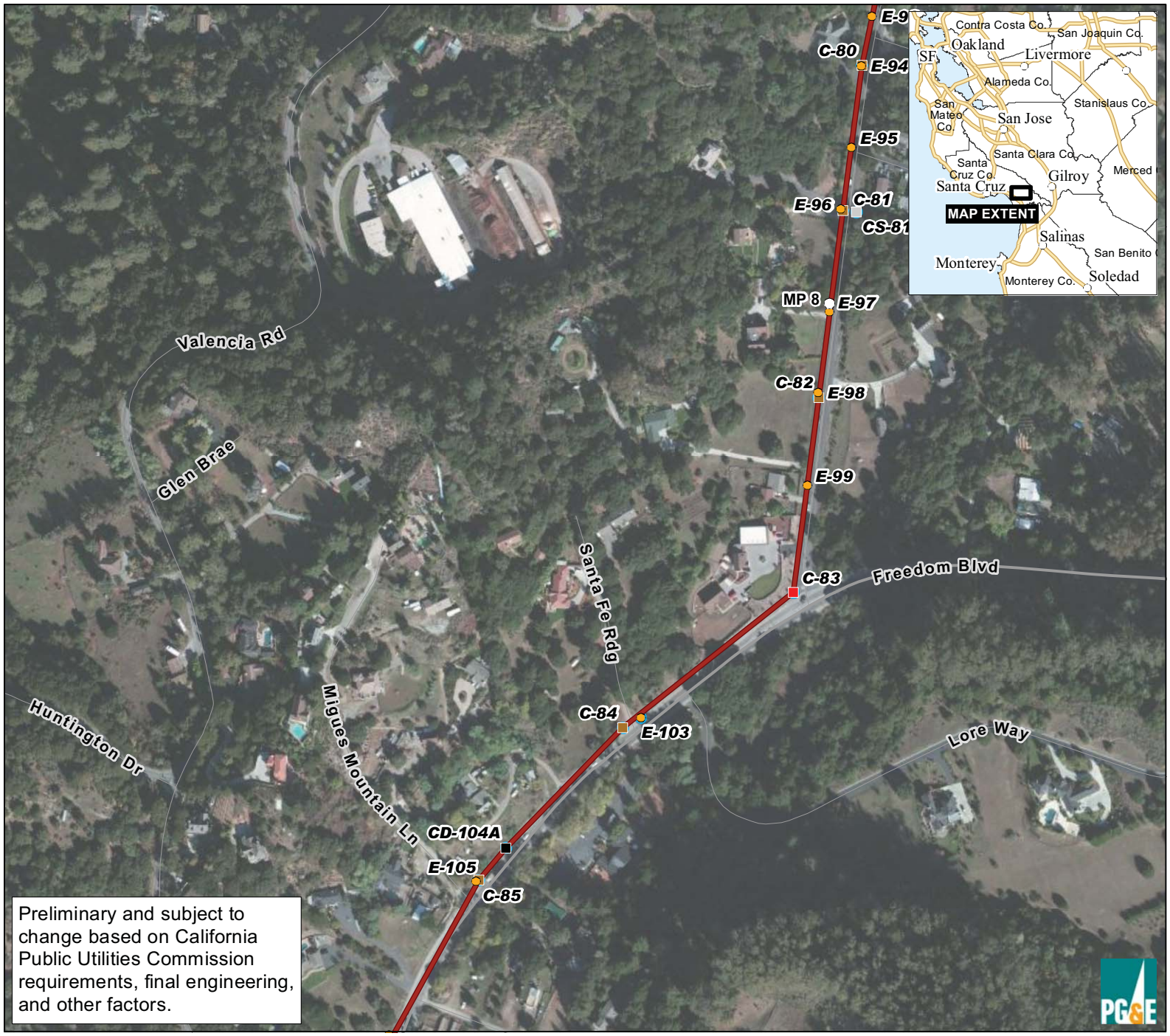

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A
Detailed Route Maps
Map 15 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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0 200 400 Feet

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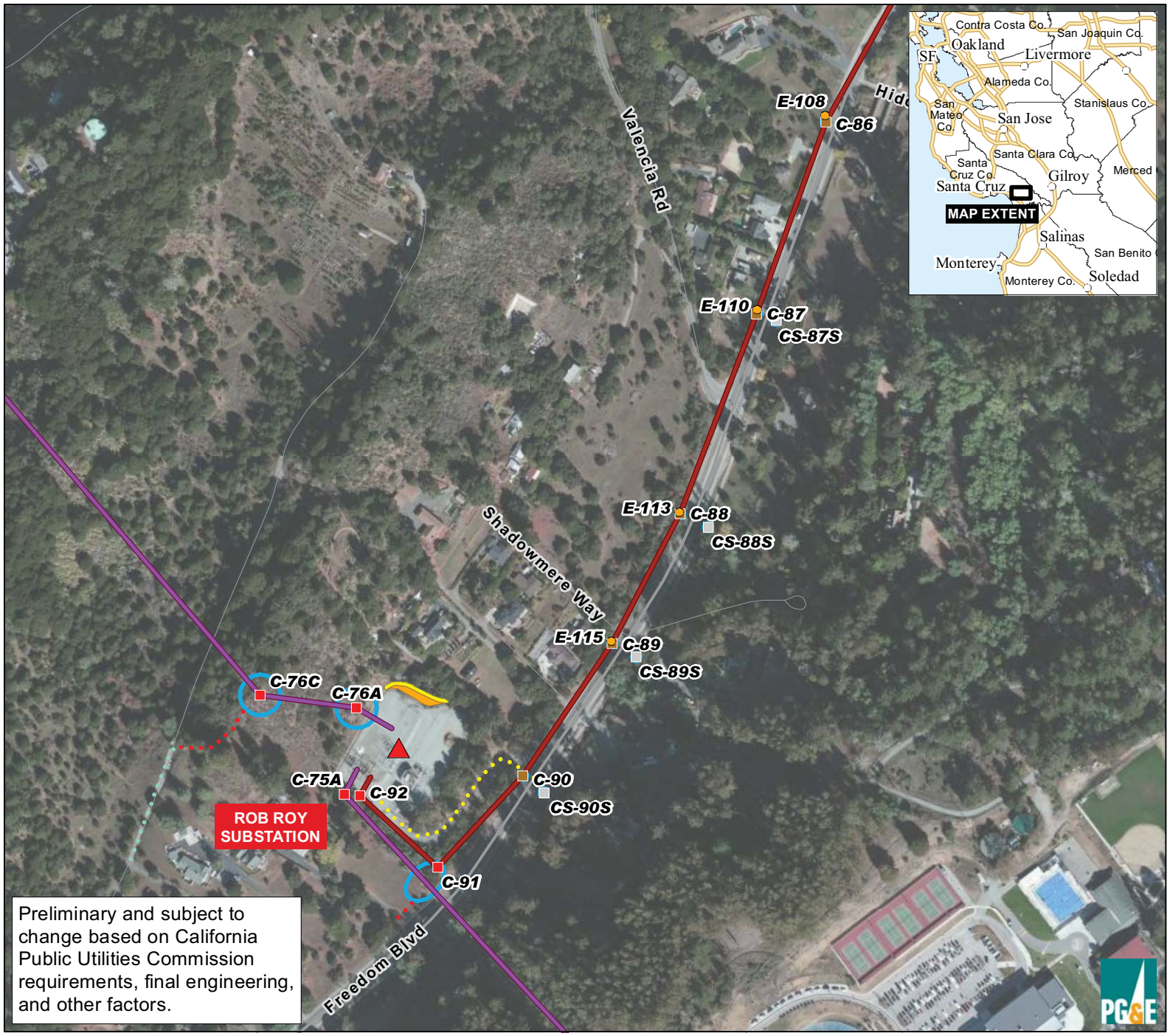

Santa Cruz 115 kV Reinforcement Project

Attachment 2-A Detailed Route Maps Map 16 of 16

- Existing Substation
- Milepost
- Existing Structure
- New Distribution Pole
- New Stub Pole
- New TSP
- New Wood Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

E-X	Existing Pole
C-X	New Pole
CD-X	New Distribution Pole
CS-X	New Stub Pole

Access Road

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road

Work Area

- Contractor Storage Yard
- Guard Structure Work Area
- Landing Zone/Staging Area
- Pole Work Area
- Pull Site
- Permanent Cut and Fill Area
- Rob Roy Substation Modification Area

Scale 1:4,200
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ATTACHMENT 2-B: CONSTRUCTION EQUIPMENT SUMMARY

ATTACHMENT 2-B: CONSTRUCTION EQUIPMENT SUMMARY

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
Site Development						
Site Mobilization	Flatbed Truck	Deliver office trailer/ equipment to the site	5	4	5	0.3
Yard/Work Areas	Tractor-harrow Disc	Clear fire perimeter at yard	1	4	1	4
Site Access Roads and Drainage	Dump/Haul Truck	Transport aggregate and material	2	4	2	0.5
	Brush Hog	Clear vegetation/mow laydown	1	6	1	3
	Backhoe/Loader	Load haul trucks and transport material	1	6	1	3
	Vibrating Roller	Compact soil	1	4	1	4
	Water Truck	Suppress dust	2	4	2	4
	1-Ton Foreman Pickup	Transport supervisors	1	8	1	0.25
Construction Yard/Laydown	6-Man Crew Truck	Install trailer/fencing/ storage containers	1	8	1	0.25
Northern Alignment						
Foundation Installation	Concrete Truck	Pour concrete	3	3	3	0.3
	Tracked Drill Rig with Augers	Excavate foundation hole	1	4	1	4
	Backhoe/Bobcat	Move material	1	6	1	4
	Dump/Haul Truck	Haul excavated materials and import backfill	4	4	4	0.25
	Small Mobile Crane/ Boom Truck/Fork Lift	Place rebar cage	1	4	1	1

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
Foundation Installation (cont.)	Wheel Roller	Compact soil around structure foundations	1	4	1	1
	6-Man Crew Truck	Transport crew	3	8	1	0.25
	1-Ton Foreman Pickup	Transport supervisors	1	8	1	0.25
	Helicopter	Fly concrete to five pole foundations	1	8	1	0.1
TSP Installation	Semi with 40-Foot Trailer	Deliver material to site	2	4	1	0.3
	50 to 70-Ton Crane	Pole erection	2	6	1	2
	Air Compressor	Operate air tools	2	2	1	1
	Portable Generator	Power work areas	2	8	1	2
	Aerial Lift Truck	Provide access to poles	2	4	1	2
	Helicopter	Set TSPs/TSP segments	1	3	1	0.25
Pole Removal	1-Ton Foreman Pickup	Transport supervisors	1	8	1	0.25
	6-Man Crew Truck	Transport crew	2	8	1	0.25
	2-Ton Flatbed Truck	Remove material from site	2	6	1	0.3
	50 to 70-Ton Crane	Assist with pole removal and loading	1	4	1	0.3
	Air Compressor	Operate air tools	2	2	1	1
	Portable Generator	Power work areas	2	8	1	2
	Aerial Lift Truck	Conductor transfer/ removal	2	8	1	2
	Helicopter	Assist with pole removal	1	3	1	0.1
	Chainsaw	Cut poles	1	0.5	1	0.5
Pulling and Stringing	Three-reel Puller	Install conductor	1	6	1	6
	Dual Bull Wheel Tensioner/Tensioner	Pull conductor to final tension	1	8	1	6

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
Pulling and Stringing (cont.)	Wire Reel Trailer	Store and feed conductor	1	No engine	1	No engine
	Helicopter	Assist with conductor installation	2	6	1	0.1
	Hydraulic Press	Splice conductors	1	6	1	1
	Aerial Lift Truck	Provide access to poles	3	6	1	Not at pull site
	Rigging/Line Truck	Assist with conductor installation	2	6	1	2
	Air Compressor	Operate air tools	1	8	1	0.25
	Portable Generator	Power work areas	1	8	1	0.25
	2-Ton Equipment Truck	Maintain helicopter	1	4	1	Not at pull site
	1,500-Gallon Fuel Truck	Fuel helicopter	1	2	1	Not at pull site
	1-Ton Foreman Pickup	Transport supervisor	1	4	1	0.25
	6-Man Crew Truck	Transport crew	3	4	1	0.25
Cox-Freedom Segment						
Foundation Installation	Concrete Truck	Pour Concrete	3	3	3	0.3
	1-Ton Foreman pickup	Transport supervisor	1	4	1	0.25
	6-Man crew truck	Transport crew	1	4	1	0.25
	Tracked Drill Rig with Augers	Excavate foundation hole	1	6	1	4
	Backhoe	Move material	1	6	1	4
	Dump/Haul Truck	Haul excavated materials and import backfill	4	4	4	0.25
	Small Mobile Crane/ Boom Truck/Forklift	Place rebar cage	2	4	1	1
	Wheel Roller	Compact soil around structure foundations	2	4	1	1

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
TSP Installation	Semi with 40-foot Trailer	Deliver material to site	2	4	1	0.3
	50 to 70-Ton Crane	Erect poles	2	6	1	2
	Air Compressor	Operate air tools	2	1	1	1
	Portable Generator	Power work areas	2	8	1	2
	Aerial Lift Truck	Provide access to poles	2	4	1	2
Direct-Bury Pole Installation	1-Ton Foreman Pickup	Transport supervisor	1	4	1	0.25
	6-Man Crew Truck	Transport crew	2	4	1	0.25
	2-Ton Flatbed Truck	Deliver material to site	2	6	1	0.3
	25-Ton Crane/Bucket Truck	Assist with pole placement	2	6	1	4
	20-Ton Derrick Digger	Auger holes	1	8	1	3
	Air Compressor	Operate air tools	2	2	1	1
	Portable Generator	Power work areas	2	8	1	2
	Aerial Lift Truck	Provide access to poles	2	8	1	3
Pole Removal	1-Ton Foreman Pickup	Transport supervisor	1	8	1	0.25
	6-Man Crew Truck	Transport crew	2	8	1	0.25
	2-Ton Flatbed Truck	Remove material from site	2	6	1	0.25
	50 to 70-Ton Crane	Assist with pole removal and loading	1	4	1	1
	Air Compressor	Operate air tools	2	2	1	1
	Portable Generator	Power work areas	2	8	1	2
	Aerial Lift Truck	Assist with conductor transfer/removal	2	8	1	2
	Chainsaw	Cut poles	1	0.5	1	0.5

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
Pulling and Stringing	Three-reel Puller	Install conductor	1	6	1	6
	Dual Bull Wheel Tensioner/Tensioner	Pull conductor to final tension	1	8	1	6
	Wire Reel Trailer	Store and feed conductor	1	No engine	1	No engine
	Hydraulic Press	Splice conductors	1	6	1	1
	Aerial Lift Truck	Provide access to poles	3	6	1	Not at pull site
	Rigging/Line Truck	Assist with conductor installation	2	6	1	2
	Air Compressor	Operate air tools	1	8	1	0.25
	Portable Generator	Power work areas	1	8	1	0.25
	1-Ton Foreman Pickup	Transport supervisor	1	4	1	0.25
	6-Man Crew Truck	Transport crew	3	4	1	0.25
Rob Roy Substation Modification						
Entire Duration of Substation Construction	1-Ton Foreman pickup	Transport supervisor	2	2	2	0.25
	Pickup	Transport inspector	2	2	2	0.25
	6-Man Crew Truck	Transport crew	1	2	1	0.25
	Vendor Pickup	Transport material	1	1	5	0.25
Mobilize and Fence Removal	Backhoe	Remove fence	1	6	1	4
Rough Grading	Paddle Scraper	Level and move material	1	4	1	4
	Bull Dozer	Level and move material	1	4	1	4
	Dump/Haul Truck	Import/export material	3	3	3	0.3
	Skid Steer/Bobcat	Finish station surface	1	2	1	2
	Water Truck	Soil stabilization/dust control	1	2	1	2
Fence Construction	Truck-Mounted Hole Augur	Augur fence post holes	1	6	1	2

Activity Category	Equipment	Use	Approximate Project-Wide Quantity	Approximate Project-Wide Operating Hours	Approximate Site-Specific Quantity	Approximate Site-Specific Operating Hours
Fence Construction (cont.)	1-Yard Portable Mixer	Mix concrete	1	4	1	4
	1-Ton Material Truck	Import fence material	1	3	1	2
Compaction	Water Truck	Dust control	1	3	1	2
	Roller Compactor	Finish backfill	1	6	1	6
	Wacker Tamper	Finish backfill	2	6	2	4
Foundation/Duct Bank Installation	Concrete Truck	Pour concrete	3	3	3	0.3
	Backhoe	Remove fill/import backfill	1	9	1	4
	Trencher	Excavate ground grid/conduit trenches	1	6	1	4
Equipment Installation	Aerial Lift Truck	Connect and inspect equipment	3	5	3	2
	25-Ton Crane/Bucket Truck	Place equipment/control building	1	6	1	4
	Forklift	Unload and move material	1	4	1	4
	Semi with 40-foot Trailer	Deliver materials to the site	3	3	3	0.3
Final Grading and Paving	Paving Machine	Paving station ring road	1	8	1	6
	Skip Loader Tractor	Paving station ring road	1	9	1	6
	Transfer Truck	Import asphalt	1	3	1	0.3
Testing and Commissioning	Bucket Truck	Outdoor check out of equipment	1	6	1	1
Additional Tasks						
Restoration	Pickup	Seeding Crew	1	5	1	5
Restoration	Pickup	SWPPP BMP Installation	1	5	1	5
Environmental Inspection	Pickup	Inspector	1	5	1	5

ATTACHMENT 2-C: ELECTRIC AND MAGNETIC FIELDS BACKGROUND INFORMATION

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.

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).

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.

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.

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%.

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.

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 Mustard gas Tobacco (smoked and smokeless) Gamma radiation
Probably carcinogenic to humans (usually based on strong evidence of carcinogenicity in animals)	Diesel engine exhaust Sun lamps UV radiation 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 Styrene Gasoline engine exhaust Pickled Vegetables 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.

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TABLE OF CONTENTS

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.0 INTRODUCTION

The following sections (3.1 through 3.11) evaluate potential environmental impacts that may result from construction, operation, and maintenance of the Pacific Gas and Electric Company Santa Cruz 115 Kilovolt Reinforcement Project (project). In accordance with the California Environmental Quality Act, the following resource areas were evaluated:

3.1 Aesthetics
3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources
3.3 Air Quality and Greenhouse Gas Emissions
3.4 Biological Resources
3.5 Cultural Resources
3.6 Geology, Soils, and Mineral Resources
3.7 Hazards and Hazardous Materials
3.8 Hydrology and Water Quality
3.9 Noise
3.10 Population and Housing, Public Services, and Utilities and Service Systems
3.11 Transportation and Traffic

Sections 3.1 through 3.11 discuss the existing conditions as they pertain to each resource area and the project's potential impacts to these resources. The beginning of each section contains a checklist summarizing the level of impact (i.e., No Impact, Less-than-Significant Impact, Less than Significant with Mitigation Incorporated, and Potentially Significant Impact) to these resource areas according to the significance criteria used for the analysis. Chapter 4 – Cumulative and Growth-Inducing Analysis discusses past, present, and reasonably foreseeable future projects within the project area and the project's potential to contribute to a significant cumulative effect.

With incorporation of applicant-proposed measures (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 2-6: Applicant-Proposed Measures in Chapter 2 – Project Description.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.1 AESTHETICS

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

3.1.1 Introduction

This section describes the existing aesthetic resources in the vicinity of the project and evaluates potential impacts that may result from construction and operation and maintenance (O&M) of the project. Aesthetic resources are generally defined as both the natural and built features of the landscape that can be seen and that contribute to the public's experience and appreciation of the environment. Aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which its presence will alter the perceived visual character and quality of the environment. Implementation of applicant-proposed measures (APMs) will ensure that potential impacts to aesthetic resources will be reduced to a less-than-significant level.

3.1.2 Methodology

3.1.2.1 Research

The aesthetic resources impacts assessment was based on United States (U.S.) Department of Transportation Federal Highway Administration (FHWA) methods as well as other accepted visual analysis techniques. Consistent with these methods, the aesthetics analysis involved a review of technical information, including project maps and drawings, provided by PG&E to

create computer-generated visual simulations that show the project's appearance in comparison to the existing environment. The California Department of Transportation (Caltrans) California Scenic Highway Program, the Santa Cruz County General Plan, geographic information system (GIS) data, and aerial photos were reviewed to establish the locations of sensitive viewing areas, including local communities, residences, public roadways (in particular, designated scenic routes), historic sites, and public open space or recreation areas.

3.1.2.2 Field Surveys

Environmental Vision conducted field surveys on December 13, April 14, and July 20, 2011 to document existing visual conditions in the project area and to identify potentially affected sensitive viewing locations. Based on California Environmental Quality Act (CEQA) guidance for aesthetic impact evaluation, as well as on field observations, six photographic viewpoints were selected to show a range of representative public views of the project. In preparation for the visual simulations, an additional field survey was conducted on August 12, 2011 by Environmental Vision and Truescape. During this field survey, Truescape re-photographed the six photographic viewpoints selected by Environmental Vision. These photographs became the basis for the visual simulations discussed in Section 3.1.4 Potential Impacts and Applicant-Proposed Measures.

3.1.2.3 Visual Simulation Methods

A digital single-lens reflex camera was used to take the simulation photographs during the field surveys. The simulation methods employ systematic site photography, computer modeling, and rendering techniques. As part of the aesthetics analysis, Truescape produced six visual simulations to illustrate "before" and "after" visual conditions in the project area. The original Truescape-prepared simulations present a horizontal viewing angle of approximately 124 degrees. For the purpose of this analysis, these simulations have been modified to present a horizontal viewing angle of approximately 65 degrees, equivalent to a 28-millimiter lens. The resulting images are approximately 15 inches wide and should be viewed at a distance of approximately 12 inches to gain an optimal impression of the project's scale in relationship to the surrounding landscape. These images are discussed in more detail in Section 3.1.3.2 Environmental Setting and Section 3.1.4 Potential Impacts and Applicant-Proposed Measures.

3.1.3 Existing Conditions

3.1.3.1 Regulatory Background

Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive discretionary jurisdiction over the design, siting, installation, O&M, and repair of electric transmission facilities. Other State agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate such activities, PG&E has taken into consideration local aesthetic and visual resource-related plans and policies as part of its environmental review process. PG&E has also considered potential aesthetic concerns of local residents and visitors passing through the area. Attachment 3.2-A: Policies Consistency Analysis in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources lists the relevant policies and discusses the project's consistency with those policies.

Federal

No federal regulations apply to the project with respect to visual resources.

State

Caltrans Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are eligible for designation as scenic highways and those that have been designated as such. State Route (SR-)1 and SR-152 (which are eligible state scenic highways) are located approximately 0.65 mile and 1.25 miles from the project, respectively. 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 Caltrans for scenic highway approval, and receives the designation. A city or county may propose that routes with outstanding scenic elements be added to the list of eligible highways; however, state legislation is required for them to become designated.

Local

Santa Cruz County General Plan

Policy LCP 5.10.10 of the Conservation and Open Space Element of the Santa Cruz County General Plan defines 24 county roads and 7 state highways as scenic roads. Two of these roads—Amesti Road and Corralitos Road—are currently spanned by the Northern Alignment. The General Plan stipulates that development in the viewshed of scenic roads be sited out of public views. In addition, it states that, where proposed structures are unavoidably visible, visual qualities worthy of protection should be identified and mitigation measures, such as siting, architectural design, and landscaping, should be implemented. Policy LCP 5.10.13 stipulates that grading and land disturbance activities visible from scenic roads should include the blending of contours on the finished surface with the adjacent natural terrain to achieve a natural appearance, and that only native plants appropriate for the area should be used.

Attachment 3.2-A: Policies Consistency Analysis in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources lists these policies and discusses the project's consistency with the policies. Although PG&E is not subject to local discretionary permitting, ministerial permits will be secured, as required. Table 2-5: Potential Permits and Approvals in Chapter 2 – Project Description lists the authorizations that will be required for project construction.

3.1.3.2 Environmental Setting

Regional and Local Setting

The project is located entirely within unincorporated Santa Cruz County (County), within the foothills of the northern California coast and southwest of the Santa Cruz Mountains. The project lies between the City of Watsonville to the southeast and the community of Aptos to the west. The project right-of-way (ROW) crosses near the communities of Day Valley, Corralitos, and Amesti.

The project ROW traverses an area of rolling terrain, including agricultural valleys and grassland, as well as low ridgelines forested with mature trees. The Santa Cruz Mountains, with peaks rising to over 3,000 feet, form a backdrop for many views toward the north. The predominant development pattern throughout the project area is a mix of low-density residential, open space, and agricultural land uses.

Existing nighttime lighting in the project vicinity includes localized lighting sources associated with residences, agricultural facilities, and public facilities, such as schools. Some roadway lighting, including cobra-head fixtures, exists along the eastern end of the Northern Alignment in the more densely settled neighborhood near Green Valley Road. Roadway lighting is also found at intersections along Freedom Boulevard near Rob Roy Substation. In addition, a limited amount of safety and security lighting is located within Rob Roy Substation.

Project Visibility and Project Viewshed

The project viewshed is defined as the general area from which a project is visible or can be seen. For the purpose of describing a project's visual setting and assessing potential visual impacts, the viewshed can be broken down into distance zones of foreground, middleground, and background. The foreground is defined as the zone within approximately 0.25 to 0.50 mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. The middleground can be defined as a zone that extends from the foreground up to approximately 3 to 5 miles from the viewer. The background extends from approximately 3 to 5 miles to infinity.

For the purpose of this analysis, the project's potential effects on foreground viewshed conditions are emphasized. As seen from many locations within the surrounding area, views of the project will be partially or fully screened by intervening natural landform. In general, the project will not be visible from more distant locations due to intervening landform, vegetation, and development. Given these topographic conditions, the presence of intervening vegetation, and the overall length of the project ROW, the project will not be visible in its entirety from any single viewing location.

Potentially Affected Viewers

The project will be visible from some nearby locations along public roads. In addition, it will be seen from limited residential and public open space areas. Within the project viewshed, there are three primary types of potentially affected viewer groups—roadway motorists, residents, and recreation users.

Motorists, the largest viewer group, include people traveling on local roadways and on arterial roads, such as Freedom Boulevard. Affected views are generally brief in duration, typically lasting less than 1 minute. The viewer sensitivity of this group is considered to be low to moderate.

The second viewer group includes residents in the vicinity of the project. Although the project area includes the semi-rural outskirts of Watsonville and Aptos, the project is located within the view of numerous residences. The most densely developed residential areas are located at the

eastern and western ends of the ROW. Residential views tend to be long in duration, and the sensitivity of this viewer group is considered moderate to high.

The third group of potentially affected viewers includes recreational users at the northern end of Pinto Lake County Park. Recreational views tend to be brief or moderate in duration, and the sensitivity of this viewer group is considered moderate to high.

Landscape Units

A set of five distinct sub-areas or landscape units has been identified for the purpose of documenting and describing the project's foreground viewshed. Each landscape unit has distinguishing topographic, vegetation, and/or development patterns. Table 3.1-1: Summary of Landscape Units lists the landscape units identified within the project viewshed, and includes the approximate milepost (MP) locations, the primary affected viewers, and the number of residences within 500 feet.

Table 3.1-1: Summary of Landscape Units

Project Component	Landscape Unit	Approximate MP	Primary Affected Viewers	Approximate Number of Residences within 500 feet
Northern Alignment	Green Valley	0.0-1.2	Residents, Motorists	230
	Pinto Lake	1.2-1.9	Park Users, Residents	70
	Corralitos	1.9-4.5	Motorists, Residents	30
	Pleasant Valley/Day Valley	4.5-7.1	Residents, Motorists	100
Cox-Freedom Segment	Cox-Freedom	7.1-8.8	Motorists, Residents	120

Visual Character

Figure 3.1-1: Landscape Units and Photo Viewpoint Locations shows the project within its regional and local landscape context and gives the photo viewpoint locations for the set of 22 representative photographs that depict the visual conditions and public views of the project area. Figure 3.1-2: Representative Photographs provides representative photographs of the project area. Table 3.1-2: Representative Photographs by Landscape Unit summarizes the landscape units in the project area and provides the representative photograph for each unit. A reference to the related photo simulation, described further in Section 3.1.4 Potential Impacts and Applicant-Proposed Measures, is also included. The visual character of each landscape unit, as shown in the representative photographs, is described in the subsections that follow.

Table 3.1-2: Representative Photographs by Landscape Unit

Project Component	Landscape Unit	Representative Photograph Numbers within Figure 3.1-2	Representative Simulation Figure
Northern Alignment	Green Valley	1 through 4	3.1.3
	Pinto Lake	5 through 6	3.1.4
	Corralitos	7 through 10	3.1.5
	Pleasant Valley/Day Valley	11 through 18	3.1.6 and 3.1.7
Cox-Freedom Segment	Cox-Freedom	19 through 22	3.1.8

Green Valley

The Green Valley Landscape Unit follows approximately 1 mile of the Northern Alignment from its origination at Green Valley Substation to its crossing of Green Valley Road after approximate MP 1.2. The topography in this area is relatively flat with mostly sparse vegetative cover. Single-family homes and nearby agricultural fields characterize this unit.

Photograph 1 (taken from Minto Road) includes the existing substation and associated power poles, which are visible beyond an open field in the foreground. The Santa Cruz Mountains appear in the backdrop of this view. From Green Valley Substation, the project ROW runs north, bordered by agricultural fields to the east and the Green Valley residential neighborhood to the west. The substation, several power poles, and a lattice steel tower appear near the center of Photograph 2 (taken from Agate Drive just north of the substation). Adjacent residential development is visible on the right, and an open field is seen on the left. Residences on nearby Onyx Drive have similar unobstructed views of the substation and associated power line structures. The project ROW turns west at Dalton Lane, a small rural road (Photograph 3). Residential areas border Dalton Lane on both sides. Photograph 4 from Arroyo Drive at Mark Avenue shows the existing wood power poles with distribution underbuild situated behind these residences.

Primary viewers in this landscape unit are residents in unincorporated Santa Cruz County and motorists on local roadways.

Pinto Lake

Pinto Lake County Park is the primary feature within this landscape unit, which runs west from Green Valley Road, an arterial street, to Kliewer Lane near approximate MP 1.9. Pinto Lake County Park is a landscaped public recreation facility characterized by a mixture of open lawns and mature tree clusters. The park includes sports fields, picnic facilities, a playground, a fishing pier, and paved parking area. As seen in Photographs 5 and 6, the project ROW passes near some of these facilities. However, mature trees screen views of the line from some locations in the park.

Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

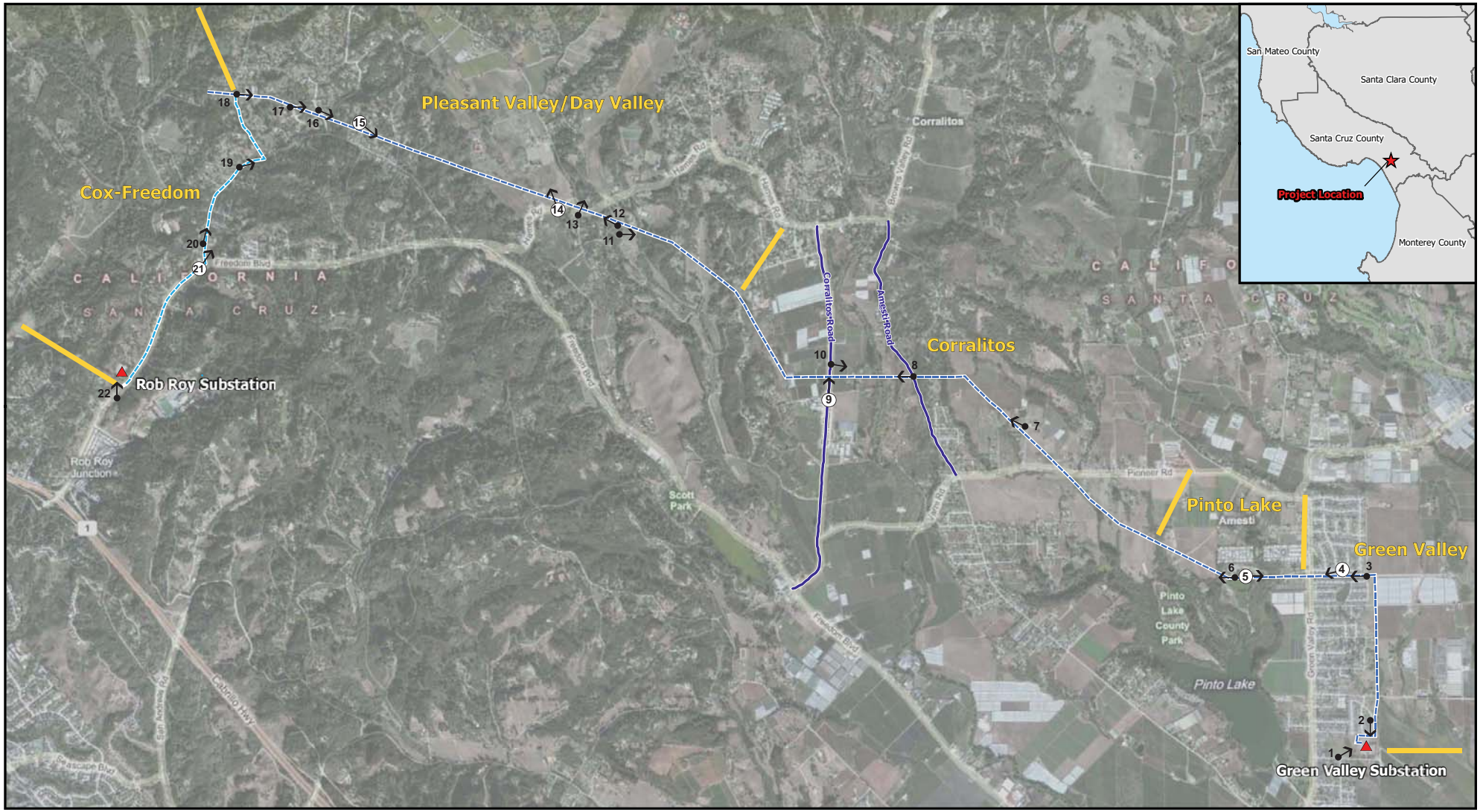

Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Santa Cruz 115 kV Reinforcement Project

- Existing Substation
- Northern Alignment
- Cox-Freedom Segment
- Landscape Unit Boundary
- 1 → Photo Viewpoint Location and View Direction
- (4) → Simulation Viewpoint Location and View Direction
- Santa Cruz County Scenic Roads Spanned by the Project

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Figure 3.1-2: Representative Photographs

Photograph 1. Minto Road at Meidl Avenue looking northeast toward Green Valley Substation

Photograph 2. Agate Drive at Lapis Drive looking south toward Green Valley Substation

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 1 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 3. Dalton Lane looking west

Photograph 4. Arroyo Drive at Mark Avenue looking southwest

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 2 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 5. Pinto Lake Park looking east

Photograph 6. Pinto Lake Park looking west

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 3 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 7. Pioneer View Road looking northwest

Photograph 8. Amesti Road looking west

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 4 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 9. Corralitos Road near Skylark Lane looking north

Photograph 10. Corralitos Road looking east

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 5 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 11. Hames Hollow looking east

Photograph 12. Hames Hollow looking northwest

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 6 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 13. Pleasant Valley Road at Hames Road looking north

Photograph 14. Hames Road near Pleasant Valley Road looking north

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 7 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 15. Jingle Lane near Day Valley Road looking southeast

Photograph 16. Meadow Road at Pine Forest Drive looking southeast

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 8 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 17. Downing Drive looking east

Photograph 18. Cox Road looking east

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 9 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 19. Day Valley Road near Cox Road looking east

Photograph 20. McDonald Road near Freedom Boulevard looking north

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 10 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 21. Freedom Boulevard near McDonald Road looking northeast

Photograph 22. Freedom Boulevard near Rob Roy Substation looking north

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations

Figure 3.1-2: Representative Photographs Sheet 11 of 11
Santa Cruz 115 kV Reinforcement Project

Photograph 6 shows the westernmost existing pole within the park, where the line turns to the northwest leaving the park. The area just west of the park includes flat open agricultural fields and a few residences situated within the community of Amesti. Viewers in this area primarily consist of Pinto Lake Park users, including those traveling on the entrance road to the park. Residences in this landscape unit also have views toward the project; however, to a large extent, the residential views toward the project are substantially screened by mature vegetation.

Corralitos

The project ROW, as it runs generally northwest from Kliewer Lane, traverses a sparsely settled area south of the community of Corralitos. This area, the Corralitos Landscape Unit, is primarily agricultural, and is located within a gently sloping landscape surrounding Corralitos Creek. Land uses consist of an orchard, vineyards, row crops, and pastures interspersed with wooded riparian corridors, as well as scattered single-family residences.

The project ROW in this area crosses a number of local roads, including Pioneers Road and Pioneer View Road (as shown in Photograph 7), as well as two County scenic routes—Amesti Road and Corralitos Road. Photograph 8, an open view from Amesti Road where it crosses the project, depicts the existing single-circuit line passing overhead. Three-pole structures are seen in the distance crossing Corralitos Creek. An existing wood pole also appears in the foreground, near the center of this view. The section of Amesti Road just south of the project ROW is currently closed to through traffic due to a landslide. As a result, public views of the project are limited in this area. There is some recreational use of Amesti Road south of the project crossing by bicyclists and pedestrians. Intervening terrain and vegetation generally screen views of the project from this portion of Amesti Road. Photograph 9, taken from Corralitos Road near Bradley Elementary School, shows the existing power line crossing the road; an existing pole structure is visible on the left side of the road approximately 500 feet away. From this location, a row of conifers partially screens views of the line; however, an existing distribution line that is not a part of the project runs along the roadway; several wood poles associated with this line are visible. Photograph 10 shows the view toward the project from farther north on Corralitos Road looking east.

From this roadway location, a local distribution wood pole line, and orchard trees appear in the foreground. Farther south, dense vegetation along Corralitos Creek can be seen. Beyond the orchard, upper portions of two project wood poles are partially visible against the sky. However, the rolling topography and existing mature vegetation screen views from many locations. Existing vertical elements seen within this landscape setting include wood power poles situated along the project ROW, as well as other wood utility poles.

Primary viewers in this landscape unit include a limited number of rural residents. Viewers also include motorists on Corralitos Road, Pioneers Road, and other local roadways spanned by the project.

Pleasant Valley/Day Valley

West of Corralitos after approximate MP 4.5, the project ROW enters an area of more hilly topography with more densely wooded vegetation and residential development. This portion of the project ROW lies at the northeastern edge of the community of Aptos where wooded ridges

are developed with larger single-family residences. Orchards and vineyards are located in valleys. The majority of residential development is found within the western portion of this section near the Day Valley community.

The existing ROW is adjacent to and visible from a number of residences and public roadways in this area, including Day Valley Road, Hames Road, Pleasant Valley Road, Meadow Road, and Cox Road. Photograph 11 depicts a view looking east toward the project ROW as it traverses a wooded ridgeline. A wood pole can be seen near the center of the photograph, partially screened by vegetation at its base. However, a second structure, approximately 300 feet to the right, is completely screened at this location due to dense vegetation. As seen in Photograph 12, taken from a location adjacent to a residence on Hames Hollow, and Photograph 13, taken from Pleasant Valley Road at Hames Road, vegetation often screens the lower portions of existing structures along the ROW. More open views toward the project exist farther west on Hames Road, as shown in Photograph 14. At this location, relatively flat topography and somewhat less vegetation allow an open view toward the project ROW; however, the ROW recedes into a more heavily wooded area in the distance. Just north of Day Valley Road in the community of Day Valley, the ROW passes within approximately 100 feet of several residences, crossing Quail Run, Jingle Lane (Photograph 15), Meadow Road, Pine Forest Drive, and Downing Drive (Photograph 17). Photograph 16, taken from Meadow Road, shows the line running just north of an historic barn. The Northern Alignment ends just west of Cox Road (Photograph 18), and at this point the project ROW continues south.

Viewers in the Pleasant Valley/Day Valley Landscape Unit are limited to residents in the communities of Pleasant Valley and Day Valley, as well as motorists on a number of lightly traveled local roadways.

Cox-Freedom

At Cox Road, just after approximate MP 7.1, the ROW departs from the existing power line and runs approximately south to the existing Rob Roy Substation on Freedom Boulevard. This portion of the project ROW is approximately 1.7 miles long and parallels several roadways, overbuilding existing distribution lines. Mature trees and shrubs line much of the roadside; as it approaches the communities of Rio Del Mar and Aptos, the residential density increases.

As seen in Photographs 19 and 20, taken from Day Valley Road and McDonald Road, respectively, residences are set back from the roadway, and dense roadside vegetation is typical. Existing wood poles and overhead conductors are visible features within the landscape. In some cases, such as that shown in Photograph 19, vegetation screens views from homes toward these features; in other cases, such as that shown in Photograph 20, residential views are unobstructed. Photograph 21 and Photograph 22 show views from Freedom Boulevard, an arterial roadway linking the community of Day Valley with SR-1.

Rob Roy Substation is located approximately 150 feet west of Freedom Boulevard, behind dense roadside vegetation. As seen in Photograph 22, several existing wood poles are visible along the side of Freedom Boulevard; the substation, however, seen at the left side of the photograph, is largely screened by vegetation. Dense vegetation also screens views of the substation from

adjacent residences. Aptos High School is located less than 1,000 feet to the east. Views from the high school are screened by topography and vegetation.

Primary viewers in the Cox-Freedom Landscape Unit are motorists on Freedom Boulevard and local roadways. Within this landscape unit, a considerable number of residents and a school lie within 0.25 mile of the project ROW. However, dense vegetation largely screens residential views and views from the school toward the project ROW.

3.1.4 Potential Impacts and Applicant-Proposed Measures

3.1.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines, which considers visual impacts to be significant if they would:

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

In applying these criteria to determine significance, the extent of the project's visibility from sensitive viewing locations, the degree to which the various project elements would contrast with or be integrated into the existing landscape, the extent of change in the landscape's composition and character, and the number and sensitivity of viewers were taken into account. Project conformance with public policies regarding visual quality was also considered.

3.1.4.2 Applicant-Proposed Measures

Implementation of the following APMs will reduce potentially significant impacts to aesthetics to a less-than-significant level:

APM AES-01. Clean Construction Work Areas.

Construction work areas will be kept as clean and inconspicuous as practical.

APM AES-02. Use of Non-Reflective Conductors and Equipment.

Non-reflective 115 kV conductor and insulators will be installed along the Northern Alignment and Cox-Freedom Segment to minimize the reflectivity and general visibility of the line.

APM AES-03. Use of Self-Weathering Poles.

The new and replacement tubular steel poles (TSPs) that will be installed will be manufactured of self-weathering steel.

APM AES-04. Nighttime Lighting Installation.

The new lighting at Rob Roy Substation will use non-glare or hooded fixtures, and will be directed to reduce spillover into areas outside the substation site and minimize the visibility of lighting from off-site locations.

APM AES-05. Poles Near Residences.

To reduce the potential visibility of new poles as seen from a limited number of residences within approximately 250 feet, where relatively unobstructed views of the project are seen and the new structures appear prominent, PG&E will consult with residential property owners regarding the potential purchase of trees and large shrubs for visual screening to be installed at key locations on residential properties, where feasible. The selected plant materials will be ecologically appropriate to the local landscape setting (in terms of water usage, horticultural and soil requirements, etc.) and will be consistent with PG&E and CPUC requirements for landscaping in proximity to power facilities.

3.1.4.3 Question 3.1a – Would the project have a substantial adverse effect on a scenic vista? – No Impact

For the purpose 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. No recognized scenic vistas have been identified within the project viewshed. Therefore, there will be no impact.

3.1.4.4 Question 3.1b – 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

There are no designated state scenic highways in the project vicinity or in Santa Cruz County. The nearest eligible state scenic highways—SR-1 and SR-152—are located 0.65 mile and 1.25 miles away from the project, respectively, and the project will not be visible from these roadways. Therefore, the project will not affect scenic resources within a state scenic highway corridor, and there will be no impact.

3.1.4.5 Question 3.1c – Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction – Less-than-Significant Impact

Construction-related visual impacts associated with 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 the installation of the new power poles. While construction is expected to take approximately 8 to 12 months, considerably less time will be spent at each location along the project alignment. To varying degrees, construction activities will be noticeable to local residents, motorists, and recreational users. These temporary construction-related visual impacts will be less than significant. Implementation of APM AES-01 will further minimize this impact by minimizing local residents' and motorists' views of construction work areas and laydown areas. As a result, impacts will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

The project involves rebuilding an approximately 7.1-mile-long existing power line and overbuilding approximately 1.7 miles of new power line in a landscape where utility-related structures are established landscape features. The project will introduce new or replacement TSPs and wood poles and overhead conductors to a landscape in which existing electric utility structures, including power poles and overhead lines, are currently seen by the public.

A set of six before and after visual simulations depict the project's appearance as seen from key public viewpoints within the five landscape units. Table 3.1-3: Summary of Visual Simulation Views presents an overview of the visual simulations in terms of the project component, location of each viewpoint, visual change depicted, and approximate viewing distance to the project. The following subsections discuss and evaluate the project's potential visual effects on key public views by landscape unit, as represented by the visual simulations summarized in Table 3.1-3: Summary of Visual Simulation Views.

Table 3.1-3: Summary of Visual Simulation Views

Project Component	Visual Simulation Location	Representative Simulation Figure	Visible Changes as a Result of the Project	Approximate Distance to the Project (feet)
Northern Alignment	Arroyo Drive	3.1-4	Installation of three new TSPs and topping of three wood poles; replacement of three existing wood poles with two new TSPs	250
	Pinto Lake Park	3.1-6	Replacement of several wood poles with new TSPs	350
	Corralitos Road	3.1-8	Replacement of wood poles with two new TSPs	500
	Hames Road	3.1-10	Replacement of three wood poles with three new TSPs	350
	Jingle Lane	3.1-12	Replacement of five wood poles with five new TSPs	300
Cox-Freedom Segment	Freedom Boulevard	3.1-14	Installation of one new TSP and one new wood pole	250

As described in the following subsections and as shown on Figures 3.1-3 through 3.1-14, the project represents an incremental visual change to the existing landscape setting. In general, the new power poles are taller than the existing structures; however, this change is not anticipated to be significant because the majority of lines and poles are already in place.

Close-range, unobstructed views of the project will occur from limited places along public roadways and from a limited number of nearby residences. However, existing vegetation in the project area provides considerable screening with respect to public and residential views toward the project. Additionally, the project will not obstruct views toward the Santa Cruz Mountains.

The project's effect on existing vegetation will be minimal, consisting primarily of tree trimming along portions of the project ROW and some tree removal in areas where the ROW will be expanded. These activities will be limited to where the line currently exists and is already largely cleared of trees; thus, the additional vegetation removal will not be very noticeable. To further minimize impacts on viewsheds, APM AES-02 calls for use of non-reflective conductors and insulators to reduce visibility and glare. Additionally, APM AES-03 requires the use of self-weathering, rust-colored TSPs, which will resemble existing wood utility poles and blend in with the surrounding landscape. The overall change brought about by the project will not substantially degrade the existing visual character or quality of the landscape setting. As a result, impacts will be less than significant.

Potential changes in visual character to each landscape unit are discussed in further detail in the subsections that follow.

Green Valley

Figure 3.1-3: Existing View from Arroyo Drive represents a view from Arroyo Drive in the residential area north of Green Valley Substation. From this location, a line of existing wood poles and overhead conductor appears on the left side of the road, behind the residences. This section of the project ROW runs directly behind a residential neighborhood on the outskirts of the City of Watsonville. The cross arms mounted at the top of these existing wood power poles carry the three conductors of the single-circuit power line, while various utility lines are mounted below on additional cross arms or fastened directly to the pole itself.

Figure 3.1-4: Visual Simulation from Arroyo Drive shows the three replacement TSPs closest to the photo viewpoint. A limited number of residences, which are directly north of Green Valley Substation, have unobstructed close-range views of the substation and existing project ROW. Several new TSPs will be introduced along the project ROW in the immediate substation vicinity. Due to their height and proximity to several residences, the new poles will represent a somewhat noticeable change, particularly with respect to close-range unobstructed residential views. The general appearance (color and overall form) of the existing and replacement poles is similar, although the replacement poles are taller and thus more visible. However, it is anticipated that the impact of this somewhat noticeable change to residential views will be reduced with the implementation APM AES-05, which includes providing additional landscaping to visually screen areas where poles are visible to residents.

Because the proposed TSPs have symmetrical cross arms, the replacement poles will present a slightly more unified visual effect than the existing poles (which have asymmetrical upper cross arms). Additionally, three existing poles will remain in place; however, they are shown as being shorter (topped) to just above the height of the existing distribution line. In the background of Figure 3.1-4: Visual Simulation from Arroyo Drive, the upper parts of two additional replacement poles are barely visible beyond the trees and can be partially seen against the sky.

Figure 3.1-3: Existing View from Arroyo Drive

View from Arroyo Drive at Mark Avenue looking southwest (VP 4)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

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Figure 3.1-3: Existing View from Arroyo Drive
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-4: Visual Simulation from Arroyo Drive

Visual Simulation of Proposed Project (VP 4)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

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Figure 3.1-4: Visual Simulation from Arroyo Drive
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-4: Visual Simulation from Arroyo Drive indicates that the overall change will not substantially affect motorists' view, given the presence of the existing power line and the relatively brief duration of the view. In this respect, the project represents an increment of change that will not substantially alter the existing visual character of the landscape as viewed from this location. Within the Green Valley Landscape Unit, the project will mainly involve the replacement of single-circuit poles with roughly the same number of double-circuit poles; however, four existing single-circuit angle poles will be replaced by four pairs of single-circuit angle poles, which will double the number of visible structures at these locations. Nevertheless, because substation facilities and several other utility poles already exist in these locations, the visual change will be incremental and will not substantially alter the existing landscape setting. Additionally, implementation of APM AES-05 will reduce potential visual effects on residents by using landscaping to provide additional visual screening where poles are visible. As a result, impacts will be less than significant.

Pinto Lake

Figure 3.1-5: Existing View from Pinto Lake Park includes wood poles and overhead line near the center of the photograph. A meandering pathway runs through the park underneath the existing line. Picnic tables are located on both sides of this path. A covered picnic area and sports field are visible on the right side of the view. Informally placed mature trees and distant mountains in the backdrop are also elements of this landscape setting. The nearest pole seen in this photograph is wood, approximately 65 feet tall, and situated approximately 350 feet away from this viewpoint. Also visible in the photograph is the shadow of an existing power pole located directly behind the viewpoint.

Figure 3.1-6: Visual Simulation from Pinto Lake Park shows the existing wood poles replaced with new, taller, self-weathering TSPs. The nearest replacement TSP seen in the foreground is approximately 100 feet tall and approximately 330 feet from the viewpoint. As indicated by the removal of the shadow in the center foreground, the simulation also conveys the removal of the existing wood pole directly behind the viewer. The new TSPs will be similar in color to the wood poles. As shown in Figure 3.1-6: Visual Simulation from Pinto Lake Park, the new TSPs are taller than the wood poles they will replace and will be somewhat more noticeable; however, they will not obstruct distant views of the mountains currently seen from this location. In addition, O&M of the project will not result in the removal of the existing mature trees in this area of the park. These existing trees provide considerable screening with respect to views toward the project. In addition, fewer poles will be located within the park, which may reduce the visibility of the power line within the area. Given the presence of the existing power line and mature tree cover, the project represents an incremental change that will not substantially alter the visual character of the park landscape as viewed from this and other nearby locations. APM AES-03, which requires self-weathering poles to be installed, will further reduce the impact within this landscape unit due to the proposed poles' ability to more closely mimic the look of the existing wood poles. As a result, impacts will be less than significant.

Corralitos

Figure 3.1-7: Existing View from Corralitos Road depicts a view north toward the project ROW from Corralitos Road, a County scenic route, near Bradley Elementary School. Agricultural fields, partly covered with plastic enclosures, are visible in the foreground against a group of tall

conifer trees that appear on the left side of the road. Also on the left, wood distribution poles supporting overhead conductors follow the roadway, receding toward the horizon. The distant Santa Cruz Mountains can be seen in the backdrop. From this vantage point, the existing power line is approximately 500 feet away, and a three-pole wood structure is visible near the center of the view on the left side of the road.

Figure 3.1-8: Visual Simulation from Corralitos Road shows two self-weathering replacement TSP structures. One TSP, located on the right side of Corralitos Road (approximately 200 feet from the roadway), appears against a backdrop composed of landscape and sky. To the left of the conifer trees, the upper portion of a second replacement TSP is visible primarily against the sky.

The simulation also depicts the removal of the 115 kV circuit on the top of an existing wood pole along the left side of Corralitos Road. The new self-weathering TSPs appear similar in color to existing wood poles in the vicinity, although the taller replacement poles are somewhat more visible against the skyline. However, because existing poles and overhead line are established elements in the landscape setting and because a multi-pole structure will be replaced by a single pole, the project represents an overall incremental change that will not substantially alter the existing composition and character of the view. Additionally, because the new poles will be set back from the roadway, the visual change to views from Corralitos Road will be diminished.

Within the Corralitos Landscape Unit, the project route crosses several roads (including Amesti Road and Corralitos Road). Although views are available from some residences in this area, most views in this landscape unit are experienced by motorists traveling on these roads. Figure 3.1-8: Visual Simulation from Corralitos Road presents a relatively open view toward the project; however, from many roadway locations, the project will be more heavily screened. Within much of the western part of this landscape unit, multi-pole wood structures will be replaced with TSPs. However, in the eastern part of this landscape unit, single wood poles will be replaced with TSPs and the visual change will be more comparable to the effect shown in Figure 3.1-4: Visual Simulation from Arroyo Drive. In this unit, a relatively small number of residences are located close to the project ROW.

Although views are available from some residences in the Corralitos Landscape Unit, most of the views will be experienced by motorists traveling in the area. There are open views of the project ROW from Amesti and Corralitos Roads, but the project ROW is generally screened by existing vegetation. In addition, power poles are generally set back from the roads in this landscape unit.

Because there are existing power poles in the viewshed, replacement poles will have a more unified look, and existing vegetation screens many of the power poles, impacts from larger poles are expected to be less than significant. Implementation of APM AES-03 will ensure that the proposed TSPs are similar in color to the existing wood poles, further reducing project impacts.

Pleasant Valley/Day Valley

Within this landscape unit, the project involves the removal of existing wood poles, and replacement with TSPs. Although some open views toward the project are available, views in this area are screened (either partially or entirely) by dense vegetation. Potential visual changes as viewed from Hames Road and Jingle Lane are described in the subsections that follow.

Figure 3.1-5: Existing View from Pinto Lake Park

View from Pinto Lake Park looking east (VP 5)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-5: Existing View from Pinto Lake Park
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-6: Visual Simulation from Pinto Lake Park

Visual Simulation of Proposed Project (VP 5)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-6: Visual Simulation from Pinto Lake Park
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-7: Existing View from Corralitos Road

View from Corralitos Road near Skylark Lane looking north (VP 9)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-7: Existing View from Corralitos Road
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-8: Visual Simulation from Corralitos Road

Visual Simulation of Proposed Project (VP 9)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-8: Visual Simulation from Corralitos Road
Santa Cruz 115 kV Reinforcement Project

Hames Road

Figure 3.1-9: Existing View from Hames Road is a motorist's view from an area where unobstructed views toward the project ROW are available. Existing wood poles and overhead conductors appear prominently in the foreground along the road. Beyond the open field, three wood poles can be seen receding into the background. On the left side of the view, two residences are situated along Hames Road. As seen from this view, a wooded ridgeline located behind the residences blocks more distant views toward the project.

Figure 3.1-10: Visual Simulation from Hames Road depicts the new TSPs that will replace the existing multiple-pole wood structures. The replacement TSPs are approximately 30 feet taller than the wood poles; however, the TSPs are more streamlined in appearance and have a smaller footprint. Additionally, the form and color of the TSPs is similar to that of the existing wood poles and fence poles seen in the landscape setting. A comparison of the existing view and the simulation view demonstrates that the new poles are not particularly more noticeable than existing structures.

Jingle Lane

Figure 3.1-11: Existing View from Jingle Lane shows the project ROW within 100 feet of several residences and includes three of the residences that border the project ROW. Although this landscape unit includes open fields, views from residences in the area are, for the most part, screened by mature vegetation. Several wood power poles are visible in this view. Near the center of the photograph is an unobstructed view toward one of the structures, an "H" frame. Mature vegetation partially screens lower portions of the two poles.

Figure 3.1-12: Visual Simulation from Jingle Lane depicts the project's appearance with the removal of the existing wood power poles and the introduction of the new TSPs. The new TSPs, at approximately 80 to 85 feet, are taller than the existing wood poles (which are approximately 53 feet). The simulation shows an unobstructed view of one TSP, seen against a backdrop of vegetation and skyline. Beyond this, the upper portions of three additional TSPs are visible against the sky. Existing vegetation substantially screens these new TSPs, and the vegetation backdrop effectively reduces the visibility of the lower portion of the closest replacement pole.

The overall incremental visual change associated with the project will not substantially alter the existing visual character of the landscape within the Pleasant Valley/Day Valley Landscape Unit. For example, the existing utility structures and overhead lines seen in the foreground of Figure 3.1-9: Existing View from Hames Road are also present in Figure 3.1-10: Visual Simulation from Hames Road. As a result, the overall incremental visual change associated with the project will not substantially alter the existing visual character. In addition, the replacement of existing multi-pole structures with single poles will reduce the overall visibility of power line structures.

When Figure 3.1-11: Existing View from Jingle Lane and Figure 3.1-12: Visual Simulation from Jingle Lane are compared, the new replacement poles are taller than the existing wood power poles and the change is somewhat noticeable (particularly of the upper portion of structures that appear against the sky). However, the lower portions of the new poles will typically be screened by vegetation, and the rust color of the new weathered TSPs will appear similar in color to the existing wood structures. In addition, the change will be attenuated as the existing multi-pole

structures will be replaced by single poles. These effects represent an incremental change that does not substantially alter the composition and character of the landscape setting. Therefore, impacts will be less than significant.

Cox-Freedom

Figure 3.1-13: Existing View from Freedom Boulevard presents the existing view from Freedom Boulevard looking northeast toward McDonald Road, in the Cox-Freedom Landscape Unit. This view includes an open vista toward distant hills. However, the photograph also shows considerable roadside vegetation, indicating that motorists' views are typically enclosed or screened. Additionally, motorists' views are relatively brief due to the vegetation and road topography. On the left side of this photograph, a recently built house is visible and new residential landscaping does not yet provide effective visual screening; the level of screening will increase as the landscape matures. However, like many residences along this portion of the project, the house is set back from the roadway. From both the yard and the residence's first story, a masonry wall screens views toward the roadway. At this location, the overhead line can be seen in the foreground against the sky. Two existing wood power poles are barely visible against a landscape backdrop. In the foreground, another wood pole is partially visible on the right side of the road.

Figure 3.1-14: Visual Simulation from Freedom Boulevard shows the addition of two new TSPs. From this vantage point, the new self-weathering rust-colored TSPs will be noticeably taller and somewhat more prominent than the existing wood poles (the TSPs in this location are approximately 100 feet tall, and the existing wood poles are approximately 50 feet tall). The two existing wood power poles and overhead line visible from this vantage point remain. A comparison between the existing photograph and the simulation indicates that the project could represent a noticeable visual change in this roadway view. The new poles could also appear somewhat more prominent as seen from the relatively new residence nearby.

Figure 3.1-14: Visual Simulation from Freedom Boulevard represents a worst-case visual condition for several reasons. Although the view is framed by existing vegetation, within this area it is relatively unusual to see an unobstructed view of the project ROW. As documented in Figure 3.1-2: Representative Photographs, views are screened either partially or entirely by dense vegetation at most locations along the project ROW. In general, the Cox-Freedom Segment involves the installation of new TSPs and wood poles that are approximately 65 to 100 feet tall. Because this simulation includes one of the two tallest power poles in this landscape unit, it shows the greatest visual change between new and existing power poles in the area.

As seen in Figure 3.1-14: Visual Simulation from Freedom Boulevard, in light of the presence of an existing distribution line and the brief duration in the view from the road, the project does not represent a substantial alteration to the composition and character of the Cox-Freedom Landscape Unit. Implementation of APM AES-03, which requires the use of self-weathering poles, will help reduce project visibility. At approximately five locations in this landscape unit, specifically within the residential area located immediately north of the intersection of Freedom Boulevard and Dry Valley Road, residences may have close-range unobstructed views of the proposed poles. APM AES-05 will reduce the visual effect on these residential views by installing additional landscaping to provide visual screening, and limiting tree trimming to the extent practical.

Figure 3.1-9: Existing View from Hames Road

View from Hames Road near Pleasant Valley Road looking north (VP14)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-9: Existing View from Hames Road
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-10: Visual Simulation from Hames Road

Visual Simulation of Proposed Project (VP 14)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-10: Visual Simulation from Hames Road
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-11: Existing View from Jingle Lane

View from Jingle Lane near Day Valley Road looking southeast (VP15)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

Figure 3.1-11: Existing View from Jingle Lane
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-12: Visual Simulation from Jingle Lane

Visual Simulation of Proposed Project (VP 15)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-12: Visual Simulation from Jingle Lane
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-13: Existing View from Freedom Boulevard

View from Freedom Boulevard near Rob Roy Substation looking north (VP 21)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-13: Existing View from Freedom Boulevard
Santa Cruz 115 kV Reinforcement Project

Figure 3.1-14: Visual Simulation from Freedom Boulevard

Visual Simulation of Proposed Project (VP 21)

Source: Truescape, 2011

Refer to Figure 3.1-1: Landscape Units and Photo Viewpoint Locations
Note: This image should be viewed from a distance of approximately 12 inches in order to receive an accurate impression of the project's scale in relationship to the surrounding landscape.

ENVIRONMENTAL VISION
110411

Figure 3.1-14: Visual Simulation from Freedom Boulevard
Santa Cruz 115 kV Reinforcement Project

Considerable vegetation will screen the project from most residential views in the area. The project, when viewed relatively briefly by passing motorists, will introduce an incremental change that will not substantially alter the visual landscape character. As a result, impacts are expected to be less than significant.

3.1.4.6 Question 3.1d – Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction – No Impact

No nighttime construction requiring lighting will be utilized during project construction. Therefore, there will be no impact.

Operation and Maintenance – Less-than-Significant Impact

To minimize potential glare from the new power line components, APM AES-02 calls for the use of non-reflective 115 kV conductors and insulators. In addition, APM AES-03 calls for the use of self-weathering TSPs, which have a non-reflective finish. Due to the use of non-reflective finishes, the potential for glare will be reduced and impacts will be less than significant.

The project may include new nighttime lighting on some new structures at the existing substation that will be operated only as needed for safety and security. The additional lighting will represent a minor incremental change to existing nighttime lighting conditions at the substation. Implementation of APM AES-04 will reduce potential impacts from nighttime lighting by reducing the glare and spillover of the newly installed lighting. As a result, the incremental effects due to the increased lighting will be minor and the impact will be less than significant.

3.1.5 References

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.2 AGRICULTURE AND FORESTRY, LAND USE AND PLANNING, AND RECREATIONAL RESOURCES

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

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Land Use and Planning				
f) Physically divide an established community?				✓
g) 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?				✓
h) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓
Recreational Resources				
i) 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?			✓	
j) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?				✓

3.2.1 Introduction

This section describes the existing agriculture, forestry, land use, and recreational resources in the vicinity of the project and evaluates potential impacts to these resources that may result from construction and operation and maintenance (O&M) of the project. This section also provides the environmental and regulatory setting for the project area. Potential impacts identified in this section include temporary impacts to Important Farmland and forest land resulting from construction of the work areas and access roads, and the partial or total short-term, temporary closure of Pinto Lake County Park. This section concludes that the project will have no impact

on land use and planning, and a less-than-significant impact on agriculture, forestry, and recreational resources.

3.2.2 Methodology

Analysis of agricultural resources involved a review of the following documents and information sources:

- DOC DLRP FMMP map
- DOC California Farmland Conversion Report 2006-2008
- Williamson Act map for Santa Cruz County

Analysis of forestry resources involved a review of the following documents and information sources:

- California Government Code (CGC) Section 51100-51104 (California Timberland Productivity Act of 1982)
- California Public Resources Code Section 4526
- Forest Legacy Program (FLP) map
- Santa Cruz County General Plan, Conservation and Open Space Chapter

Analysis of land use and planning involved a review of the following plans and policies:

- California Department of Fish and Game, Natural Community Conservation Plan (NCCP) Summary Table
- Santa Cruz County General Plan
- Santa Cruz County Zoning Ordinance
- Tucker Pond Habitat Conservation Plan

In addition, a field visit to the site was conducted to gather relevant information pertaining to the land uses at the project site and surrounding areas. A meeting was also held with Santa Cruz County Planning Director Katherine Previsich, Senior Planner Todd Sexauer, and the Director of Public Works John Presleigh, to discuss the project. In the meeting, Mr. Presleigh acknowledged that it was better to use existing utility corridors.

Analysis of recreational resources involved a review of the following documents and information sources:

- California Department of Parks and Recreation website
- Santa Cruz County Parks Department website
- Santa Cruz County City, County, and State Parks map

In addition, on December 13, 2010, PG&E held a meeting with the Director of Parks, Open Space and Cultural Services for the County of Santa Cruz, Joe Schultz; the Administer of the Santa Cruz County Redevelopment Agency, Betsey Lynberg; and the Parks Maintenance Supervisor, Gretchen Iliff-Bahner to discuss the project and potential impacts to Pinto Lake County Park. Mr. Shultz indicated the project would have a de minimus impact to the operation

of the park. Ms. Lynberg and Ms. Iliff-Bahner indicated that the proposed removal of two of five structures, the reduction in tree trimming, and the cross-phasing of the circuits would possibly benefit the park.

3.2.3 Existing Conditions

The following subsection describes the regulatory and physical settings of the project as it relates to agriculture and forestry, land use and planning, and recreational resources in the project area.

3.2.3.1 Regulatory Background

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. The CPUC, having exclusive discretionary jurisdiction for this project, will also undertake the necessary CEQA review. The following analysis of local regulations relating to agriculture, forestry, land use, planning, and recreational resources is provided for informational purposes and to assist with CEQA review.

Attachment 3.2-A: Policies Consistency Analysis lists policies of local agencies that are relevant to the project and discusses the project's consistency with those policies.

Federal

Agriculture, Land Use and Planning, and Recreation

A review of the U.S. Department of Agriculture website, the Code of Federal Regulations, and the U.S. National Park Service website revealed no federal agriculture, land use and planning, or recreation policies or guidelines applicable to the project area.

Forestry

Forest Legacy Program Land Designations

The FLP was created to protect environmentally important forest land threatened with conversion to non-forest uses, such as subdivision for residential or commercial development. To help maintain the integrity and traditional uses of private forest lands, the FLP advocates the creation of conservation easements on a voluntary basis. The federal government manages the program in cooperation with state and local agencies, private organizations, and individual landowners.

State

Land Use and Planning, and Recreation

No state land use and planning, or recreation policies or guidelines are applicable to the project area.

Agriculture

Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program Important Farmland Designations

The DOC DLRP FMMP generates maps depicting Important Farmlands. For the purposes of this section, "Important Farmlands" include Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance. These farmlands are categorized according to specific criteria, including soil quality and irrigation conditions. Approximately 94 percent of the FMMP study area is based on the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) soil classification system, which evaluates both physical and chemical conditions of soils—including temperature, moisture regime, pH, flooding, groundwater depth, erodibility, permeability, and sodium content. FMMP maps are updated every 2 years using aerial imagery review, field reconnaissance, computer mapping analyses, and public input. The minimum land use mapping unit is 10 acres; smaller units of land are generally incorporated into surrounding map classifications.

The extent of farmland designation coverage in California is relative to the availability of NRCS soil survey data. In areas for which data are not available, a series of Interim Farmland definitions have been established to allow land use monitoring to occur until soil data are available.

The DOC has established eight land use classifications, which are summarized as follows:

- Prime Farmland: Prime Farmland has the optimum combination of physical and chemical conditions that are able to sustain long-term agricultural production. The soil quality, growing season, and moisture supply on Prime Farmlands provide the conditions required to produce sustained high yields. Prime Farmlands must have been used for irrigated production within 4 years of the mapping date.

- Farmland of Statewide Importance: Farmland of Statewide Importance is similar to Prime Farmland; however, these farmlands have minor shortcomings, such as a higher slope or decreased ability to store soil moisture. Similar to Prime Farmlands, Farmlands of Statewide Importance must have been used for irrigated production within 4 years of the mapping date.

- Unique Farmland: Unique Farmland has lower quality soils and is used for the production of California's leading agricultural products. Unique Farmlands are typically irrigated, but may also include non-irrigated vineyards or orchards found in certain climatic zones. Unique Farmlands must have been cropped within 4 years of the mapping date.

- Farmland of Local Importance: Farmland of Local Importance is farmland that is vital to the local agricultural economy, as identified by each county's local advisory committee and board of supervisors. In Santa Cruz County, Farmlands of Local Importance are farmlands that have soils used for Christmas tree farms and nurseries, and that do not meet the definition for Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

- Grazing Land: Grazing Land is land on which existing vegetation is suitable for livestock grazing.

- Urban and Built-Up Land: Urban and Built-Up Land is defined as land that is occupied by buildings or other structures at a minimum density of one unit to 1.5 acres (or approximately six structures to 10 acres). This land is used for development purposes, including residential, commercial, industrial, construction, public administration, institutional, transportation yards, airports, cemeteries, golf courses, sewage treatment, sanitary landfills, and water control structures.

- Other Land: Other Land includes all lands that are not in any other map category, such as water bodies smaller than 40 acres; low-density rural developments; confined livestock, poultry, or aquaculture facilities; and brush, timber, wetland, and riparian areas that are not suitable for livestock grazing.

- Water: Water includes all perennial water bodies that are a minimum of 40 acres.

Williamson Act Land Designations

The Williamson Act, also known as the California Land Conservation Act of 1965 (CGC Section 51200 et seq.), preserves agricultural and open space lands from conversion to urban land uses by establishing a contract between local governments (i.e., city and county governments) and private landowners to voluntarily restrict their land holdings to agricultural or open space use. In return, landowners receive property tax assessments based on farming or open space use rather than assessments based on the full market property value, which is typically 20 to 75 percent higher. Williamson Act contracts are valid for a minimum of 10 years and are automatically renewable after each 10-year term.

The Williamson Act also allows local governments to establish Agricultural Preserves, parcels of land for which cities or counties are willing to enter into Williamson Act contracts. Agricultural Preserves generally include a minimum of 100 acres and are not in areas where public utility improvements and associated land acquisitions may be necessary (CGC Section 51230). Although the Williamson Act does not specify compatible land uses for property located adjacent to contract lands or Agricultural Preserves, it does state that cities and counties must determine compatible land use types while recognizing that temporary or permanent population increases frequently impair or hamper agricultural operations (CGC Section 51220.5).

The state delegates authority to local officials to determine and regulate the permitted uses on parcels under Williamson Act Contracts. In Santa Cruz County, parcels under Williamson Act Contracts are subject to the zoning regulations contained within the Santa Cruz County Code. These regulations outline a variety of allowed uses for agricultural lands under Williamson Act contract; these include, but are not limited to, agricultural activities, agricultural support and related facilities, dwelling units, greenhouses, mushroom farms, and wineries, which are subject to provisions in the Santa Cruz County Zoning Ordinance. The Santa Cruz County Zoning Ordinance may also permit modification of existing uses on land under Williamson Act contract. As discussed previously, the project is not subject to local zoning regulation.

Based on Section 13.10.312 of the Zoning Code, public utility lines within County jurisdiction are an allowed use in Agricultural Preserves, which include lands under Williamson Act contract, subject to public hearing by the County Zoning Administrator. Prior to approving a use in an Agricultural Preserve the County must make specific findings which are laid out in the Zoning Code. However, as discussed previously, public utility facilities that are regulated by the CPUC, such as the project, are not subject to local land use and zoning regulations.

Forestry

California Public Resources Code

The California Public Resources Code provides definitions of forest land and timberland, which is referenced in the CEQA Guidelines. California Public Resources Code Section 12220(g) defines forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." California Public Resources Code Section 4526 defines timberland as "land, other than land owned by the federal government and land designated by the [State Board of Forestry and Fire Protection] as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the [State Board of Forestry and Fire Protection] on a district basis after consultation with the district committees and others." Forest land was identified based on vegetation surveys conducted within approximately 100 feet of all existing and planned project components and work areas. Timberland was identified based on the Agriculture and Timber map prepared by Santa Cruz County.

California Government Code

The California Government Code provides the definition of timberland production zone (TPZ), which is referenced in the CEQA Guidelines. California Government Code Section 51104(g) defines TPZ as "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, defined in subdivision (h). With respect to general plans of cities and counties, 'timberland preserve zone' means 'timberland production zone.'" Sections 51112 and 51113 describe the process for designating a TPZ. Subdivision (h) describes compatible uses with a TPZ. Santa Cruz County designates TPZs with the zoning designation Timber Production (TP).

Local

Santa Cruz County General Plan and Zoning Ordinance

Local regulation of agriculture, forestry, land use and planning, and recreational areas is codified in the Santa Cruz County General Plan and the Santa Cruz County Zoning Ordinance within the Santa Cruz County Code. The Santa Cruz County General Plan contains certain policies that, consistent with CPUC jurisdiction over the project, PG&E will consider with respect to the project. Attachment 3.2-A: Policies Consistency Analysis lists these policies and discusses the project's consistency with the policies.

Although PG&E is not subject to local discretionary permitting, ministerial permits will be secured, as required. Table 2-5: Potential Permits and Approvals (Chapter 2 – Project Description) lists the authorizations that may be required for project construction.

Habitat Conservation Plans/Natural Community Conservation Plans

There are no applicable Habitat Conservation Plan (HCP) areas or NCCPs applicable to the project area.

3.2.3.2 Environmental Setting

The following sections present the environmental setting for the Northern Alignment route along the existing Green Valley-Camp Evers power line, the Cox-Freedom Segment route along existing distribution lines, and Rob Roy Substation. The environmental setting describes the project alignment starting at Green Valley Substation and ending at Rob Roy Substation.

Agriculture

The project crosses agricultural areas, the most prevalent of which are apple orchards, livestock pastures, and row crops. The project is also located on and crosses Important Farmland and land under Williamson Act contracts, as shown in Figure 3.2-1: Agriculture Resources Map. As of 2008, approximately 21,310 acres of Important Farmlands and 16,884 acres of land under Williamson Act contract are located within Santa Cruz County.

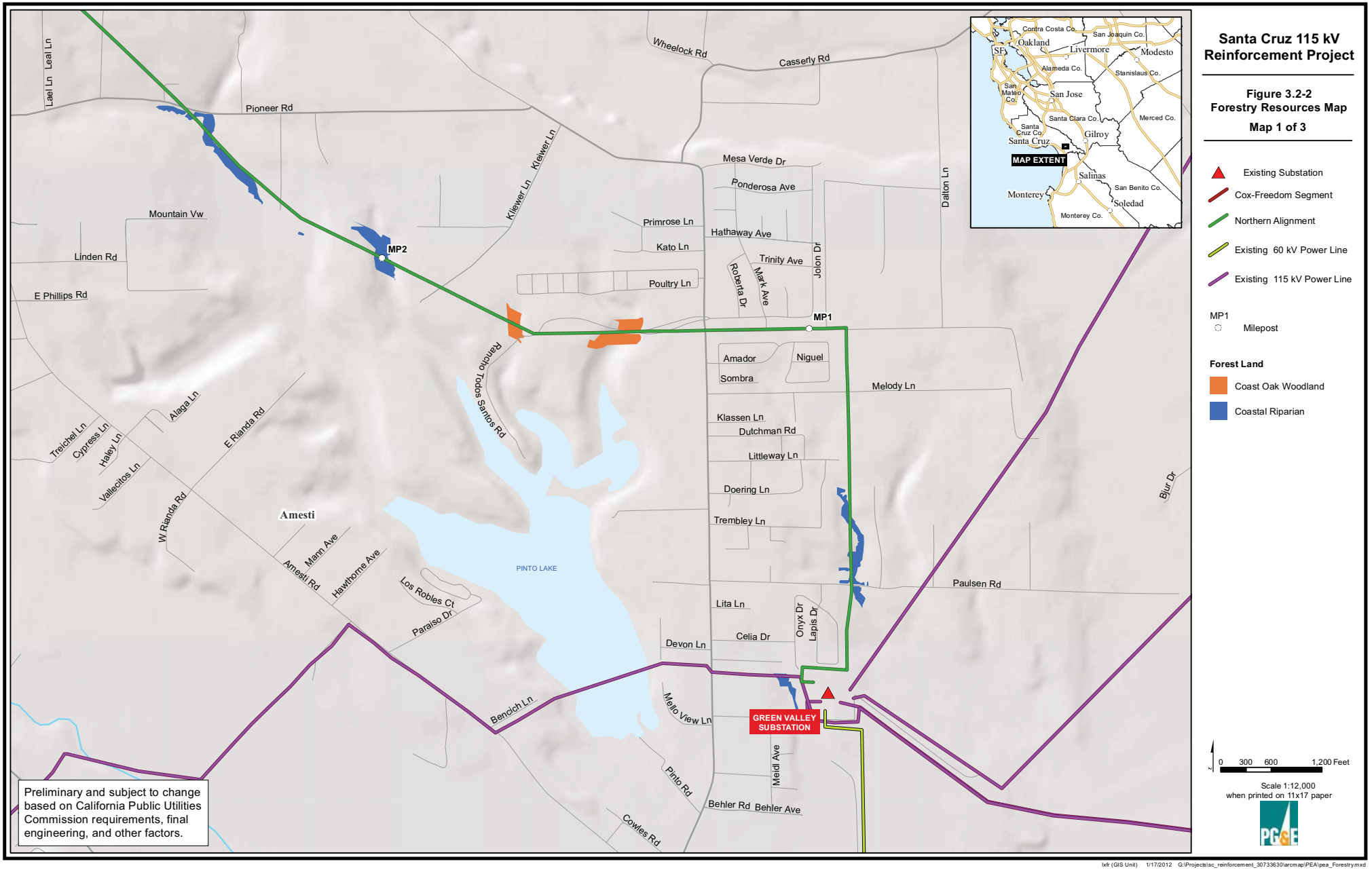
Northern Alignment

The Northern Alignment, where PG&E proposes to rebuild an existing single-circuit PG&E power line that has been in operation since the 1950s into a double-circuit power line, will cross approximately 0.94 mile of Prime Farmland, 0.65 mile of Farmland of Statewide Importance, and 0.18 mile of Unique Farmland. Figure 3.2-1: Agriculture Resources Map provides the locations where the project crosses Important Farmlands. The Northern Alignment will also be located on and cross approximately 1.0 mile of agricultural land under Williamson Act contract in portions of the area located between Pioneers Road and Pinto Lake County Park, and approximately 0.4 mile southeast of the intersection of Hames Road and Pleasant Valley Road.

Cox-Freedom Segment

The Cox-Freedom Segment will construct a new power line in the same right-of-way and/or franchise as an existing PG&E distribution line that has been in service since the 1960s. The new power line will be on new TSPs and wood poles, some of which will replace existing wood poles of the existing distribution line. The TSPs and wood poles will be installed along county road shoulders. As a result, the line will not cross any Important Farmland or land under Williamson Act contract. The nearest Important Farmland is located approximately 0.1 mile east of the project and consists of Unique Farmland. The nearest location of land under Williamson Act contract is approximately 0.1 mile west of the project.

Figure 3.2-1: Agriculture Resources Map


Santa Cruz 115 kV Reinforcement Project
Figure 3.2-2
Forestry Resources Map
Map 1 of 3
Existing Substation
Cox-Freedom Segment
Northern Alignment
Existing 60 kV Power Line
Existing 115 kV Power Line
MP1
Milepost
Forest Land
Coast Oak Woodland
Coastal Riparian
MAP EXTENT
GREEN VALLEY SUBSTATION
MP1
MP2
PINTO LAKE
Amesti
Wheelock Rd
Casserly Rd
Pioneer Rd
Lael Ln
Leal Ln
Mountain Vw
Linden Rd
E Phillips Rd
Kriewer Ln
Mesa Verde Dr
Ponderosa Ave
Primrose Ln
Hathaway Ave
Kato Ln
Trinity Ave
Poultry Ln
Roberta Dr
Mark Ave
Jolon Dr
Dalton Ln
Rancho Todos Santos Rd
Amador
Niguel
Sombra
Melody Ln
Klassen Ln
Dutchman Rd
Littleway Ln
Doering Ln
Trembley Ln
Paulsen Rd
Lita Ln
Celia Dr
Onyx Dr
Lapis Dr
Devon Ln
Blur Dr
Treichel Ln
Cypress Ln
Haley Ln
Vallecitos Ln
Alaga Ln
E Rianda Rd
W Rianda Rd
Amesti Rd
Mann Ave
Hawthorne Ave
Los Robles Ct
Paraiso Dr
Bencich Ln
Mello View Ln
Meidl Ave
Pinto Rd
Behler Rd
Behler Ave
Cowles Rd
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
0 300 600 1,200 Feet
Scale 1:12,000
when printed on 11x17 paper
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Rob Roy Substation Modification

The Rob Roy Substation Modification will be constructed on land owned by PG&E that is not designated as Important Farmland or under a Williamson Act contract. The nearest Important Farmland is located approximately 0.5 mile northwest of the substation and consists of Prime Farmland. The nearest location of land under a Williamson Act contract is approximately 0.6 mile northeast of the substation.

Rob Roy Substation Connections

The Rob Roy Substation Connections will be constructed on land owned by PG&E or within ROWs currently maintained by PG&E. None of these areas are designated as Important Farmland or under Williamson Act contracts. The nearest Important Farmland is located approximately 0.5 mile from the project and consists of Prime Farmland. The nearest location of land under Williamson Act contract is approximately 0.4 mile away.

Forestry

Santa Cruz County contains approximately 190,000 acres of forest land and 125,000 acres of timberland. The only FLP project in Santa Cruz County is the approximately 9-acre Noren Brothers Forest Legacy Conservation Easement located on Old San Jose Road, which is located approximately 6.6 miles northwest of the project.

The project crosses forest land, which includes coastal riparian and coastal oak woodland vegetation communities. Section 3.4 Biological Resources, defines and discusses these vegetation communities. Figure 3.2-2: Forestry Resources Map depicts where the project crosses forest land.

Northern Alignment

The Northern Alignment route, which is in an existing power line corridor, will cross approximately 0.30 mile of coastal riparian vegetation and 0.43 mile of coastal oak woodland vegetation, which are included as forest land. The Northern Alignment will not cross timberland or a TPZ. The nearest location of timberland, which is also a TPZ, is approximately 0.5 mile from the project.

Cox-Freedom Segment

The Cox-Freedom Segment, which is located in an existing distribution line corridor along county roads, will cross approximately 0.17 mile of coastal oak woodland vegetation considered forest land. The Cox-Freedom Segment will not cross timberland or a TPZ. The nearest location of timberland is approximately 0.6 mile north of the Cox-Freedom Segment. The nearest location of a TPZ is approximately 0.8 mile north of the project.

Rob Roy Substation Modification

Rob Roy Substation is not located on forest land, timberland, or a TPZ. However, Rob Roy Substation is adjacent to coastal oak woodland and mixed chaparral. The nearest location of timberland, which is also a TPZ, is approximately 1.2 miles northwest of the substation.

Rob Roy Substation Connections

The Rob Roy Substation Connections will cross less than approximately 0.02 mile of coastal oak woodland vegetation, which is included as forest land. The Rob Roy Substation Connections will not be located on timberland or a TPZ. The nearest location of timberland, which is also a TPZ, is approximately 1.1 miles northwest of the Rob Roy Substation Connections.

Land Use and Planning

The project is located entirely within unincorporated Santa Cruz County. Figure 3.2-3: General Plan Land Use Designations Map illustrates the general plan land use designations in the project area, and Figure 3.2-4: Zoning Designations Map illustrates the zoning designations in the project area. Public utility facilities regulated by the CPUC are not subject to local land use and zoning regulations.

While the Santa Cruz County General Plan does not apply to public utility facilities under CPUC jurisdiction, such as this project, policy 2.21.4 of the Plan does specify that public utility transmission and distribution facilities within County jurisdiction, including substations, are allowed in all land use districts provided that the routes or site plans are submitted to the Santa Cruz County Planning Department for review and recommendation prior to the acquisition of necessary land rights.

Habitat Conservation Plans/Natural Community Conservation Plans

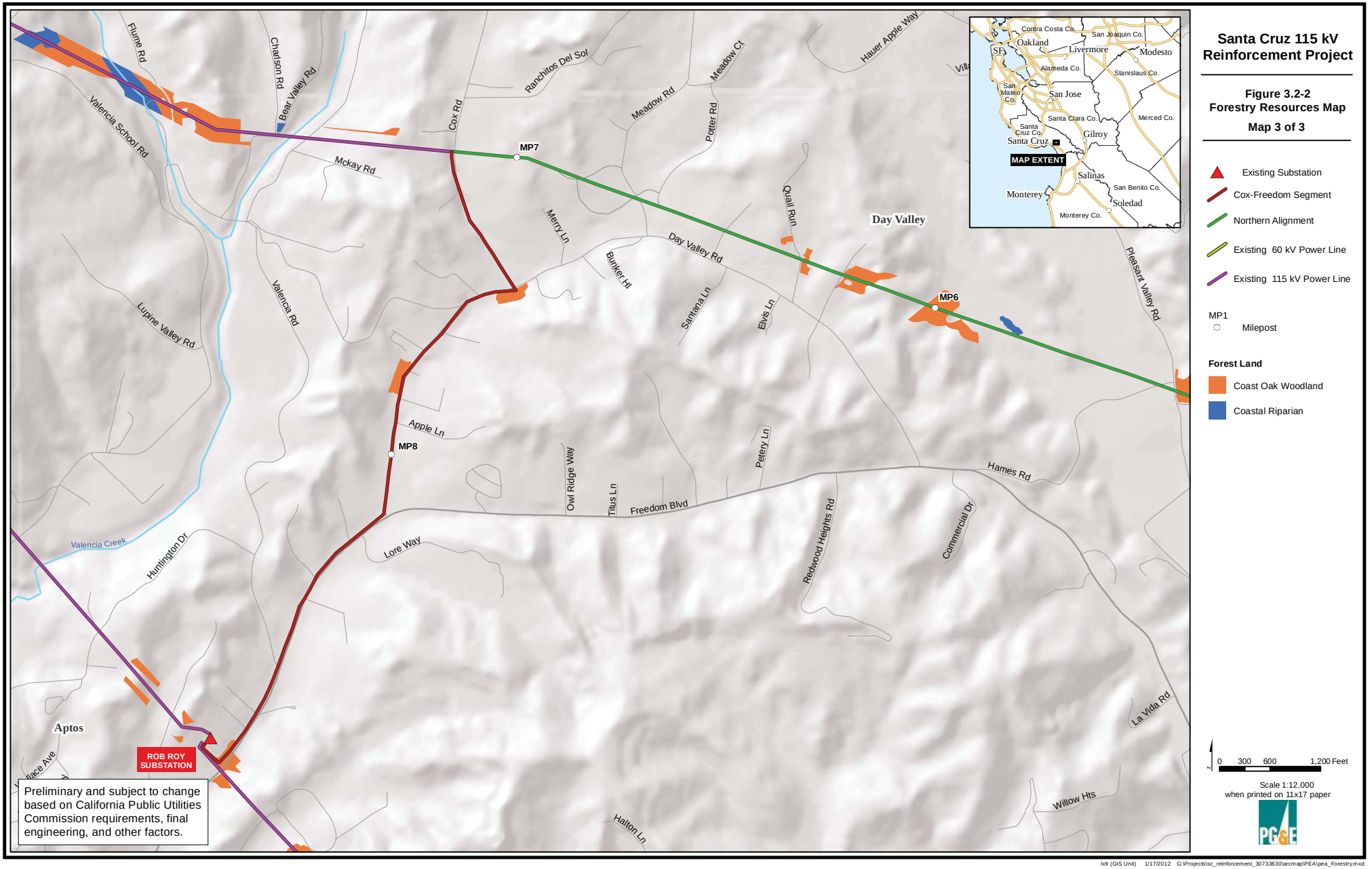
No project components are located within the boundaries of a HCP area or NCCP area. The nearest HCP area (Tucker Pond Low-Effect HCP area) is south of Freedom Boulevard approximately 0.8 mile southeast of the project. The Tucker Pond Low-Effect HCP was prepared to support an incidental take permit application for construction of a single-family residence, pool, vineyard, equestrian facilities, and associated uses on the Ross Trust property, which supports a known breeding population of Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*). There are no NCCPs in Santa Cruz County.

Recreation

The recreational areas within 1 mile of the project include six county parks and one city park, which are shown in Figure 3.2-5: Recreational Resources Map. Table 3.2-1: Recreational Areas Summary provides a summary of the parks within 1 mile of the project, their location, proximity to the project, and park features. The only recreational area that will be crossed by the project is Pinto Lake County Park, which is located on Rancho Todos Santos Road west of Green Valley Road. The Northern Alignment, where the project will rebuild the existing 115 kV wood pole line constructed in the 1950s, crosses approximately 0.43 mile of the northern side of the park. The Northern Alignment follows the entrance road into the northern portion of the park and continues past the parking lot before turning northwest toward agricultural lands. The northern portion of the park features nature trails, playgrounds, picnic areas, soccer fields, two pavilions with barbecues, a small baseball field, and a disc golf course. The project spans some of these features, but avoids directly spanning the soccer field, parking lot, and all structures in the park.

Figure 3.2-2: Forestry Resources Map


Oak Tree Ln
Molnar Ln
Enos Ln
Riders Private Rd
Hames Rd
Valley View Ln
Pinehill Rd
Eureka Canyon Rd
Allios Dr
Via Venito
Browns Valley Rd
Ramp
Brodin Ln
Blake Ave
Blakeridge Ln
Aldridge Ln
MP5
Pleasant Valley Ln
Senda Del Valle
Corralitos
Corralitos Creek
Poppy Hill Rd
Corralitos Rd
Amesti Rd
MP4
La Vida Rd
Freedom Blvd
Pleasant Valley Rd
Willow Hts
Skylark Ln
Merk Rd
MP3
Crow Ave
Lael Ln
Leal Ln
Pheasant Run
Oak Hl
Eagle Rdg
Prolsman Way
Storey Ln
Storey Rd
Varni Rd
Pioneer Rd
Contra Costa Co.
San Joaquin Co.
Oakland
SF
Livermore
Modesto
Alameda Co.
Stanislaus Co.
San Mateo Co.
San Jose
Santa Clara Co.
Merced Co.
Santa Cruz Co.
Gilroy
Santa Cruz
MAP EXTENT
Salinas
San Benito Co.
Monterey
Soledad
Monterey Co.
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
Santa Cruz 115 kV Reinforcement Project
Figure 3.2-2
Forestry Resources Map
Map 2 of 3
Existing Substation
Cox-Freedom Segment
Northern Alignment
Existing 60 kV Power Line
Existing 115 kV Power Line
MP1
Milepost
Forest Land
Coast Oak Woodland
Coastal Riparian
0 300 600 1,200 Feet
Scale 1:12,000
when printed on 11x17 paper
lxfr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_Forestry.mxd



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 3.2-2
Forestry Resources Map
Map 3 of 3

- Existing Substation
- Cox-Freedom Segment
- Northern Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line
- MP1 Milepost

Forest Land

- Coast Oak Woodland
- Coastal Riparian

N

0 300 600 1,200 Feet

Scale 1:12,000
when printed on 11x17 paper

PG&E

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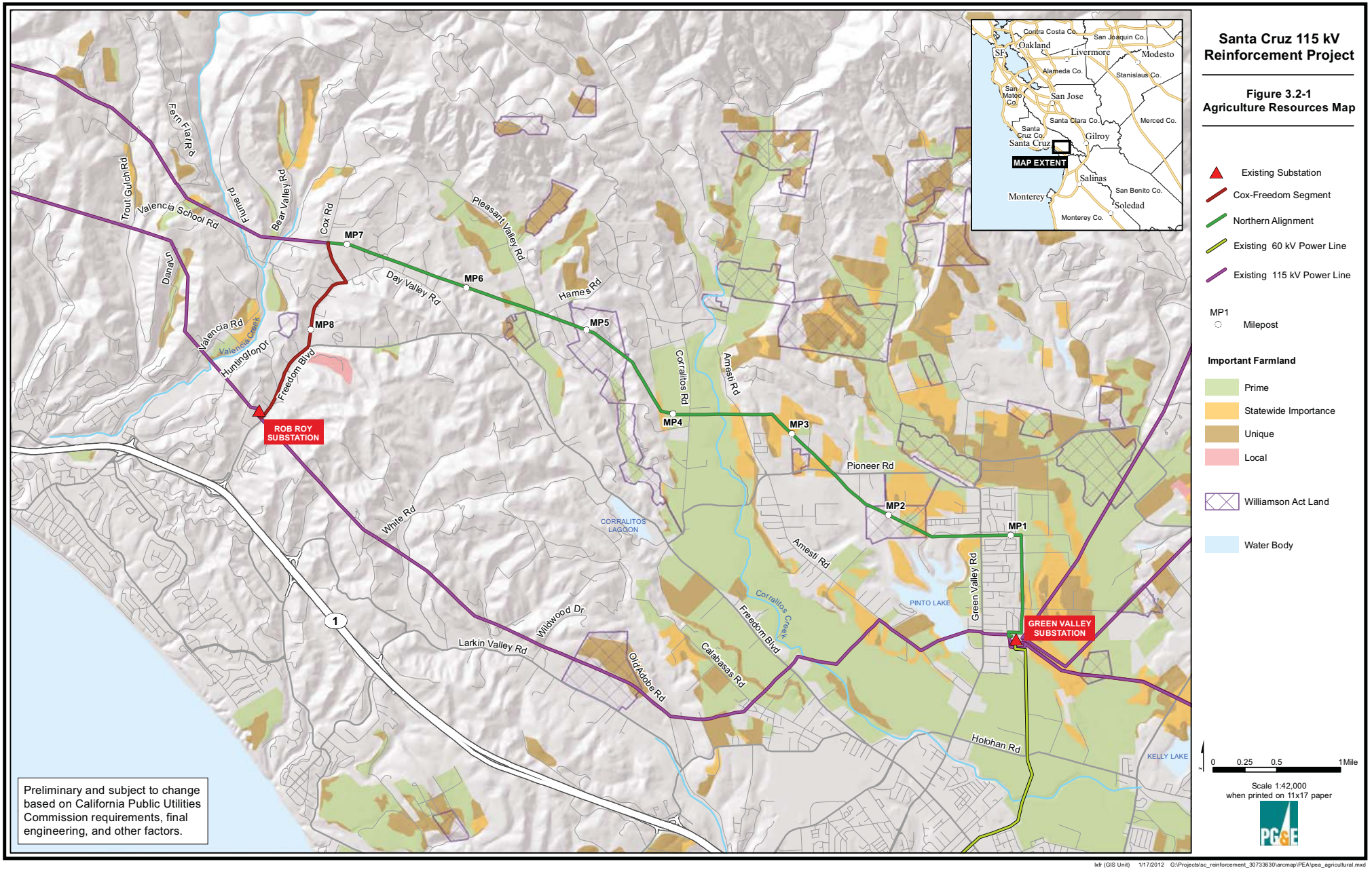

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Figure 3.2-3: General Plan Land Use Designations Map

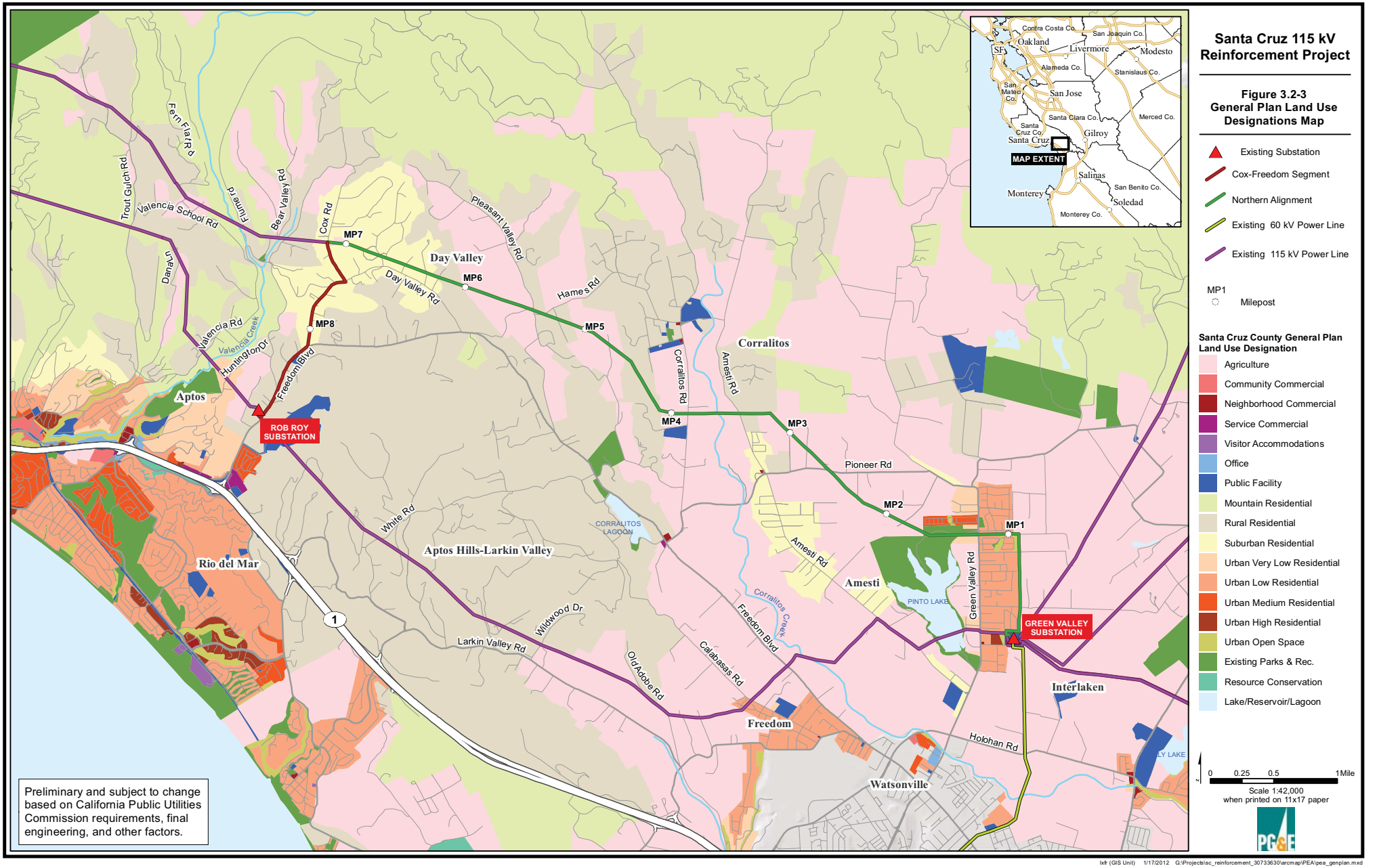
Santa Cruz 115 kV Reinforcement Project
Figure 3.2-3
General Plan Land Use Designations Map
Existing Substation
Cox-Freedom Segment
Northern Alignment
Existing 60 kV Power Line
Existing 115 kV Power Line
MP1
Milepost
Santa Cruz County General Plan Land Use Designation
Agriculture
Community Commercial
Neighborhood Commercial
Service Commercial
Visitor Accommodations
Office
Public Facility
Mountain Residential
Rural Residential
Suburban Residential
Urban Very Low Residential
Urban Low Residential
Urban Medium Residential
Urban High Residential
Urban Open Space
Existing Parks & Rec.
Resource Conservation
Lake/Reservoir/Lagoon
MAP EXTENT
Contra Costa Co.
San Joaquin Co.
Oakland
SF
Livermore
Modesto
Alameda Co.
Stanislaus Co.
San Mateo Co.
San Jose
Santa Clara Co.
Merced Co.
Santa Cruz Co.
Santa Cruz
Gilroy
Salinas
San Benito Co.
Monterey
Soledad
Monterey Co.
MP1
MP2
MP3
MP4
MP5
MP6
MP7
MP8
ROB ROY SUBSTATION
GREEN VALLEY SUBSTATION
Aptos
Rio del Mar
Aptos Hills-Larkin Valley
Day Valley
Corralitos
Amesti
Freedom
Interlaken
Watsonville
Trout Gulch Rd
Fern Flat Rd
Valencia School Rd
Bear Valley Rd
Cox Rd
Pleasant Valley Rd
Day Valley Rd
Hames Rd
Corralitos Rd
Amesti Rd
Pioneer Rd
Green Valley Rd
Freedom Blvd
Valencia Rd
Huntington Dr
Valencia Creek
White Rd
Wildwood Dr
Larkin Valley Rd
Old Adobe Rd
Calabasas Rd
Holohan Rd
Corralitos Creek
CORRALITOS LAGOON
PINTO LAKE
1
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
0 0.25 0.5 1 Mile
Scale 1:42,000
when printed on 11x17 paper
PG&E
lxfr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_genplan.mxd

Figure 3.2-4: Zoning Designations Map

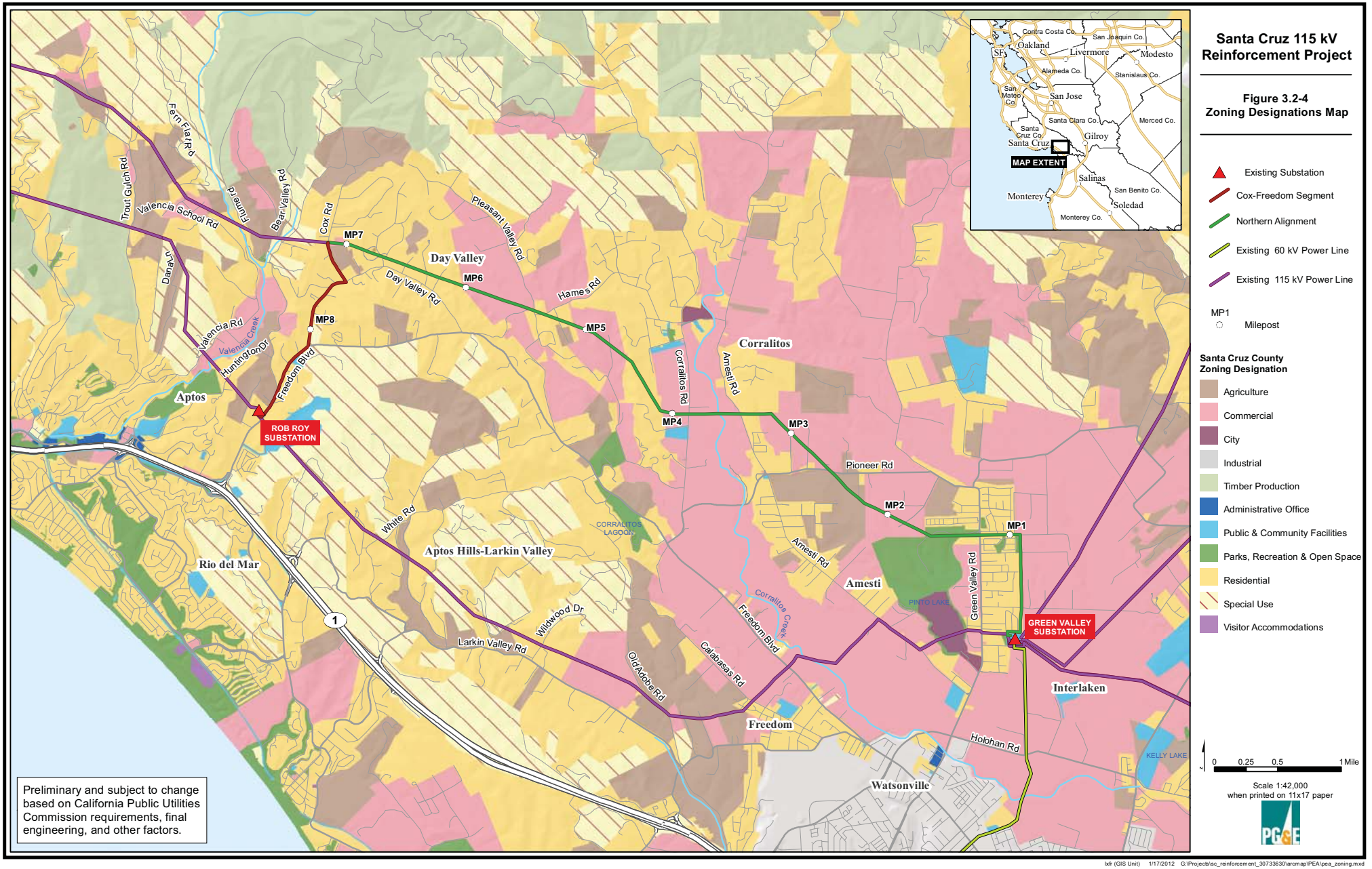
Santa Cruz 115 kV Reinforcement Project
Figure 3.2-4
Zoning Designations Map
Existing Substation
Cox-Freedom Segment
Northern Alignment
Existing 60 kV Power Line
Existing 115 kV Power Line
MP1
Milepost
Santa Cruz County Zoning Designation
Agriculture
Commercial
City
Industrial
Timber Production
Administrative Office
Public & Community Facilities
Parks, Recreation & Open Space
Residential
Special Use
Visitor Accommodations
MAP EXTENT
Contra Costa Co.
San Joaquin Co.
Oakland
SF
Livermore
Modesto
Alameda Co.
Stanislaus Co.
San Mateo Co.
San Jose
Santa Clara Co.
Merced Co.
Santa Cruz Co.
Santa Cruz
Gilroy
Salinas
San Benito Co.
Monterey
Soledad
Monterey Co.
MP7
MP6
MP5
MP4
MP3
MP2
MP1
MP8
ROB ROY SUBSTATION
GREEN VALLEY SUBSTATION
Day Valley
Corralitos
Aptos
Rio del Mar
Aptos Hills-Larkin Valley
Amesti
Freedom
Interlaken
Watsonville
Trout Gulch Rd
Fern Flat Rd
Valencia School Rd
Bear Valley Rd
Cox Rd
Pleasant Valley Rd
Day Valley Rd
Hames Rd
Corralitos Rd
Amesti Rd
Pioneer Rd
Green Valley Rd
Freedom Blvd
Valencia Rd
Huntington Dr
Valencia Creek
White Rd
Wildwood Dr
Larkin Valley Rd
Old Adobe Rd
Calabasas Rd
Holohan Rd
CORRALITOS LAGOON
PINTO LAKE
KELLY LAKE
Corralitos Creek
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
0 0.25 0.5 1 Mile
Scale 1:42,000
when printed on 11x17 paper
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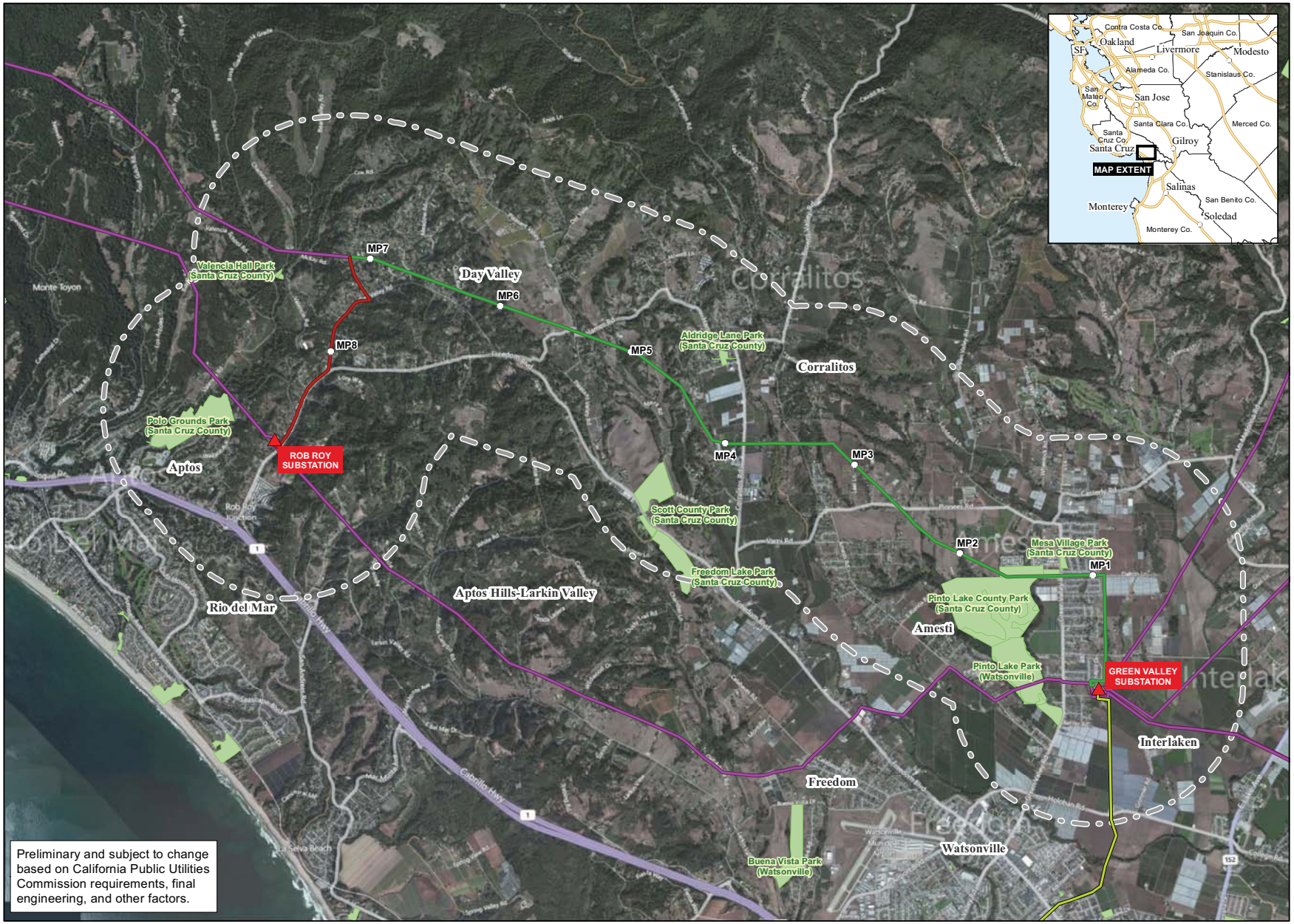
Figure 3.2-5: Recreational Resources Map



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 3.2-5 Recreational Resources Map

- Existing Substation
- Cox-Freedom Segment
- Northern Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line
- MP1 Milepost
- City and County Park
- 1-Mile Buffer

0 0.25 0.5 1 Mile

Scale 1:42,000 when printed on 11x17 paper

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Table 3.2-1: Recreational Areas Summary

Park	Location	Features
Pinto Lake County Park	757 Green Valley Road, Watsonville	• Lake with fishing Pier • Nature trails • Playground • Picnic areas • Soccer fields • Pavilions with barbecues • Small baseball field • Disc golf course
Mesa Village Park	790 Green Valley Road, Watsonville	• Play area • Basketball courts • Lawn • Picnic tables
Polo Grounds Park	2255 Huntington Avenue, Aptos	• Three baseball diamonds • Three soccer fields • Open space
Valencia Hall Park	2555 Valencia Road, Aptos	• Hall for weddings, parties, and meetings • One of last two remnants of Frederick Hihn's logging community
Aldridge Lane Park	20 Aldridge Lane, Corralitos	• Horse arena • Basketball court • Tennis court • Volleyball court • Playground • Horseshoe pit
Scott Park (Including Freedom Lake Park)	3101 Freedom Boulevard, Watsonville	• Trails • Play area • Picnic tables • Barbecues
Pinto Lake Park	451 Green Valley Road, Watsonville	• Boat launch ramp • Picnic areas • Pavilion with barbecue • Softball diamond • Volleyball court • Horseshoe pit • Playground • Pedal and row boats • Fishing • Bird watching

Source: Santa Cruz County Parks Department, 2011

3.2.4 Potential Impacts and Applicant-Proposed Measures

3.2.4.1 Significance Criteria

The standards of significance were derived from Appendix G of the California Environmental Quality Act Guidelines. Impacts to agriculture and forestry will be considered significant if the project:

- Permanently converts more than 5 acres of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use
- Conflicts with existing zoning for agricultural use or a Williamson Act contract such that it requires rezoning or cancellation of the contract
- Conflicts with existing zoning for, or causes rezoning of, forest land, timberland, or timberland zoned TP such that it requires rezoning or cancellation of the contract
- Results in the permanent loss or conversion of more than 5 percent of forest land in the project area to non-forest use
- Involves other changes in the existing environment which, due to their location or nature, could result in permanent or long-term conversion of more than 5 acres of Farmland to non-agricultural use or more than 5 percent of forest land in the project area to non-forest use

Impacts to Land Use and Planning will be considered significant if the project:

- Physically divides an established community
- Conflicts 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
- Conflicts with any applicable HCP or NCCP

Impacts to Recreation will be considered significant if the project:

- Increases 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
- Includes recreational facilities or requires the construction or expansion of recreational facilities that might have an adverse physical effect on the environment

3.2.4.2 Applicant-Proposed Measures

Because no potentially significant impacts relative to agriculture and forestry, land use and planning, and recreational resources will result from the project, and because no feasible measures to further reduce impacts were identified, no applicant-proposed measures are provided.

3.2.4.3 Question 3.2a – Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Construction – Less-than-Significant Impact

The Northern Alignment will cross approximately 0.94 mile of Prime Farmland, 0.65 mile of Farmland of Statewide Importance, and 0.18 mile of Unique Farmland. Project construction will temporarily impact up to 11 acres of Important Farmland through the use of temporary construction work areas and temporary access roads. Construction of the project will permanently result in the conversion of approximately 0.02 acre of Important Farmland to non-agricultural use through the installation of poles, which will replace the existing agricultural use where present in the location of the new poles. Approximately 50 square feet of Important Farmland will be returned to agricultural use from the removal of 16 existing wood poles. Table 3.2-2: Important Farmland Impact Summary provides a summary of the temporary and permanent impacts to each type of Important Farmland.

Table 3.2-2: Important Farmland Impact Summary

Project Component	Important Farmland Type	Temporary Impact (acres)	Permanent Impact (acres)
Northern Alignment	Prime Farmland	5.3	0.01
	Farmland of Statewide Importance	4.2	0.01
	Unique Farmland	1.5	< 0.01
Total	**--**	**11.0**	**0.02**

As previously discussed, there are approximately 21,310 acres of Important Farmlands within Santa Cruz County. Approximately 12.81 acres of these farmlands are located within the project right-of-way (ROW). Only a small percentage—approximately 0.2 percent (0.02 acre)—of these farmlands will be permanently converted to non-agricultural use due to construction of the project. The conversion of approximately 0.02 acre of farmland to non-agricultural use in the region is not considered significant when compared to the amount of farmland remaining in the project area and the amount of farmland in Santa Cruz County. Because less than 5 acres of Important Farmland will be converted to non-agricultural use, impacts resulting from the conversion of farmland to non-agricultural use will be less than significant.

Operation and Maintenance – No Impact

O&M activities primarily involve inspection and repair of the 115 kV power lines and routine inspection of Rob Roy Substation, all of which will be conducted within project ROWs and PG&E-owned land, and all of which already occur because a power line and the substation already exist. O&M of the project will not result in the conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to non-agricultural use. Therefore, no impact will occur.

3.2.4.4 Question 3.2b – Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? – No Impact

The Northern Alignment is located on land zoned for agricultural use. However, because the project will replace existing utility lines with new utility lines in the same alignment, the project will not result in conflicts with agricultural zoning nor result in any change of existing land uses. As a result, there will be no impact.

The Northern Alignment will be located on land under Williamson Act contract; however, the project will not conflict with any Williamson Act contracts because the project will not subdivide any parcels, will not result in any changes in contract status or ownership, and will not impact the viability of the lands under contract for agricultural use. Therefore, there will be no impact.

3.2.4.5 Question 3.2c – 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 land within the project area is currently zoned strictly for forest use. No portions of the project will cross timberland or a TPZ. Therefore, the project will not conflict with existing zoning for forest land, timberland, or a TPZ, and no impact will occur.

3.2.4.6 Question 3.2d – Would the project result in the loss of forest land or the conversion of forest land to non-forest use?

Construction – Less-than-Significant Impact

The Northern Alignment and Cox-Freedom Segment span approximately 0.70 mile and 0.17 mile of forest land, respectively. Construction of the project will temporarily impact approximately 1.2 acres of temporary construction areas and access roads are located in areas considered forest land. Portions of these areas may be cleared for use; however, tree clearing is not anticipated. Construction of the project will permanently result in the conversion of forest land to non-forest use through the expansion of ROW.

As previously discussed, Santa Cruz County contains approximately 190,000 acres of forest land. Based upon preliminary engineering data, less than 1 acre of forest land will be permanently converted to non-forest use due to the expansion of the existing ROW along the Cox-Freedom Segment. This amount is not considered significant when compared to the amount of forest land remaining in the project area and the amount of forest land in Santa Cruz County. Thus, impacts will be less than significant.

Operation and Maintenance – No Impact

O&M activities will be conducted within PG&E utility ROWs, as they currently are for the existing power line, distribution line, and substation, and will not result in additional loss of forest land or conversion of forest land to non-forest use. Therefore, no impact will occur.

3.2.4.7 Question 3.2e – Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? – No Impact

Project construction will not result in any other temporary conversion of farmland to non-agriculture use or forest land to non-forest use. In addition, future O&M activities will be conducted in the same manner as they are currently and within the established corridors for the Northern Alignment and the existing distribution line. Therefore, O&M of the project will not result in any other permanent conversion of farmland to non-agriculture use or forest land to non-forest use and no impact will occur.

3.2.4.8 Question 3.2f – Would the project physically divide an established community? – No Impact

Construction of the Northern Alignment, Cox-Freedom Segment, and substation components will primarily occur within or adjacent to the currently existing utility ROWs and substation boundaries. As previously discussed, the current ROWs and substation boundary may be slightly expanded in order to accommodate new components; however, such expansions will parallel existing ROWs and substation fence lines and will not create new divisions of established communities. Existing roads and new temporary overland access routes will be used to access the project components. The use of temporary overland access routes will be located in primarily rural areas and will not create new divisions of established communities. All O&M activities will be conducted within utility ROWs and substation boundaries, as they currently are. Therefore, no physical division of an established community will occur as a result of the project.

3.2.4.9 Question 3.2g – Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? – No Impact

Attachment 3.2-A: Policies Consistency Analysis provides relevant development standards from the Santa Cruz County General Plan, as well as an explanation of how each is consistent with the project. Construction and O&M of the project will not conflict with any relevant land use plans, policies, or regulations. Therefore, no impact will occur.

3.2.4.10 Question 3.2h – Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? – No Impact

The project components are not located within the boundaries of any HCP area or NCCP area. Therefore, no impact will occur.

3.2.4.11 Question 3.2i – 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?

Construction – Less-than-Significant Impact

During periods of peak construction, a maximum of 70 people are anticipated to be working on this project at any given time. The majority of workers will commute to the project area from neighboring communities or stay at local lodging establishments during construction. Permanent relocation of workers is not anticipated and no new housing will be constructed as part of the project. As a result, local park and recreation area use will not increase during construction.

Approximately three new tubular steel poles will be installed within Pinto Lake County Park during construction. The installation of these poles will require a temporary closure of at least some portions of Pinto Lake County Park, if not the entire park. The work areas surrounding these three poles, as depicted in Attachment 2-A: Detailed Route Maps (Chapter 2 – Project Description), will be closed for a total of approximately 10 days to facilitate the excavation, pouring, and curing of the foundations, and the erection of the poles. An additional partial closure, lasting approximately 7 days, of the area within the ROW will be required during the installation of the six conductors. These temporary closures may result in an increased use of nearby parks during this period, particularly if the park is closed completely for brief periods during construction. However, the closures will be very short term, and the anticipated increase in use of nearby parks during this time will not cause substantial physical deterioration of these facilities. As a result, a less-than-significant impact will occur.

Operation and Maintenance – No Impact

Project O&M activities will not create a need for additional housing or the need for long-term population immigration sufficient to result in a permanent increase in recreational facility use. No new employees will be hired to maintain the 115 kV power lines. Therefore, there will be no impact.

3.2.4.12 Question 3.2j – 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

As discussed previously, project construction and O&M activities will not require the construction or expansion of recreational facilities. As a result, no impacts will occur.

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ATTACHMENT 3.2-A: POLICIES CONSISTENCY ANALYSIS

ATTACHMENT 3.2-A: POLICIES CONSISTENCY ANALYSIS

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
Santa Cruz County General Plan			
Land Use Element			
2.21.4: Location of Public Utility Transmission Facilities Public utility transmission and distribution facilities, including substations, shall be allowed in all land use districts, provided, however, that the routes or site plans of all proposed gas and electric transmission lines and substations shall be submitted to the Planning Department for review and recommendations prior to the acquisition of necessary land rights. No discretionary permit shall be required for a proposed land use which is subject to the jurisdiction of the California Public Utilities Commission or the California Energy Commission.	• Agriculture and Forestry, Land Use and Planning, and Recreational Resources	Yes	While the requirement of Planning Department review of route or site plans does not apply to Pacific Gas and Electric Company's (PG&E) project, this local policy does indicate consistency of public utility facilities in all land use districts and recognizes California Public Utilities Commission discretionary permitting authority.
Circulation Element			
3.9.4: Maintenance Require that contractors and utility companies doing roadside work maintain the road edge in the best possible condition during construction and, upon project completion, improve the road shoulder to the pre-construction condition or better.	• Transportation and Traffic	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. All temporarily disturbed areas will be restored to pre-construction conditions, to the extent practicable, following construction. This will include returning areas such as road shoulders to their original contours. Existing access roads that have been widened will be returned to their pre-construction widths.
Conservation and Open Space Element			
5.1.6: Development Within Sensitive Habitats Sensitive habitats shall be protected against any significant disruption of habitat values; and any proposed development within or adjacent to these areas must maintain or enhance the functional capacity of the habitat. Reduce in scale, redesign, or, if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of a project is legally necessary to allow a reasonable use of the land.	• Biological Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Sensitive habitats within the project area include aquatic features and essential and adjacent habitat for rare, threatened, endangered, or otherwise protected species. With implementation of the applicant-proposed measures (APMs) described in Section 3.4 Biological Resources, impacts to these habitats will be less than significant. These measures include, but are not limited to, avoidance and minimization of impacts to special-status plant populations, pre-construction surveys for special-status wildlife, and on-site biological monitoring.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
5.1.7: Site Design and Use Regulations Protect sensitive habitats against any significant disruption or degradation of habitat values in accordance with the Sensitive Habitat Protection ordinance. Utilize the following site design and use regulations on parcels containing these resources, excluding existing agricultural operations: (a) Structures shall be placed as far from the habitat as feasible. (b) Delineate development envelopes to specify location of development in minor land divisions and subdivisions. (c) Require easements, deed restrictions, or equivalent measures to protect that portion of a sensitive habitat on a project parcel which is undisturbed by a proposed development activity or to protect sensitive habitats on adjacent parcels. (d) Prohibit domestic animals where they threaten sensitive habitats. (e) Limit removal of native vegetation to the minimum amount necessary for structures, landscaping, driveways, septic systems and gardens; (f) Prohibit landscaping with invasive or exotic species and encourage the use of characteristic native species.	• Biological Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project will replace existing poles, typically within 20 feet; however, some pole locations may be located more than 20 feet from existing locations to avoid habitats for sensitive species, for engineering design reasons, or for other reasons. The project does not involve minor land divisions or subdivisions. The project follows existing rights-of-way (ROWs); the grantee, PG&E, does not have the authority to grant easements, deed restrictions, or equivalent measures to protect sensitive habitats within them; moreover, such habitat protection measures may not be consistent with PG&E's existing easement rights. The project does not include domestic animals. Vegetation clearing will be confined to the minimal amount necessary to facilitate construction activities. No landscaping containing invasive or exotic species will be implemented for the project.
5.1.8: Chemicals Within Sensitive Habitats Prohibit the use of insecticides, herbicides, or any toxic chemical substance in sensitive habitats, except when an emergency has been declared, when the habitat itself is threatened, when a substantial risk to public health and safety exists, including maintenance for flood control by Public Works, or when such use is authorized pursuant to a permit issued by the Agricultural Commissioner.	• Biological Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E uses herbicides to keep vegetation clear around the existing poles to reduce the risk of fire and will continue to apply the same methods during operation and maintenance of the project.
5.1.9: Biotic Assessments Within the following areas, require a biotic assessment as part of normal project review to determine whether a full biotic report should be prepared by a qualified biologist: (a) Areas of biotic concern, mapped; (b) Sensitive habitats, mapped & unmapped	• Biological Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. A Biological Resources Technical Report has been conducted for the project that includes the results of biological surveys, impacts of the project on biological resources, and measures to reduce impacts.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
5.2.5: Setback From Wetlands Prohibit development within the 100 foot riparian corridor of all wetlands. Allow exceptions to this setback only where consistent with the Riparian Corridor and Wetlands Protection ordinance, and in all cases, maximize distance between proposed structures and wetlands. Require measures to prevent water quality degradation from adjacent land uses, as outlined in the Water Resources section.	• Hydrology and Water Quality	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. There are fresh emergent wetlands near poles located approximately 400 feet east of the intersection of Lapus Drive and Agate Drive, approximately 2,150 feet east of the intersection Mountain View Road and Linden Road, and approximately 1,200 feet west of the intersection of Aldridge Lane and Blake Avenue. No new structures are proposed to be constructed within wetlands and the distance between proposed structures and wetlands will be maximized.
5.7.3: Erosion Control For Stream and Lagoon Protection For all new and existing development and land disturbances, require the installation and maintenance of sediment basins, and/or other strict erosion control measures, as needed to prevent siltation of streams and coastal lagoons. (Also see Erosion policies in section 6.3.)	• Hydrology and Water Quality	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will develop a Storm Water Pollution Prevention Plan (SWPPP), which will control erosion and prevent sediment from entering drainages and streams within the project area.
5.10.2: Development Within Visual Resource Areas Recognize that visual resources of Santa Cruz County possess diverse characteristics and that the resources worthy of protection may include, but are not limited to, ocean views, agricultural fields, wooded forests, open meadows, and mountain hillside views. Require projects to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to protect these resources consistent with the objectives and policies of this section. Require discretionary review for all development within the visual resource area of Highway One, outside of the Urban/Rural boundary, as designated on the GP/LCP Visual Resources Map and apply the design criteria of Section 13.20.130 of the County's zoning ordinance to such development.	• Aesthetics	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project is subject to the discretion of the CPUC; therefore, no discretionary permit will be required for the proposed land use. The project involves upgrading an existing power line and therefore the setting already includes utility structures. Based on the visual analysis conducted for the project, the project will not substantially affect the existing visual character of the environment. The project is not visible from State Route (SR-) 1.
5.10.11: Development Visible from Rural Scenic Roads In the viewsheds of rural scenic roads, require new discretionary development, including development envelopes in proposed land divisions, to be sited out of public view, obscured by natural landforms and/or existing vegetation. Where proposed structures on existing lots are unavoidably visible from scenic roads, identify those visual qualities worthy of protection (See policy 5.10.2) and require the siting, architectural design and landscaping to mitigate the impacts on those visual qualities (See policy 5.14.10.).	• Aesthetics	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project crosses two county-designated scenic roadways—Amesti Road and Corralitos Road. The project lies approximately 0.8 mile from SR-1 and 1.25 miles from SR-152, which is generally outside the viewshed of these two roadways. The project involves upgrading an existing power line. Based on the visual analysis conducted for the project, the project will not substantially affect existing roadway views.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
5.10.13: Landscaping Requirements All grading and land disturbance projects visible from scenic roads shall conform to the following visual mitigation conditions: (a) Blend contours of the finished surface with the adjacent natural terrain and landscape to achieve a smooth transition and natural appearance; and (b) Incorporate only characteristic or indigenous plant species appropriate for the area. (See policies 5.10.18, 5.10.19 and 5.10.20.)	• Aesthetics	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project will be visible from Amesti Road and Corralitos Road, county-designated scenic roadways. The project involves 23 acres of vegetation removal along the approximately 8.8-mile-long power line and some minor grading may occur within 21.9 acres of these temporary work areas. Disturbed areas will be restored to resemble pre-construction contours and will be revegetated in accordance with the Revegetation and Monitoring Plan as appropriate. No landscaping containing exotic or invasive species will be implemented for the project.
5.10.23: Transmission Lines and Facilities Require transmission line rights-of-way and facilities to be reviewed in accordance with the Zoning ordinance to minimize impacts on significant public vistas; especially in scenic rural areas, and to avoid locations which are on or near sensitive habitat, recreational, or archaeological resources, whenever feasible.	• Agriculture and Forestry, Land Use and Planning, and Recreational Resources • Biological Resources • Cultural Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Power line ROWs and facilities within County jurisdiction are allowed in all zoning districts crossed by the project except for land zoned Commercial Agriculture or Commercial Agriculture – Agricultural Preserve. However, pre-existing uses are not considered a conflict. The project upgrades an existing power line, which is an existing use within these agricultural zoning designations. Therefore, the pole replacements will not result in a change to the existing conditions. The project will not significantly impact sensitive habitats, archaeological resources, or public vistas.
5.19.1: Evaluation of Native American Cultural Sites Protect all archaeological resources until they can be evaluated. Prohibit any disturbance of Native American Cultural Sites without an appropriate permit. Maintain the Native American Cultural Sites ordinance.	• Cultural Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. All significant or potentially significant archaeological resources documented during the cultural resources survey will be avoided by the project. If any previously unidentified archaeological resources are discovered during site preparation, grading, excavation, construction, or other development activities, all operations within 50 feet of the find shall cease and PG&E's cultural resources specialist shall be contacted. Once the find has been identified and evaluated, PG&E's cultural resources specialist will make the necessary plans for treatment of the find and mitigation of impacts if the find is determined to be significant as defined by the California Environmental Quality Act (CEQA).

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
5.19.2: Site Surveys Require an archaeological site survey (surface reconnaissance) as part of the environmental review process for all projects with very high site potential as determined by the inventory of archaeological sites, within the Archaeological Sensitive Areas, as designated on the General Plan and LCP Resources and Constraints Maps filed in the Planning Department.	• Cultural Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project site was surveyed for cultural resources and a Cultural Resources Technical Report was prepared for the project.
5.19.3: Development Around Archaeological Resources Protect archaeological resources from development by restricting improvements and grading activities to portions of the property not containing these resources, where feasible, or by preservation of the site through project design and/or use restrictions, such as covering the site with earthfill to a depth that ensures the site will not be disturbed by development, as determined by a professional archaeologist.	• Cultural Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. All significant or potentially significant archaeological resources documented during the cultural resources survey will be avoided by the project.
5.19.5: Native American Cultural Sites Prohibit any disturbance of Native American Cultural Sites without an archaeological permit which requires, but is not limited to, the following: (a) A statement of the goals, methods, and techniques to be employed in the excavation and analysis of the data, and the reasons why the excavation will be of value. (b) A plan to ensure that artifacts and records will be properly preserved for scholarly research and public education. (c) A plan for disposing of human remains in a manner satisfactory to local Native American Indian groups.	• Cultural Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. All significant or potentially significant archaeological resources documented during the cultural resources survey will be avoided by the project. If any previously unidentified archaeological resources are discovered during site preparation, grading, excavation, construction, or other development activities, all operations within 50 feet of the find shall cease and PG&E's cultural resources specialist shall be contacted. Once the find has been identified and evaluated, PG&E's cultural resources specialist will make the necessary plans for treatment of the find and mitigation of impacts if the find is determined to be significant as defined by the CEQA.
Public Safety and Noise Element			
6.1.2: Geologic Reports for Development in Alquist-Priolo Zones Require a preliminary geologic report or full engineering geology report for development on parcels within Alquist-Priolo State-designated seismic review zones.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will conduct a geotechnical investigation in areas suspected to have unstable soils or could be subject to strong ground shaking.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
6.1.3: Engineering Geology Report for Public Facilities in Fault Zones Require a full engineering geology report by a certified engineering geologist whenever a significant potential hazard is identified by a Geologic Hazards Assessment or Preliminary Geologic Report, and prior to the approval of any new public facility or critical structure within the designated fault zones.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will contract a certified engineering geologist to conduct a geotechnical investigation in areas that are suspected to have unstable soils or could be subject to strong ground shaking. PG&E will consider the recommendations and findings provided in the Geotechnical Report in the final design to minimize the effects of expansive soils, differential settling, and strong ground shaking.
6.1.8: Design Standards for New Public Facilities Require all new public facilities and critical structures to be designed to withstand the expected ground shaking during the design earthquake on the San Andreas Fault.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The power poles and substation components will be designed to withstand the expected ground shaking.
6.2.1: Geologic Hazards Assessments for Development On and Near Slopes Require a geologic hazards assessment of all development, including grading permits, that is potentially affected by slope instability, regardless of the slope gradient on which the development takes place. Such assessment shall be prepared by County staff under supervision of the County Geologist, or a certified engineering geologist may conduct this review at the applicant's choice and expense.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will contract a certified engineering geologist to conduct a geotechnical investigation in areas that are suspected to have unstable soils or could be subject to strong ground shaking prior to construction.
6.2.2: Engineering Geology Report Require an engineering geology report by a certified engineering geologist and/or a soils engineering report when the hazard assessment identifies potentially unsafe geologic conditions in an area of proposed development.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will contract a certified engineering geologist to conduct a geotechnical investigation in areas that are suspected to have unstable soils or could be subject to strong ground shaking. PG&E will consider the recommendations and findings provided in the Geotechnical Report in the final design to minimize the effects of expansive soils, differential settling, and strong ground shaking. The final design will be reviewed by a Professional Engineer registered in the State of California prior to construction.
6.2.4: Mitigation of Geologic Hazards and Density Considerations Deny the location of a proposed development or permit for a grading project if it is found that geologic hazards cannot be mitigated to within acceptable risk levels; and approve development proposals only if the project's density reflects consideration of the degree of hazard on the site, as determined by technical information.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will consider the recommendations and findings provided in the Geotechnical Report in the final design to minimize the effects of expansive soils, differential settling, and strong ground shaking.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
6.3.2: Grading Projects to Address Mitigation Measures Deny any grading project where a potential danger to soil or water resources has been identified and adequate mitigation measures cannot be undertaken.	• Geology, Soils, and Mineral Resources • Hydrology and Water Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will consider the recommendations and findings provided in the Geotechnical Report in the final design to minimize the effects of expansive soils, differential settling, and strong ground shaking. With implementation of the project's SWPPP, no impacts to water resources as a result of grading activities will occur.
6.3.5: Installation of Erosion Control Measures Require the installation of erosion control measures consistent with the Erosion Control ordinance, by October 15, or the advent of significant rain, or project completion, whichever occurs first. Prior to October 15, require adequate erosion control to be provided to prevent erosion from early storms. For development activities, require protection of exposed soil from erosion between October 15 and April 15 and require vegetation and stabilization of disturbed areas prior to completion of the project. For agricultural activities, require that adequate measures are taken to prevent excessive sediment from leaving the property.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Standard erosion control procedures and the project's SWPPP will be implemented to control erosion during construction activities.
6.3.7: Reuse of Topsoil and Native Vegetation Upon Grading Completion Require topsoil to be stockpiled and reapplied upon completion of grading to promote regrowth of vegetation; native vegetation should be used in replanting disturbed areas to enhance long-term stability.	• Biological Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. If it becomes necessary to disturb areas containing special-status plant populations, additional measures will be implemented as described in PG&E's Revegetation and Monitoring Plan.
6.3.8: On-Site Sediment Containment Require containment of all sediment on the site during construction and require drainage improvements for the completed development that will provide runoff control, including onsite retention or detention where downstream drainage facilities have limited capacity. Runoff control systems or Best Management Practices shall be adequate to prevent any significant increase in site runoff over pre-existing volumes and velocities and to maximize on-site collection of non-point source pollutants.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Standard erosion control procedures and the project's SWPPP will be implemented to contain all sediment at each work area during construction. Existing drainage ditches at Rob Roy Substation direct runoff around the substation to reduce the sheet flow across the substation. The drainage ditches discharge into drainages along Freedom Boulevard, which have sufficient capacity for the current amount of runoff. The Rob Roy Substation modification will create less than 0.1 acre of new impervious surface, which will not cause a significant increase in site runoff over existing volumes and velocities.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
6.3.10: Land Clearing Permit Require a land clearing permit and an erosion control plan for clearing one or more acres, except when clearing is for existing agricultural uses. Require that any erosion control and land clearing activities be consistent with all General Plan and LCP Land Use Plan policies.	• Geology, Soils, and Mineral Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Erosion control will be implemented consistent with the SWPPP to be prepared for the project. Land-clearing activities will be conducted consistent with applicable policies.
6.3.11: Sensitive Habitat Considerations for Land Clearing Permits Require a permit for any land clearing in a sensitive habitat area and for clearing more than one quarter acre in Water Supply Watershed, Least Disturbed Watershed, very high and high erosion hazard areas no matter what the parcel size. Require that any land clearing be consistent with all General Plan and LCP Land Use policies.	• Biological Resources • Geology, Soils, and Mineral Resources • Hydrology and Water Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project is not located within areas with high or very high erosion hazards. Land-clearing activities will be conducted consistent with applicable policies. The project is not located in an area designated as a Water Supply Watershed or Least Disturbed Watershed.
6.4.2: Development Proposals Protected from Flood Hazard Approve only those grading applications and development proposals that are adequately protected from flood hazard and which do not add to flooding damage potential. This may include the requirement for foundation design which minimizes displacement of flood waters, as well as other mitigation measures.	• Hydrology and Water Quality	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. No permanent structures will be installed within flood hazard areas. Construction of the project will not impact any levees or dams or result in flooding as a result of the failure of a levee or dam. Similarly, the project does not have the potential to add to flooding damage potential. The project is not located within a tsunami inundation area and does not span any lakes, pools, or bounded water bodies.
6.4.4: Locate Public Facilities Outside Flood Hazard Areas Require new utilities, critical facilities and non-essential public structures to be located outside the 100-year flood and coastal high hazard areas, unless such facilities are necessary to serve existing uses, there is no other feasible location, and construction of these structures will not increase hazards to life or property within or adjacent to the floodplain or coastal inundation areas.	• Hydrology and Water Quality	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. No permanent project components will be removed, installed, or replaced in 100-year flood hazard areas or coastal high hazard areas.
6.4.7: New Construction to be Outside Flood Hazard Areas Restrict new construction to the area outside the 100-year floodplain and area subject to coastal inundation, if a buildable portion of the parcel exists outside such areas.	• Hydrology and Water Quality	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. No permanent project components will be installed within 100-year floodplains or areas subject to coastal inundation.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
6.5.7: Certification of Adequate Fire Protection Prior to Permit Approval Require all land divisions, multi- unit residential complexes, commercial and industrial complexes, public facilities and critical utilities to obtain certification from the appropriate fire protection agency that adequate fire protection is available, prior to permit approval.	• Hazards and Hazardous Materials	NA	Local development regulations do not apply to PG&E's utility project, thus, PG&E is not subject to this requirement.
6.5.8: Public Facilities Within Critical Fire Hazard Areas Discourage location of public facilities and critical utilities in Critical Fire Hazard Areas. When unavoidable, special precautions shall be taken to ensure the safety and uninterrupted operation of these facilities.	• Hazards and Hazardous Materials	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Approximately 86 of the poles will be located within moderate fire hazard severity zones and 14 poles will be located within high fire hazard severity zones; however, these poles will replace existing poles, and some wood poles will be replaced with tubular steel poles, which are more fire resistant. In addition, smoking will not be permitted in during fire season, except in barren areas that are cleared to mineral soil at least 10 feet in diameter or within vehicles or enclosed equipment cabs. Construction crew trucks and equipment will carry emergency fire suppression equipment.
6.6.1: Hazardous Materials Ordinance Maintain the County's Hazardous Materials ordinance, placing on users of hazardous and toxic materials the obligation to eliminate or minimize the use of such materials whenever possible, and in all cases to minimize the release, emission, or discharge of hazardous materials to the environment, and properly to handle all hazardous materials and to disclose their whereabouts. Further, maintain the County's ordinance relating to ozone-depleting compounds. Ensure that any amendment of existing ordinance provisions is based on a finding that the amendments will provide protection to the environment and the community against toxic hazards that is equal to or stronger than the existing provisions.	• Hazards and Hazardous Materials	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. Table 3.7-2: Hazardous Materials Typically Used for Construction in Section 4.7 Hazards and Hazardous Materials provides a list of hazardous materials to be used during project construction. PG&E will minimize the use of hazardous and toxic materials used for construction along the power lines and at Rob Roy Substation during operation to the extent feasible. Properly handling of hazardous materials will reduce the risk of spills.
6.9.7: Construction Noise Require mitigation of construction noise as a condition of future project approvals.	• Noise	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. PG&E will implement the APMs described in Section 3.9 Noise to reduce potentially significant construction noise impacts to a less-than-significant level. These measures include limiting construction activities to permitted hours, shielding equipment when feasible and in close proximity to residences, and restricting helicopter flight paths.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
Parks and Recreation, and Public Facilities Element			
7.1.3: Parks, Recreation and Open Space Uses Allow low intensity uses which are compatible with the scenic values and natural setting of the county for open space lands which are not developable; and allow commercial recreation, County, State and Federal parks, preserves, and biotic research stations, local parks and passive open space uses for park lands which are developable.	• Aesthetics	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project involves upgrading an existing power line and does not affect the intensity of land uses.
7.25.7: Hazardous Wastes and Environmental Damaging Compounds in Landfills Prohibit the disposal of radioactive waste, hazardous waste and ozone depleting compounds in County landfills.	• Hazards and Hazardous Materials	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project will not dispose of radioactive waste or ozone depleting compounds. Hazardous waste will be disposed of at an authorized landfill site outside of Santa Cruz County.
7.26.2: Protecting Scenic Quality Discourage new high- voltage overhead transmission line corridors that impinge upon the scenic quality of the County and may pose a health hazard. Consider placing existing transmission lines underground.	• Aesthetics • Hazards and Hazardous Materials	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project involves replacing poles within existing power line corridors where existing utility structures are present; therefore the project will not introduce a new utility line corridor.
7.26.3 Recreational Use of Utility Rights-of-Way Encourage the use of utility rights-of-way for bikeways and hiking paths where appropriately located and where shown to be not hazardous to users.	• Agriculture and Forestry, Land Use and Planning, and Recreational Resources	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The power line ROWs do not allow entry of unauthorized users based on land owner agreements and are not appropriate for bikeways or hiking paths.

Policy Description	Applicable Resource Area	Consistency (Yes/No)	Explanation
Community Design			
8.6.6: Protecting Ridgetops and Natural Landforms Protect ridgetops and prominent natural landforms such as cliffs, bluffs, dunes, rock outcroppings, and other significant natural features from development. In connection with discretionary review, apply the following criteria: (a) Development on ridgetops shall be avoided if other developable land exists on the property. (b) Prohibit the removal of tree masses when such removal would erode the silhouette of the ridgeline form. Consider the cumulative effects of tree removal on the ridgeline silhouette. (c) Restrict the height and placement of buildings and structures to prevent their projection above the ridgeline or treeline. Restrict structures and structural projections adjacent to prominent natural land forms. Prohibit the creation of new parcels which would require structures to project above the ridgeline, treeline or along the edge of prominent natural landforms. (d) Require exterior materials and colors to blend with the natural landform and tree backdrops. With respect to the issuance of administerial permits, advise all applicants that they should design and site their structures to conform to the above policies.	• Aesthetics	Yes	Although local development regulations do not apply to PG&E's utility project, the policies contained in this regulation are nevertheless consistent with PG&E's project. The project involves upgrading an existing power line in a landscape setting that currently includes utility structures and will not substantially alter the existing visual character of ridgelines or prominent landforms.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less than Significant 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 non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			✓	
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?			✓	
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓

3.3.1 Introduction

This section describes the existing air quality within the project area and evaluates the potential impacts to air quality associated with construction and operation and maintenance (O&M) of the project. The project area is located within the North Central Coast Air Basin (NCCAB) and is subject to the jurisdictional regulations of the Monterey Bay Unified Air Pollution Control District (MBUAPCD) and, to a lesser extent, the California Air Resources Board (CARB). Although some temporary impacts will result from the project, primarily during construction, with implementation of the minimization measures listed in Section 3.3.4.2 Applicant-Proposed Measures, the potential air quality impacts from the project will be less than significant.

3.3.2 Methodology

The existing air quality within southern Santa Cruz County was researched using data obtained from the MBUAPCD's network of air quality monitoring stations. Recent regulations and guidance documents from the CARB, California Public Utilities Commission (CPUC), California Energy Commission (CEC), and MBUAPCD were also reviewed.

The project's air emissions were assessed by estimating emission rates from construction and O&M activities, and then comparing the emissions to established significance criteria. In analyzing odor and sensitive receptor impacts, the assessment was based on subjective criteria, including experience with similar power line projects. Air pollutant emission rates for off-road construction equipment were estimated using the publicly available software, URBEMIS version 9.2.4 (URBEMIS). This computer model allows users to generate estimates of construction and operational emissions of various pollutants—including inhalable particulate matter (PM), or PM that is less than 10 microns in diameter (PM_{10}); fine PM, or PM that is less than 2.5 microns in diameter ($PM_{2.5}$); carbon monoxide (CO); reactive organic gases (ROGs); sulfur oxides (SO_x); nitrogen oxides (NO_x); and carbon dioxide (CO_2). URBEMIS also allows users to input minimization measures and evaluate their effects on emission rates. In URBEMIS, construction activities can be divided into the following seven components:

- Demolition
- Fine Site Grading
- Mass Site Grading
- Trenching
- Building Construction
- Architectural Coating
- Paving

Emissions for off-road vehicle use were simulated with the URBEMIS model using site-specific information to generate emission rates based on the project's anticipated size, schedule, land use, and construction methods. Additional criteria air pollutant emissions rates for on-road vehicle use were generated using the CARB's Emissions Factors (EMFAC) 2007 software. The Federal Aviation Administration's Emissions and Dispersion Modeling System (EDMS) was used to simulate emissions from helicopter use during the installation and removal of poles and conductors. The calculation methodology for emission rates simulated using URBEMIS, EMFAC, and EDMS is provided in Attachment 3.3-A: Project Emissions Calculation Methodology.

Greenhouse gas (GHG) emissions were calculated by first simulating emissions of CO_2 using the URBEMIS, EMFAC, and EDMS models, and then using the calculated results in conjunction with the methods from the California Climate Action Registry (CCAR) General Reporting Protocol version 3.1 manual, as well as data from the California Statewide GHG Inventory, to develop estimated methane (CH_4) and nitrous oxide (N_2O) emissions. The global warming potentials (GWPs) of CO_2, CH_4, and N_2O—1, 21, and 310, respectively—were then multiplied by their emission rates to calculate carbon dioxide equivalent (CO_2E) emission rates. A detailed description of this methodology is presented in Attachment 3.3-A: Project Emissions Calculation Methodology.

3.3.3 Existing Conditions

3.3.3.1 Regulatory Background

Federal

The 1970 federal Clean Air Act (CAA) established ambient air quality standards for six pollutants—CO, ozone (O_3), PM_{10}, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead—which are known to have adverse impacts on human health and the environment. To protect human health and the environment, the United States Environmental Protection Agency (EPA) set primary and secondary maximum ambient thresholds for criteria pollutants. The primary thresholds were set to protect human health, particularly for children and the elderly, as well as for individuals who suffer from chronic lung conditions (e.g., asthma, emphysema). The secondary standards were set to protect the natural environment and prevent further adverse effects on animals, crops, vegetation, and buildings. The combined primary and secondary standards set by the EPA are termed the National Ambient Air Quality Standards (NAAQS).

The 1977 CAA Amendments required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that exceeds the NAAQS for that pollutant. The SIP serves as a tool to reduce levels of pollutants known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was further amended to strengthen regulation of both stationary and mobile emission sources for the criteria pollutants.

In July 1997, the EPA developed new health-based NAAQS for O_3 and PM_{10}. However, these standards were not fully implemented until 2001, after the resolution of several lawsuits. The new federal O_3 standard of 0.080 parts per million (ppm), established in 1997, was based on a longer averaging period (8-hour versus 1-hour), recognizing that prolonged exposure to O_3 is more damaging. In March 2008, the EPA further lowered the 8-hour O_3 standard from 0.080 ppm to 0.075 ppm. The new federal standard for particulate matter is based on finer particles ($PM_{2.5}$ versus PM_{10}), recognizing that $PM_{2.5}$ may have a higher residence time in the lungs and contribute to greater respiratory illness. In February 2007, the NO_2 NAAQS was amended to lower the existing 1-hour standard of 0.25 ppm to 0.18 ppm, not to be exceeded, and established a new annual standard of 0.030 ppm, not to be exceeded. Table 3.3-1: State and Federal Ambient Air Quality Standards contains a list of the NAAQS and the California Ambient Air Quality Standards (CAAQS).

Table 3.3-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard[1, 3]	Federal Standard[2]	
			Primary[3, 5]	Secondary[3, 6]
O_3	1-hour	0.09 ppm (180 µg/m^3)	NA	NA
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	0.075 ppm (147 µg/m^3)
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3	150 µg/m^3
	Annual arithmetic mean	20 µg/m^3	NA	NA
$PM_{2.5}$	24-hour	NA	35 µg/m^3	35 µg/m^3
	Annual arithmetic mean	12 µg/m^3	15 µg/m^3	15 µg/m^3
CO	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	NA
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	NA
	8-hour (Lake Tahoe)	6 ppm (7 mg/m^3)	NA	NA
NO_2	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppb (188 µg/m^3)[8]	NA
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppb (100 µg/m^3)[8]	0.053 ppm (100 µg/m^3)
SO_2	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppb (196 µg/m^3)[9]	NA
	3-hour	NA	NA	0.5 ppm (1,300 µg/m^3)[9]
	24-hour	0.04 ppm (105 µg/m^3)	NA	NA
Lead[10]	30-day	1.5 µg/m^3	NA	NA
	Rolling 3-month[11]	NA	0.15 µg/m^3	0.15 µg/m^3
	Quarterly	NA	1.5 µg/m^3	1.5 µg/m^3

Source: CARB, 2011a

Key: mg/m^3 = milligrams per cubic meter, µg/m^3 = micrograms per cubic meter, ppb = parts per billion, NA = not applicable

Table Notes:

1. The CAAQS for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Title 17 of the California Code of Regulations Section 70200.

2. The NAAQS (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3. Concentrations are expressed first in the units in which they were promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C. and a reference pressure of 760 torr (1 torr is the pressure approximately exerted by 1 millimeter of mercury). Most measurements of air quality are to be corrected to a reference temperature of 25°C. and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality deemed necessary, with an adequate margin of safety, to protect the public health.
6. National Secondary Standards: The levels of air quality deemed necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used, but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. To attain this standard, the 3-year average of the 98^{th} percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb) and California standards are in units of ppm. To directly compare the NAAQS to the CAAQS, the units can be converted from ppb to ppm. In this case, the NAAQS of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 9, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99^{th} percentile of 1-hour daily maximum concentrations. The EPA also proposed a new automated Federal Reference Method using ultraviolet technology, but will retain the older pararosaniline methods until the new Federal Reference Method has adequately permeated state monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by the EPA. Note that the new national standard is in units of ppb, and CAAQS are in units of ppm. To directly compare the new primary national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects established. These actions allow for implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. National lead standard, rolling 3-month average; final rule signed October 15, 2008.

State

The California Clean Air Act of 1988 (CCAA) provided the framework for the management of air quality throughout the state. The CCAA requires local air quality management districts to develop and implement strategies to attain the CAAQS. For some pollutants, the CAAQS are more stringent than the NAAQS, and the CCAA mandated that the air districts prepare air quality plans specifying how both the federal and state standards would be met. The CAAQS are listed in Table 3.3-1: State and Federal Ambient Air Quality Standards.

The CARB enforces the CAAQS and works with the state's Office of Environmental Health Hazard Assessment (OEHHA) in identifying toxic air contaminants (TACs) and enforcing rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987. Enacted to identify TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, this 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 those emissions.

The CARB also regulates mobile emission sources in California (such as construction equipment, trucks, and automobiles) and oversees the air districts. Relevant programs related to the oversight of mobile source emissions include the Off-Road and On-Road Mobile Sources Reduction Programs, the Portable Equipment Registration Program (PERP), and the Airborne Toxic Control Measure for Diesel Particulate Matter (DPM) from Portable Engines. The Mobile Sources Emission Reduction Programs are aimed at reducing NO_x, volatile organic compounds (VOCs), CO, and PM_{10}. The CARB has also adopted specific control measures for the reduction of DPM from off-road (in-use) diesel vehicles (rated at 25 horsepower or higher), such as backhoes, bulldozers, and other earthmovers, used in construction projects. Additional DPM control measures are also in place for heavy-duty on-road diesel trucks operated by public utilities and municipalities. The PERP and Airborne Toxic Control Measure for DPM (for portable engines) provide for state-wide registration and control of DPM from portable engines rated 50 horsepower and higher.

Climate Change Policies and Regulations

Many chemical compounds found in the earth's atmosphere act as "greenhouse gases" (GHGs). These gases allow sunlight to enter the atmosphere freely but absorb heat radiated from the surface of the earth and trap the heat in the atmosphere. Many gases exhibit these "greenhouse" properties. Some of these gases—such as water vapor, CO_2, CH_4, and N_2O—occur in nature, while others—such as gases used for aerosols—are man-made. For the temperature of the earth's surface to remain roughly constant over time, the amount of energy sent from the sun to the earth's surface should be about the same as the amount of energy radiated back into space. The generally accepted scientific understanding is that human-caused increases in GHG have and will continue to contribute to global warming; however, the scientific community is still in disagreement over the rate or magnitude of this warming.

Over the past decade, the issue of climate change has developed into a critical issue for consideration in land use planning. The public and political will to address this issue has resulted in recent California legislation designed to curb emissions and mandate limits and reductions on GHG emissions. The California Climate Action Team's Report to the Governor, published in

April 2006, identified initial strategies that the state should pursue for managing GHG emissions. California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, set into law the 2020 GHG reduction goal, requiring the CARB to adopt a statewide GHG emissions limit equivalent to 1990 levels by 2020. The following six compounds have been defined as GHGs under AB32:

- CO_2
- CH_4
- N_2O
- hydrofluorocarbons
- perfluorocarbons
- sulfur hexafluoride (SF_6)

To achieve this reduction goal, the CARB is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG-emission reductions. The CARB established the statewide emissions limit for 2020 at its meeting on December 6, 2007. At the same time, the CARB also adopted regulations that require mandatory GHG emissions reporting.

The CPUC and CEC concluded a lengthy proceeding in October 2008 to provide electricity and natural gas-specific recommendations to the CARB for inclusion in its scoping plan and AB32 regulations and programs. The CARB adopted a comprehensive scoping plan in December 2008 that outlined programs designed to achieve the 2020 GHG reduction goal of 174 million metric tons of CO_2E ($MMTCO_2E$) emissions through regulations, market mechanisms, and other actions. For the electricity sector, the scoping plan adopted the fundamental recommendations of the CPUC for both investor-owned and publicly owned utilities to continue, and increase the implementation of, programs designed to reduce emissions. Such programs include energy efficiency programs, increasing the use of electricity supplies obtained from renewable generation sources to 33 percent by 2020, and adopting a cap and trade system to ensure an overall reduction of emissions from electric generation. As stated in the Final Recommendations:

> *"The electricity and natural gas sectors will play a critical role in achieving this ambitious goal. Indeed, [C]ARB's Climate Change Draft Scoping Plan envisions that the electricity sector will contribute at least 40 percent of the total statewide GHG reductions, even though the sector currently creates just 25 percent of California's GHG emissions. This is before considering the additional emissions reductions that are projected to result from a GHG emissions allowance cap and trade system, if such a system is adopted and implemented. The electricity sector is expected to reduce its emissions further due to its participation in such a market-based system."*

The CPUC/CEC Joint Recommendation Decision, adopted on October 16, 2008, details the planned GHG reductions. This document makes three important points. First, GHG emissions from the electricity sector have been essentially flat since 1990. Second, the "reference case" modeled by the CPUC's consultants (the current 20 percent Renewable Portfolio Standard[1] [RPS] and existing energy efficiency programs) would result in continued compliance with the electricity sector's 1990 proportional share of GHG emissions by 2020, despite population

[1] The requirement imposed on utilities to derive a specified percentage of their power from renewable sources.

growth. Third, the "accelerated policy case" (33-percent RPS plus greater energy efficiency as proposed by the CPUC, CEC, and CARB) would produce about 30 $MMTCO_2E$ of annual reductions, or 27 percent below 1990 levels. This is without considering additional reductions expected from a cap and trade program.

Throughout 2009, CARB staff drafted rules to implement the AB32 Scoping Plan and held public workshops on each measure, including market mechanisms. The CARB identified "Discrete Early Actions" that would be implemented to reduce GHG emissions from the years 2007 to 2012. On January 29, 2009, the CARB also announced its regulatory schedule to adopt 74 separate regulations and other measures, including the enhanced energy efficiency programs and 33 percent RPS standard recommended in the Final Recommendations and in the CARB Scoping Plan. The early action measures identified within the Scoping Plan took effect on January 1, 2010, and the CARB continued to adopt GHG-emissions regulations throughout 2011.

AB32 – Scoping Plan Measure H-6: Reduce Sulfur Hexafluoride from Electrical Generation

Measure H-6 of the AB32 Scoping Plan targets the use of SF_6 in electrical generation equipment, such as substations. The EPA estimates that the electric power industry can achieve cost-effective SF_6 emissions reductions through operational improvements and equipment upgrades. This measure calls for owners of SF_6-containing equipment to have a maximum emission rate of 10 percent by 2011. The maximum allowable emission rate will decrease by 1 percent each year until 2020, where the threshold will remain at 1 percent. This measure took regulatory effect on June 17, 2011.

Senate Bill 2

Senate Bill (SB) 1078, passed in 2002, initially required electricity providers to obtain 20 percent of their power from renewable sources by 2020. 2006 legislation (SB 107) changed the RPS requirement to 20 percent renewable electricity sources by 2010. On November 17, 2008, Governor Schwarzenegger signed an Executive Order requiring California's investor and publicly owned utilities to obtain 33 percent of their electric power from renewable sources by 2020.

On April 12, 2011, Governor Jerry Brown signed Senate Bill (SB) 2 in the First Extraordinary Session, which expands the RPS target established in SB 107 from 20 percent by 2010 to a target of 33 percent by December 2020. By January 1, 2012, the CPUC is required to establish the quantity of electricity products from eligible renewable energy resources to be procured by obligated load serving entities (LSEs) in order to achieve targets of 20 percent by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. In addition to the obligated LSEs covered by SB 107, SB 2 applies the RPS requirements to local publicly owned electric utilities. The statute requires that the governing boards for local publicly owned utilities establish the same targets, and the governing boards are responsible for ensuring compliance with these targets. The CPUC are responsible for enforcement of the RPS for investor-owned utilities, electric service providers, and community choice aggregators, while the CEC and CARB will enforce the requirements for local publicly owned electric utilities.

California Public Utilities Commission Greenhouse Gas Emissions Performance Standard

The Electricity GHG Emission Standards Act (SB1368) was enacted in 2006. At a meeting on January 25, 2007, the CPUC adopted GHG requirements in the form of an emissions performance standard for any long-term power commitments made by the state's electrical utilities. Utilities are not allowed to enter into long-term commitments to buy base-load power from power plants that emit more than 1,100 pounds (0.5 metric ton) of CO_2 per megawatt-hour. This standard is approximately the amount emitted by a combined-cycle turbine fueled with natural gas. The GHG emissions performance standard applies to new power plants, new investments in existing power plants, and new or renewed contracts with terms of 5 years or more, including contracts with power plants located outside of California. On May 23, 2007, the CEC also adopted performance standards consistent with those of the CPUC.

Local

The air districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their respective geographic areas, and for preparing the air quality plans required under the CAA and CCAA. The project area is located within the NCCAB, and the MBUAPCD has jurisdictional control over the entire basin. The MBUAPCD stipulates rules and regulations with which all projects must comply. In addition, the MBUAPCD provides methodologies for analyzing a project's impacts under the California Environmental Quality Act (CEQA). The following plans, rules, and regulations apply to all sources within the MBUAPCD's jurisdiction.

2007 Federal Maintenance Plan

In the 2007 Federal Maintenance Plan, the MBUAPCD lays out its plan for maintaining federal (NAAQS) attainment status for O_3 within the NCCAB. The plan was prepared for the CARB in response to the 1990 Amendments to the CAA.

2004 Air Quality Management Plan

In 1991, the Air Quality Management Plan for the Monterey Bay Region (AQMP) was prepared in compliance with the CCAA. Since then, control requirements have been reduced, and the AQMP has been updated several times to reflect the changes in requirements.

In 2004, the AQMP was updated to meet the revised O_3 standard in the Monterey Bay Area. The 2004 AQMP addressed attainment of the O_3 standard only, and a separate report—the 1998 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region—addressed attainment of the PM_{10} standard. The 2004 AQMP update included measures to control emissions of VOCs and NO_x from stationary sources, as well as transportation control measures.

The 2000 update of the AQMP suggested that the NCCAB was on the borderline between attainment and nonattainment for O_3 due to variable meteorological conditions occurring from year to year, the transport of air pollution from the San Francisco Bay Area, and locally generated emissions.

3.3.3.2 Environmental Setting

Regional

Climate and Meteorology

The NCCAB is covered by a single air district, the MBUAPCD, which has jurisdiction over Santa Cruz, San Benito, and Monterey counties. The project area experiences a Mediterranean climate with warm, dry summers and mild, rainy winters. Cool and relatively stable temperatures predominate throughout the year due to the moderating influence of the Pacific Ocean. Daily variations in the climate are influenced by the interaction between ocean and land air masses that create on-shore winds during the day and weak offshore breezes at night. Onshore winds across Monterey Bay normally bring clean air to the region, which, as a result, experiences relatively good air quality.

The climate in the project area is predominately controlled by a high-pressure area in the atmosphere over the eastern Pacific Ocean. In the summer, this high-pressure area causes persistent winds over the entire California coast. Air currents, which flow inward from the ocean, bring fog and relatively cool air into the project area. In the fall, surface winds become weak and the zone of high atmospheric pressure holds the air over the NCCAB in place, which allows pollutants to build up. During this season, north or east winds often transport pollutants from either the San Francisco Bay Area or the Central Valley into the NCCAB, thus causing degraded air quality. During the winter, the high atmospheric pressure area moves southward and has less influence on the air basin. This, along with occasional storms, results in good air quality for the basin that lasts until the early spring.

Criteria Air Pollutants

O_3, CO, NO_2, SO_2, lead, PM_{10}, and $PM_{2.5}$ are all criteria air pollutants that are regulated in California. Non-methane ethane VOCs, also referred to as ROGs, are also regulated as precursors to the formation of O_3. These criteria pollutants and their effects on humans are discussed in the following sections.

Ozone

O_3 is a colorless gas that is not directly emitted as a pollutant, but is formed when hydrocarbons and NO_x react in the presence of sunlight. Low wind speeds or stagnant air mixed with warm temperatures typically provide optimum conditions for the formation of O_3. Because O_3 formation does not occur quickly, O_3 concentrations often peak downwind of the emission source. As a result, O_3 is of regional concern, impacting a larger area. When inhaled, O_3 irritates and damages the respiratory system.

Particulate Matter

PM, defined as particles suspended in a gas, is often a mixture of substances—including metals, nitrates, organic compounds, diesel exhaust, and soil. PM can be traced back to both man-made and natural sources. The most common sources of natural PM are dust and fires, while the most common man-made source is the combustion of fossil fuels.

PM causes irritation to the human respiratory system when inhaled. The extent of the health risks due to PM exposure can be determined by the size of the particles, with the smaller particles (e.g., $PM_{2.5}$) able to be more deeply deposited in the lungs.

Carbon Monoxide

CO is a colorless, odorless, and tasteless gas that is directly emitted as a by-product of combustion. CO concentrations tend to be localized to the source, and the highest concentrations are associated with cold, stagnant weather conditions. CO is readily absorbed through the lungs into the blood, where it reduces the ability of the blood to carry oxygen.

Nitrogen Oxides

NO_x is a generic name for the group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many of the NO_x are colorless and odorless. However, one common pollutant—NO_2, along with particles in the air—can often be seen as a reddish-brown layer over many urban areas.

NO_x form when fuel is burned at high temperatures. Typical manmade sources of NO_x include motor vehicles; fossil-fueled electricity generation; and other industrial, commercial, and residential sources that burn fossil fuels. With sufficient exposure, NO_x can harm humans by affecting the respiratory system. Small particles can penetrate the sensitive parts of the lungs, causing or worsening respiratory disease and aggravating existing heart conditions.

As discussed previously, O_3 is formed when NO_x and VOCs react with sunlight.

Sulfur Oxides

SO_x form when sulfur-containing materials are processed or burned. SO_x sources include industrial facilities—such as petroleum refineries and cement manufacturing and metal processing facilities—locomotives, large ships, and some non-road diesel equipment.

A wide variety of adverse health and environmental impacts are associated with SO_x because of the way they react with other substances in the air. People with asthma, children, the elderly, and people with heart or lung disease are particularly sensitive to SO_x emissions. When inhaled, these particles gather in the lungs and contribute to increased respiratory symptoms and disease, difficulty in breathing, and premature death.

Volatile Organic Compounds

VOCs (or ROGs) are a group of chemicals that react with NO_x and hydrocarbons in the presence of heat and sunlight to form O_3. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include CH_4 or other compounds determined by the EPA to have negligible photochemical reactivity.

Air Quality Designations

Three air quality designations can be given to an area for a particular pollutant:

- Nonattainment: This designation applies when air quality standards have not been consistently achieved.
- Attainment: This designation applies when air quality standards have been achieved.
- Unclassified: This designation applies when insufficient monitoring data exist to determine either a nonattainment or attainment designation.

The current CAAQS and NAAQS attainment statuses for areas managed by the MBUAPCD are provided in Table 3.3-2: Attainment Status for the North Central Coast Air Basin. The project area is currently designated as a nonattainment area under the CAAQS for O_3 and PM_{10}.

Toxic Air Contaminants

TACs are the listed toxic pollutants as established by OEHHA. Under AB1807, the CARB is required to use certain criteria in prioritizing, identifying, and controlling air toxics. In selecting substances for review, the CARB must consider pollutants that may pose a threat to human health or cause or contribute to serious illnesses or death. For many TACs, no threshold level exists below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and for which both the state and federal governments have set ambient air quality standards.

Table 3.3-2: Attainment Status for the North Central Coast Air Basin

Pollutant	State Standards	National Standards
O_3	Nonattainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Monterey County – Attainment Santa Cruz and San Benito Counties – Nonattainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified
Lead	Attainment	Unclassified/Attainment

Source: CARB, 2011e

As previously discussed, PM emissions generated by diesel combustion, or DPM, are of particular concern in California. In 1998, the California EPA OEHHA completed a 10-year comprehensive human health assessment of diesel exhaust. The results of this assessment formed the basis for the CARB to formally identify DPM as a TAC that poses a threat to human health. Because no established ambient air quality standards exist for TACs, they are managed on a case-by-case basis, depending on the quantity and type of emissions and the proximity of potential receptors. DPM emissions result from a wide variety of sources, including on- and off-road vehicles and stationary and portable internal combustion engines. In California, diesel internal combustion engines were estimated to generate 28,000 tons of PM emissions in 2000.

Table 3.3-3: Estimated Ambient Exposure to Diesel Particulate Matter in California presents estimated outdoor ambient DPM exposure and CARB's assessment of the associated potential inhalation cancer risks in a population of 1 million over a 70-year lifetime.

Table 3.3-3: Estimated Ambient Exposure to Diesel Particulate Matter in California

Year	Ambient Exposure Concentration ($\mu g/m^3$)	Potential Inhalation Risk (excess cancers per million)
2000	1.8	540
2010	1.5	450
2020	1.2	360

Source: CARB, 2011c
Note: $\mu g/m^3$ = micrograms per cubic meter

Greenhouse Gas Emissions Inventory

GHG emissions from non-stationary sources are not currently regulated by the MBUAPCD. For potential regulatory action, GHGs are generally defined as: CO_2, N_2O, CH_4, hydrofluorocarbons, perfluorocarbons, and SF_6. GHG emissions are generally expressed in units of CO_2E. Concentrations of the gases are converted into CO_2E according to their global warming potential (CO_2 = 1). The Santa Cruz County 2004 Mobile Source GHG Inventory Report estimated the mobile source emissions in Santa Cruz County to be approximately 1.2 million $MTCO_2E$ in 2004. In 2008, California's statewide emissions were approximately 477.7 million $MTCO_2E$.

Local

Ambient Air Quality

The most recently available data on air quality concentrations for O_3, PM_{10}, and $PM_{2.5}$ at the two monitoring sites nearest[2] to the project area that are currently in operation are summarized in Table 3.3-4: Recent Air Quality Concentrations. The most recently available data on the number of exceedances of applicable air quality standards for these same criteria pollutants at these same locations are summarized in Table 3.3-5: Frequency of Air Quality Standard Exceedances. As reflected in Table 3.3-5: Frequency of Air Quality Standard Exceedances, between 2006 and 2009, the air quality nearest the project area, as recorded at the Santa Cruz monitoring site, did not violate any of the NAAQS or CAAQS for O_3, PM_{10}, or $PM_{2.5}$.

Sensitive Receptors

Some exposed population groups, including children, the elderly, and the ill, can be especially vulnerable to airborne chemicals and irritants and are termed "sensitive receptors." Additionally, due to sustained exposure durations, all persons located within residential areas are considered to be sensitive receptors.

[2] The Santa Cruz Monitoring Station is located approximately 7 miles west of the project area and the Davenport Monitoring Station is located approximately 18 miles west of the project area.

Table 3.3-4: Recent Air Quality Concentrations

Monitoring Site	Year	O_3, National Max 8-hour (parts per million)	PM_{10}, National Max 24-hour ($\mu g/m^3$)	$PM_{2.5}$, National Max 24-hour ($\mu g/m^3$)
Santa Cruz	2009	0.061	35.0	24.5
	2008	0.066	44.0	14.9
	2007	0.066	32.0	18.3
	2006	0.057	37.0	12.6
Davenport	2009	0.066	106.0	– –
	2008	0.067	76.0	– –
	2007	0.057	49.0	– –
	2006	0.056	63.0	– –

Source: CARB, 2011c
Note: $\mu g/m^3$ = micrograms per cubic meter, "– –"= insufficient or unavailable data

Table 3.3-5: Frequency of Air Quality Standard Exceedances

Monitoring Site	Year	Days in Exceedance of Standard				
		State 1-Hour O_3	National 1-Hour O_3	State 24-Hour PM_{10}	National 24-Hour PM_{10}	National 24-Hour $PM_{2.5}$
Santa Cruz	2009	0	0	0	0	0
	2008	0	0	0	0	0
	2007	0	0	0	0	0
	2006	0	0	0	0	0
Davenport	2009	0	0	– –	0	– –
	2008	0	0	– –	0	– –
	2007	0	0	6.0	0	– –
	2006	0	0	18.2	0	– –

Source: CARB, 2011c
Notes: "– –" = insufficient or unavailable data. Days over PM_{10} CAAQS are based on monitoring every sixth day. The national 1-hour O_3 standard was revoked in 2005 and is no longer in effect.

The project area is a mix of rural residential development, undeveloped natural habitats, and agricultural areas. Approximately 557 residences are located within 500 feet of the project. The majority of these residences (approximately 302) are located within the first 2 miles of the project alignment. The nearest schools to the project include Corralitos Union School and Bradley Elementary School, which are located approximately 675 feet south of the Northern Alignment near the intersection of Corralitos Road and Skylark Lane; and Aptos High School, which is approximately 0.25 mile southeast of Rob Roy Substation.

The Corralitos Cultural Center, an art gallery and performing arts venue, is located 0.4 mile northeast of the nearest pole, and the Central Coast Surgery center is located 1.2 miles southwest of Green Valley Substation. The closest parks to the project are the Pinto Lake County Park, which is spanned by the Northern Alignment; Mesa Village Park, located approximately 0.1 mile north of the project in Watsonville; Scott County Park, located approximately 0.8 mile southwest of the nearest pole in Watsonville; and Polo Grounds County Park, located approximately 0.8 mile west of Rob Roy Substation in Aptos. Potential project-related impacts to residences, schools, and parks are further discussed in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources, as well as in Section 3.10 Population and Housing, Public Services, and Utilities.

3.3.4 Potential Impacts and Applicant-Proposed Measures

3.3.4.1 Significance Criteria

MBUAPCD Thresholds of Significance

To determine whether a significant impact would occur during construction or O&M, the MBUAPCD recommends quantifying construction and O&M emissions and comparing them to significance thresholds (pounds per day) found in its regulations, as shown in Table 3.3-6: MBUAPCD Thresholds of Significance for Criteria Air Pollutants. If emissions during project construction will exceed the applicable thresholds, construction activities will have the potential to violate air quality standards or contribute substantially to existing violations.

Table 3.3-6: MBUAPCD Thresholds of Significance for Criteria Air Pollutants

Pollutant	Construction (pounds per day, average daily emissions)	Operation (pounds per day, average daily emissions)
VOC	None specified	137
NO_x	None specified	137
PM_{10}	82 or 2.2 acres per day of earthmoving activities (grading, excavation)	82
$PM_{2.5}$	None specified	None specified
CO	None specified	550 (direct)

Source: MBUAPCD, 2011b

Construction

The CEQA Air Quality Guidelines prepared by the MBUAPCD designate the following as criteria for determining significant construction impacts:

- Activities that directly generate 82 pounds per day or more of PM_{10}
- Construction activities that involve 2.2 acres per day or more of earthmoving activities, such as grading and excavation
- Construction equipment that emits precursors of O_3 that will have a significant impact on the attainment and maintenance of the O_3 CAAQS or NAAQS
- Projects that may cause or substantially contribute to the violation of the CAAQS or NAAQS or that could emit TACs

Operation and Maintenance

Table 3.3-6: MBUAPCD Thresholds of Significance for Criteria Air Pollutants lists the thresholds of operational significance for projects within the MBUAPCD. A project will be considered significant if its O&M emissions exceed any of these thresholds.

California Environmental Quality Act Guidelines

Appendix G of the CEQA Guidelines determines project impacts to be significant if they would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as nonattainment under an applicable federal or state ambient air quality standard
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Greenhouse Gas Significance Thresholds

California Governor's Office of Planning and Research

The Governor's Office of Planning and Research (OPR) is the state-wide comprehensive planning agency responsible for making policy recommendations and coordinating land use planning efforts. The OPR also coordinates the state-level review of environmental documents

pursuant to CEQA. Currently, the OPR's stance on GHG significance thresholds has been to allow each lead agency to determine its own level of significance.

On October 24, 2008, the CARB released its interim CEQA significance thresholds for GHGs, stating that a zero threshold is not required. The guidance divides projects analyzed under CEQA into two categories—industrial and residential/commercial—and provides significance criteria for each. The project qualifies as an industrial project; thus, impacts will be considered less than significant if the following two conditions are met:

1. The project meets minimum performance standards or includes equivalent mitigation measures:

    - Construction – Meets an interim CARB performance standard for construction-related emissions

    - Transportation – Meets an interim CARB performance standard for transportation-related emissions

    No interim CARB performance standards have yet been specified.

2. The project with mitigation will emit no more than approximately 7,000 metric tons per year of CO_2E per year from operation of non-transportation-related GHG sources, which include:

    - Combustion-related components/equipment
    - Process losses
    - Purchased electricity

MBUAPCD

The MBUAPCD has included GHG significance thresholds at the project level with the revision of Rule 218 in 2010. For stationary sources,[3] the MBUAPCD's threshold is 100,000 tons per year of CO_2E. The MBUAPCD has not adopted GHG significance thresholds for emissions by non-stationary sources.

3.3.4.2 Applicant-Proposed Measures

To reduce impacts from PM_{10} due to construction activities, PG&E will implement applicant-proposed measures (APMs) APM AIR-01 and APM AIR-02. Although potential impacts due to NO_x and GHG emissions from construction activities are anticipated to be less than significant, PG&E will implement APM AIR-03 and APM AIR-04 to further reduce these emissions. The APMs have been developed by reviewing the applicable guidance from the MBUAPCD and the CPUC PEA Checklist for Transmission Line and Substation Projects, and the results from the URBEMIS model simulations.

[3] Stationary-source projects include land uses that would accommodate equipment and processes that emit GHG emissions and would require a MBUAPCD permit to operate.

APM AIR-01. Fugitive Dust Controls.

All active construction areas, unpaved access roads, parking areas, and staging areas will be watered or stabilized with non-toxic soil stabilizers at least two times per day or as needed to control fugitive dust.

APM AIR-02. Traffic Speed Limits.

Traffic speeds on unpaved roads and rights-of-way will be limited to 15 miles per hour.

APM AIR-03. Vehicle Idling Time Limits.

Vehicle idling time will be limited to a maximum of 5 minutes for vehicles and construction equipment, except where idling is required for the equipment to perform its task.

APM AIR-04. Carpooling.

If suitable park-and-ride facilities are available in the project vicinity, construction workers will be encouraged to carpool to the job site, to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.

Voluntary Company-Wide Actions to Reduce GHG Emissions

In addition to the project-specific APMs, PG&E has implemented the following voluntary company-wide actions to further reduce GHG emissions:

- PG&E is an active member of the SF_6 Emission Reduction partnership for Electrical Power Systems, a voluntary program between the EPA and electric power companies that focuses on reducing emissions of SF_6 from transmission and distribution operations. Since 1998, PG&E has reduced the SF_6 leak rate by 89 percent and absolute SF_6 emissions by 83 percent.

- PG&E supports the Natural Gas STAR, a program promoting the reduction of methane from natural gas pipeline operations. Since 1998, PG&E has avoided the release of thousands of tons of methane.

- In June 2007, PG&E launched the ClimateSmart™ program, a voluntary GHG emissions reduction program that allowed its customers to balance out the GHG emissions produced by the energy they use, making their energy use "climate neutral" through a tax-deductible donation. For ClimateSmart™ customers, PG&E calculated the amount needed to fund sufficient GHG emissions reduction projects in California to make their energy use "climate neutral." The program resulted in more than 1.36 million metric tons of GHG emission reductions, the equivalent of taking 226,000 cars off the road for a year. The program, which ended on December 31, 2011, served as a bridge until final approval of the state's AB-32 Cap and Trade regulation that now provides a regulatory framework for the implementation of GHG emission reduction projects.

- CARB has started adopting AB-32 Early Action Measures to reduce GHG emissions. PG&E will implement the appropriate Early Action Measures as they become effective.

3.3.4.3 Question 3.3a – Would the project conflict with or obstruct implementation of the applicable air quality plan?

Construction – Less-than-Significant Impact

As previously discussed in Section 3.3.2 Methodology, the maximum daily emissions for a range of pollutants for off-road and on-road vehicle use and helicopter use were calculated using URBEMIS, EMFAC, and EDMS. APM AIR-01 and APM AIR-02 were factored into the calculations in order to reduce impacts from PM_{10}, and the maximum composite emission rates generated are presented in Table 3.3-7: Mitigated Construction Emissions.

Table 3.3-7: Mitigated Construction Emissions

Category	Simulated Peak Emission Rate (pounds per day)					
	$PM_{2.5}$	PM_{10}	NO_x	SO_x	CO	VOCs
Emission Source						
Off-Road Vehicles	23.47	24.89	571.25	0.01	250.95	49.86
On-Road Vehicles	1.10	1.23	31.23	0.07	8.97	2.27
Helicopters	12.39	13.77	33.02	8.23	33.02	2.55
Fugitive Dust	4.32	30.80	- -	- -	- -	- -
Total	**41.28**	**70.68**	**635.51**	**8.31**	**292.95**	**54.68**
Applicable Threshold	- -	82	- -	- -	- -	- -
Threshold Exceeded?	**NA**	**No**	**NA**	**NA**	**NA**	**NA**

PM and NO_x are generally the primary air pollutants resulting from construction activities. The simulated PM emissions are the composite of two types of sources—fugitive dust and exhaust emissions. Typical fugitive dust sources include earth-moving activities (such as grading and improvement of access roads) and vehicle travel across unpaved roads. Exhaust emissions result from the combustion of fossil fuels in both off-road construction equipment and on-road vehicles. The results of the URBEMIS simulations included in Attachment 3.3-A: Project Emissions Calculation Methodology indicate that the total peak PM_{10} emissions with implementation of APM AIR-01 and APM AIR-02 will be approximately 70.7 pounds per day—composed of approximately 30.8 pounds per day from fugitive dust emissions and approximately 39.9 pounds per day from exhaust. This emission rate assumes a worst-case scenario where grading activities, all on-road traffic, and helicopter use will coincide with the peak off-road construction equipment use. This worst-case PM emission rate, with implementation of APM AIR-01 and APM AIR-02, will be below the MBUAPCD significance threshold of 82 pounds per day. In addition, grading activities will be generally limited to approximately 1 acre or less per day, which is below the MBUAPCD threshold of potential significance of 2.2 acres of grading or excavation per day. Calculation of these emission rates have taken into account

implementation of APM AIR-01 and APM AIR-02, which require the daily watering of unpaved access roads and temporary work areas and limit vehicle speeds along unpaved access roads to 15 mph. These APMs are consistent with the proposed district control measures included in the MBUAPCD's 2005 Particulate Matter Plan. With implementation of APM AIR-01 and APM AIR-02, the PM emissions due to construction will be consistent with this plan, and thus PM emissions impacts will be less than significant.

The maximum daily emissions of NO_x and VOC are anticipated to be approximately 635.5 and 54.7 pounds per day, respectively. As described in the MBUAPCD CEQA Guidelines, calculation of NO_x and VOC emissions from typical construction equipment is not necessary, as temporary emissions of these O_3 precursors have been taken into account in both the state- and federally required air plans prepared for the NCCAB. For instance, the 2007 Federal Maintenance Plan and 2004 Air Quality Management Plan, described previously in Section 3.3.3.1 Regulatory Background, present the MBUAPCD's plans regarding attainment status for federal and state O_3 standards, while taking into account O_3 precursors emitted by temporary construction activities. As a result, these emissions will not conflict with any applicable air quality plans, and there will be no impact as a result of NO_x and VOC emissions.

Operation and Maintenance – No Impact

PG&E currently owns and operates existing power lines within the alignment for the new 115 kV circuit that will be constructed as part of the project. As a result, the existing O&M activities will not change as a result of the project. The modification of Rob Roy Substation will also not increase O&M efforts for the substation. Fugitive emissions of SF_6 will result from operation of the new equipment installed at Rob Roy Substation. PG&E will install four new circuit breakers, each containing approximately 62 pounds of SF_6. The circuit breakers have been designed to operate with a guaranteed annual leak rate of 0.5 percent or less. This corresponds with a maximum of 1.24 pounds of SF_6 being emitted from all four circuit breakers annually under normal operating conditions. As a result, the new equipment at Rob Roy Substation will contribute to an annual increase of approximately 13.44 $MTCO_2E$ over current conditions. These emissions are well below the CARB's annual operational threshold of 7,000 $MTCO_2E$ for non-transportation sources and the MBUAPCD's annual threshold of 100,000 tons per year of CO_2E for stationary sources. As a result, operation and maintenance of the project will not conflict with any applicable air quality plans, and no impact will occur.

3.3.4.4 Question 3.3b – Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction – Less-than-Significant Impact

Criteria Air Pollutants

The project area is currently designated as a nonattainment area for O_3 and PM_{10}. However, the project will not trigger any exceedances of the CAAQS or the NAAQSs, or contribute substantially to any existing or project-related air quality violations for O_3 and PM_{10}. With implementation of APM AIR-01 and APM AIR-02, the project will also be in compliance with the significance limit of 82 pounds per day of PM_{10} set by the MBUAPCD for construction projects. Due to the short-term nature of these emissions and their compliance with all applicable significance thresholds, impacts from O_3 and PM_{10} will be less than significant. 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.

While the NO_x emissions from the project will comply with the MBUAPCD CEQA Guidelines, APM AIR-03 and APM AIR-04 have been proposed to further reduce these emissions, as suggested by the CPUC PEA Checklist for Transmission Line and Substation Projects. These measures will limit construction vehicle idling time to 5 minutes, where appropriate, and will encourage carpooling by construction personnel.

Greenhouse Gas Emissions

GHG emissions will occur during construction as a result of the fuel burning required to operate the on-site construction equipment and mobilize work crews to and from the project site. Table 3.3-8: Unmitigated GHG Emissions from Construction presents the total estimated unmitigated CO_2, CH_4, N_2O, and CO_2E emissions from construction. Table 3.3-9: Mitigated GHG Emissions from Construction presents the estimated GHG emission from construction with the implementation of APM AIR-03 and APM AIR-04. The values in Table 3.3-9: Mitigated GHG Emissions from Construction assume a 10-percent reduction in off-road vehicle emissions due to APM AIR-03 and a 5-percent reduction in on-road emissions due to APM AIR-04. Table 3.3-10: CO_2E GHG Emissions from Construction presents the total mitigated CO_2E emissions from construction.

Table 3.3-8: Unmitigated GHG Emissions from Construction

Equipment Type	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)
Off-road	2,789.90	0.160	0.072
On-road	116.50	0.003	0.003
Helicopter	136.60	0.004	0.004
Total	**3,043.00**	**0.167**	**0.079**

Table 3.3-9: Mitigated GHG Emissions from Construction

Equipment Type	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)
Off-road	2,536.27	0.145	0.065
On-road	110.95	0.003	0.003
Helicopter	136.6	0.004	0.004
Total	**2,783.81**	**0.152**	**0.073**

Table 3.3-10: CO_2E GHG Emissions from Construction

Equipment Type	CO_2 Emissions (metric tons)	CH_4 Emissions (CO_2E metric tons)	N_2O Emissions (CO_2E metric tons)	CO_2E Emissions (metric tons)
Off-road	2,536.27	3.04	20.14	2,559.45
On-road	110.95	0.06	1.13	112.14
Helicopter	136.60	0.08	1.37	138.05
Total	**2,783.81**	**3.19**	**22.64**	**2,809.64**

As described previously, the CARB and MBUAPCD have not developed quantitative GHG emission thresholds for construction. The project's construction emissions, when totaled across the entire 8-month construction schedule, will be approximately 2,809.6 $MTCO_2E$. To put the project's construction GHG emissions into context, Santa Cruz County's emissions of GHGs from mobile sources were estimated to be approximately 1.2 million $MTCO_2E$ in 2004. Because the project's construction GHG emissions will be less than 0.1 percent of the projected annual emissions in Santa Cruz County, they will be less than significant.

Although GHG emissions without implementation of the APMs will be below relevant significance thresholds, APM AIR-03 and APM AIR-04 have been proposed to further reduce GHG emissions, as suggested by the CPUC PEA Checklist for Transmission Line and Substation Projects.

Operation and Maintenance – Less-than-Significant Impact

Current O&M activities associated with existing project components do not violate any air quality standards associated with the emission of criteria air pollutants. As previously discussed, O&M of the project is not expected to change after construction. No additional trips beyond those currently required for O&M will be necessary. Therefore, no additional air quality standards associated with criteria air pollutants will be violated.

Similar to the construction phase of the project, GHG emissions during O&M will result from fuel burning during vehicle and equipment operation. As described previously, the O&M activities at Rob Roy Substation would not change from the existing activities. As a result, there would be no increase in GHG emissions from the operation of heavy equipment or vehicles used to maintain the substation.

Fugitive emissions of SF_6 will result from operation of the new equipment installed at Rob Roy Substation. As described previously, the new equipment at Rob Roy Substation will contribute to an annual increase of approximately 13.44 $MTCO_2E$ over current conditions. These emissions are well below the CARB's annual operational threshold of 7,000 $MTCO_2E$ for non-transportation sources and the MBUAPCD's annual threshold of 100,000 tons per year of CO_2E for stationary sources. As a result, impacts will be less than significant.

3.3.4.5 Question 3.3c – Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Construction – Less-than-Significant Impact

As shown in Table 3.3-7: Mitigated Construction Emissions, the construction of the project will lead to a temporary increase in criteria air pollutants. To reduce fugitive dust emissions, PG&E will implement APM AIR-01 and APM AIR-02, which include applying water to exposed areas and reducing vehicle speeds on unpaved areas. To reduce NO_x emissions, PG&E will implement APM AIR-03 and APM AIR-04, which include encouraging carpooling by construction crews and limiting equipment idling time. With implementation of these APMs, all criteria air pollutant emissions will be below the applicable MBUAPCD thresholds and impacts will be less than significant.

Operation and Maintenance – No Impact

Once operational, the project will not generate any criteria pollutants beyond those currently associated with maintenance and repair of the project. Because O&M activities will not change after construction, no impact will occur.

3.3.4.6 Question 3.3d – Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction – Less-than-Significant Impact

Approximately 557 housing units are located within 500 feet of the project alignment. In some locations, residential properties are built adjacent to the proposed alignment. The nearest schools to the project include Corralitos Union School and Bradley Elementary School, which are located approximately 675 feet south of the Northern Alignment near the intersection of Corralitos Road and Skylark Lane. Due to their proximity to the project, sensitive receptors in the project vicinity will be exposed to increases in criteria air pollutants due to fugitive dust and increased equipment use in the area.

Residences located near the two landing zones may experience increased dust during helicopter take-off and landing activities. However, helicopter activities will be infrequent (where limited access or local terrain conditions prohibit the work from being conducted by ground-based crews and equipment, or during conductor installation and removal activities) and will only occur for a period of approximately 30 days during the 8 months of construction. Helicopter landings will generate dust; however, landings will be brief and dust effects will be localized. The nearest residences to each landing zone are located at distances of approximately 400 and 500 feet, respectively. In addition, the implementation of APM AIR-01 will control fugitive dust in the area through watering or use of a soil stabilizer. As a result, impacts to the residences due to fugitive dust will be less than significant.

Due to the linear nature of the project, construction activities will be spread across the approximately 8.8-mile alignment, lasting only a few days at each pole. Implementation of APM AIR-01 through APM AIR-04, which include controlling fugitive dust and reducing idling

time, will reduce exposure to sensitive receptors. With implementation of these APMs, impacts to sensitive receptors will be less than significant.

Operation and Maintenance – No Impact

The project's O&M activities may require the periodic use of a helicopter for power line inspection, which PG&E already implements for the existing facilities in the area. PG&E currently performs aerial line inspections once per year, and does not anticipate an increase in the number of these trips from those currently required to operate and maintain the existing facilities. In addition, the number of vehicular inspections required to operate and maintain existing facilities is not anticipated to change. Because O&M activities will not change after construction, no new impacts to sensitive receptors in the project will occur.

3.3.4.7 Question 3.3e – Would the project create objectionable odors affecting a substantial number of people?

Construction – Less-than-Significant Impact

Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. No significant sources of these pollutants will exist during construction. An additional potential source of project-related odor is diesel engine emissions. As previously described, there are residences located adjacent to the project alignment. However, because there will be few sources of odor and construction will be short term, lasting a few days at each pole, impacts due to odor will be less than significant.

Operation and Maintenance – No Impact

As described previously, O&M activities in the project area will not differ following construction. As a result, there will be no perceptible changes in odor emissions during O&M activities, and there will be no impact.

3.3.4.8 Question 3.3f – Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction – Less-than-Significant Impact

As described previously in Question 3.3b, the MBUAPCD has established GHG significance thresholds. For stationary sources, the MBUAPCD threshold is 100,000 tons per year of CO_2E. The MBUAPCD has not adopted GHG significance thresholds for emissions by non-stationary sources. The project will generate approximately 2,809.6 $MTCO_2E$ when totaled across the 8-month-long construction period. The amount of $MTCO_2E$ generated will remain below the CARB's annual operational threshold of 7,000 $MTCO_2E$ for non-transportation sources and below the MBUAPCD's annual threshold of 100,000 tons per year of CO_2E for stationary sources. Although GHG emissions without mitigation will be below relevant significance thresholds, APM AIR-03 and APM AIR-04 have been proposed to further maximize GHG reductions, as suggested by the CPUC PEA Checklist for Transmission Line and Substation Projects. APM AIR-03 and APM AIR-04 will include limiting idling time for construction vehicles to 5 minutes when appropriate and encouraging carpooling by construction personnel.

Due to the short-term nature of the emissions and the fact that no significance thresholds will be exceeded, the GHG emissions related to construction will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Modification of Rob Roy Substation will involve the installation of four new circuit breakers, each containing approximately 62 pounds of SF_6. As described previously in Question 3.3a, a maximum of 1.24 pounds of SF_6 will be emitted from all four circuit breakers annually under normal operating conditions. This leak rate corresponds with an approximately 13.44 $MTCO_2E$ increase over current SF_6 emissions at the substation. As discussed under Question 3.3a, these emissions are well below the CARB's annual operational threshold of 7,000 $MTCO_2E$ for non-transportation sources and the MBUAPCD's annual threshold of 100,000 tons per year of CO_2E for stationary sources. Once operational, the project will not create any other GHG emissions beyond those currently associated with maintenance and repair of the project. As a result, impacts will be less than significant.

3.3.4.9 Question 3.3g – Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction – No Impact

As previously described, the project's simulated construction and operational emissions are below all applicable GHG significance thresholds. The project will not conflict with any state or local GHG plans or goals. Therefore, there will be no impact.

Operation and Maintenance – No Impact

The installation of new circuit breakers at Rob Roy Substation will create an increase in GHG emissions; however, these increases will be below the applicable CARB and MBUAPCD thresholds. Once operational, the project will not create any other GHG emissions beyond those currently associated with maintenance and repair of the project. As a result, there will be no impact.

3.3.5 References

CARB. Ambient Air Quality Standards. Online. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Site visited January 28, 2011a.

CARB. Area Designations Maps State and National. Online. http://www.arb.ca.gov/desig/adm/adm.htm. Site visited January 31, 2011b.

CARB. iADAM Air Quality Data Statistics. Online. http://www.arb.ca.gov/adam/. Site visited January 31, 2011c.

CARB. Greenhouse Gas Emissions Inventory and Mandatory Reporting. Online. http://www.arb.ca.gov/cc/ccei.htm. Site visited January 20, 2012.

CARB. Monterey Bay Unified Air Pollution Control District Regulation II Permits. Online. http://www.arb.ca.gov/DRDB/MBU/CURHTML/R218.PDF. Site visited January 31, 2011d.

CARB. North Central Coast Air Basin (Monterey Bay Unified APCD). Online. http://www.arb.ca.gov/pm/pmmeasures/pmch05/ncc05.pdf. Site visited January 28, 2011e.

CCAR. General Reporting Protocol, Version 3.1. Online. http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html. Site visited September 23, 2011.

MBUAPCD. Air Quality Planning. Online. http://www.mbuapcd.org/. Site visited January 28, 2011a.

MBUAPCD. CEQA Air Quality Guidelines 2008. Online. http://www.mbuapcd.org/mbuapcd/pdf/mbuapcd/pdf/CEQA_full.pdf. Site visited January 28, 2011b.

URBEMIS. URBEMIS Version 9.2.4. Software. Program used September 7, 2011.

ATTACHMENT 3.3-A: PROJECT EMISSIONS CALCULATION METHODOLOGY

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: S:\Projects\Current\PG&E Santa Cruz\PEA\DRAFT\3 Env Impact\3-3 Air Quality\Air Quality Calculations\URBEMIS\Santa Cruz Air Quality Calcs (09-26-11).urb924

Project Name: Santa Cruz 115 kV Reinforcement Project

Project Location: Santa Cruz County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	49.86	571.25	250.95	0.01	20.03	24.89	43.72	4.19	23.47	26.54	69,794.79
2013 TOTALS (lbs/day mitigated)	49.86	571.25	250.95	0.01	11.34	24.89	35.03	2.37	23.47	24.72	69,794.79

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)							

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

10/18/2011 1:50:15 PM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 4/8/2013-4/13/2013 Active Days: 6	0.67	7.29	5.24	0.00	0.00	0.47	0.47	0.00	0.45	0.45	769.89
Building 04/08/2013-04/21/2013	0.39	4.36	2.96	0.00	0.00	0.28	0.28	0.00	0.27	0.27	446.13
Building Off Road Diesel	0.39	4.36	2.96	0.00	0.00	0.28	0.28	0.00	0.27	0.27	446.13
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2013-05/14/2013	0.27	2.93	2.29	0.00	0.00	0.19	0.19	0.00	0.18	0.18	323.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.26	2.90	1.97	0.00	0.00	0.19	0.19	0.00	0.18	0.18	297.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.01	0.03	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.34

10/18/2011 1:50:15 PM

Time Slice 4/15/2013-4/20/2013 Active Days: 6	2.34	26.51	11.79	0.00	11.32	1.11	12.43	2.36	1.05	3.42	3,355.44
Building 04/08/2013-04/21/2013	0.39	4.36	2.96	0.00	0.00	0.28	0.28	0.00	0.27	0.27	446.13
Building Off Road Diesel	0.39	4.36	2.96	0.00	0.00	0.28	0.28	0.00	0.27	0.27	446.13
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2013-05/14/2013	0.27	2.93	2.29	0.00	0.00	0.19	0.19	0.00	0.18	0.18	323.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.26	2.90	1.97	0.00	0.00	0.19	0.19	0.00	0.18	0.18	297.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.01	0.03	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.34
Mass Grading 04/15/2013-04/21/2013	1.68	19.22	6.54	0.00	11.32	0.64	11.96	2.36	0.60	2.97	2,585.55
Mass Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Mass Grading Off Road Diesel	1.63	19.12	5.27	0.00	0.00	0.64	0.64	0.00	0.60	0.60	2,480.19
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.05	0.10	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.01	105.36

Time Slice 4/22/2013-4/30/2013 Active Days: 8	3.35	32.16	12.77	0.00	0.01	1.35	1.35	0.00	1.28	1.28	3,957.97
Building 04/22/2013-05/21/2013	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Off Road Diesel	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2013-05/14/2013	0.27	2.93	2.29	0.00	0.00	0.19	0.19	0.00	0.18	0.18	323.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.26	2.90	1.97	0.00	0.00	0.19	0.19	0.00	0.18	0.18	297.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.01	0.03	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.34
Fine Grading 04/22/2013-04/30/2013	0.39	4.25	3.80	0.00	0.00	0.26	0.26	0.00	0.25	0.25	530.26
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.35	4.17	2.85	0.00	0.00	0.26	0.26	0.00	0.24	0.24	451.24
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	0.95	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.02

10/18/2011 1:50:15 PM

Time Slice 5/1/2013-5/14/2013 Active Days: 12	5.86	62.39	30.97	0.00	11.09	2.81	13.90	2.32	2.68	5.00	7,431.30
Building 04/22/2013-05/21/2013	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Off Road Diesel	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/01/2013-05/31/2013	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Off Road Diesel	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2013-05/14/2013	0.27	2.93	2.29	0.00	0.00	0.19	0.19	0.00	0.18	0.18	323.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.26	2.90	1.97	0.00	0.00	0.19	0.19	0.00	0.18	0.18	297.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.01	0.03	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.34
Fine Grading 05/01/2013-05/31/2013	2.05	24.60	15.36	0.00	11.09	1.11	12.20	2.32	1.05	3.37	2,979.51
Fine Grading Dust	0.00	0.00	0.00	0.00	11.08	0.00	11.08	2.31	0.00	2.31	0.00
Fine Grading Off Road Diesel	1.97	24.44	13.45	0.00	0.00	1.10	1.10	0.00	1.05	1.05	2,821.47
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.08	0.16	1.91	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.04
Time Slice 5/15/2013-5/21/2013 Active Days: 6	10.55	122.27	60.69	0.00	11.09	5.57	16.67	2.32	5.29	7.61	14,752.67

Building 04/22/2013-05/21/2013	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Off Road Diesel	2.68	24.99	6.68	0.00	0.00	0.90	0.90	0.00	0.85	0.85	3,103.96
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/01/2013-05/31/2013	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Off Road Diesel	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/15/2013-05/31/2013	2.03	26.40	13.22	0.00	0.00	1.20	1.20	0.00	1.14	1.14	3,235.43
Building Off Road Diesel	2.03	26.40	13.22	0.00	0.00	1.20	1.20	0.00	1.14	1.14	3,235.43
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 05/01/2013-05/31/2013	2.05	24.60	15.36	0.00	11.09	1.11	12.20	2.32	1.05	3.37	2,979.51
Fine Grading Dust	0.00	0.00	0.00	0.00	11.08	0.00	11.08	2.31	0.00	2.31	0.00
Fine Grading Off Road Diesel	1.97	24.44	13.45	0.00	0.00	1.10	1.10	0.00	1.05	1.05	2,821.47
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.08	0.16	1.91	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.04

Time Slice 5/22/2013-5/31/2013 Active Days: 9	8.84	110.54	59.97	0.00	11.09	5.21	16.30	2.32	4.94	7.26	13,192.14
Building 05/01/2013-05/31/2013	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Off Road Diesel	0.85	9.87	6.65	0.00	0.00	0.62	0.62	0.00	0.59	0.59	1,024.07
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/15/2013-05/31/2013	2.03	26.40	13.22	0.00	0.00	1.20	1.20	0.00	1.14	1.14	3,235.43
Building Off Road Diesel	2.03	26.40	13.22	0.00	0.00	1.20	1.20	0.00	1.14	1.14	3,235.43
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 05/01/2013-05/31/2013	2.05	24.60	15.36	0.00	11.09	1.11	12.20	2.32	1.05	3.37	2,979.51
Fine Grading Dust	0.00	0.00	0.00	0.00	11.08	0.00	11.08	2.31	0.00	2.31	0.00
Fine Grading Off Road Diesel	1.97	24.44	13.45	0.00	0.00	1.10	1.10	0.00	1.05	1.05	2,821.47
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.08	0.16	1.91	0.00	0.01	0.01	0.01	0.00	0.00	0.01	158.04
Time Slice 6/1/2013-6/7/2013 Active Days: 6	21.92	243.13	128.21	**0.01**	11.34	11.89	23.23	2.37	11.21	13.59	29,891.00

Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-06/14/2013	2.71	29.82	12.96	0.00	0.00	1.35	1.35	0.00	1.27	1.27	3,721.99
Building Off Road Diesel	2.71	29.82	12.96	0.00	0.00	1.35	1.35	0.00	1.27	1.27	3,721.99
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15

Fine Grading 06/01/2013-06/30/2013	1.07	11.91	8.65	0.00	11.31	0.76	12.07	2.36	0.72	3.09	1,273.85
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.05	11.85	8.02	0.00	0.00	0.76	0.76	0.00	0.72	0.72	1,221.17
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.68
Time Slice 6/8/2013-6/14/2013 Active Days: 6	26.03	297.34	146.92	**0.01**	11.34	13.85	25.19	2.37	13.06	15.43	36,578.89
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-06/14/2013	2.71	29.82	12.96	0.00	0.00	1.35	1.35	0.00	1.27	1.27	3,721.99
Building Off Road Diesel	2.71	29.82	12.96	0.00	0.00	1.35	1.35	0.00	1.27	1.27	3,721.99
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/08/2013-06/21/2013	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Off Road Diesel	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15
Fine Grading 06/01/2013-06/30/2013	1.07	11.91	8.65	0.00	11.31	0.76	12.07	2.36	0.72	3.09	1,273.85
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.05	11.85	8.02	0.00	0.00	0.76	0.76	0.00	0.72	0.72	1,221.17
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.68
Time Slice 6/15/2013-6/21/2013 Active Days: 6	35.32	404.79	202.31	**0.01**	11.34	19.15	30.49	2.37	18.05	20.43	49,075.83
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/08/2013-06/21/2013	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Off Road Diesel	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/15/2013-07/31/2013	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Off Road Diesel	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15
Fine Grading 06/01/2013-06/30/2013	1.07	11.91	8.65	0.00	11.31	0.76	12.07	2.36	0.72	3.09	1,273.85
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.05	11.85	8.02	0.00	0.00	0.76	0.76	0.00	0.72	0.72	1,221.17
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.68
Time Slice 6/22/2013-6/29/2013 Active Days: 7	46.82	528.94	240.90	**0.01**	11.34	23.69	35.03	2.37	22.35	24.72	64,380.75

Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/15/2013-07/31/2013	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Off Road Diesel	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15
Fine Grading 06/01/2013-06/30/2013	1.07	11.91	8.65	0.00	11.31	0.76	12.07	2.36	0.72	3.09	1,273.85
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.05	11.85	8.02	0.00	0.00	0.76	0.76	0.00	0.72	0.72	1,221.17
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.68
Time Slice 7/1/2013-7/20/2013 Active Days: 18	45.75	517.03	232.24	0.01	0.03	22.93	22.96	0.01	21.62	21.63	63,106.90
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/15/2013-07/31/2013	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Off Road Diesel	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15
Time Slice 7/22/2013-7/31/2013 Active Days: 9	**49.86**	**571.25**	**250.95**	0.01	0.03	**24.89**	24.92	0.01	**23.47**	23.48	**69,794.79**
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/15/2013-07/31/2013	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Off Road Diesel	12.01	137.27	68.34	0.00	0.00	6.64	6.64	0.00	6.26	6.26	16,218.93
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 07/21/2013-08/07/2013	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Off Road Diesel	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15
Time Slice 8/1/2013-8/7/2013 Active Days: 6	37.85	433.98	182.61	0.01	0.03	18.25	18.28	0.01	17.21	17.22	53,575.86

Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 07/21/2013-08/07/2013	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Off Road Diesel	4.11	54.21	18.71	0.00	0.00	1.96	1.96	0.00	1.85	1.85	6,687.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15

Time Slice 8/8/2013-8/14/2013 Active Days: 6	33.74	379.76	163.90	0.01	0.03	16.29	16.31	0.01	15.36	15.37	46,887.97
Building 05/15/2013-08/14/2013	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Off Road Diesel	2.94	36.41	18.78	0.00	0.00	1.75	1.75	0.00	1.65	1.65	4,409.71
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15

Time Slice 8/15/2013-9/14/2013 Active Days: 27	30.80	343.35	145.12	0.01	0.03	14.54	14.57	0.01	13.71	13.72	42,478.26
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Off Road Diesel	8.14	89.46	38.88	0.00	0.00	4.04	4.04	0.00	3.80	3.80	11,165.97
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	6.08	62.27	42.98	0.01	0.03	3.46	3.49	0.01	3.26	3.27	7,776.06
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	5.80	61.73	36.30	0.00	0.00	3.44	3.44	0.00	3.25	3.25	7,222.92
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.28	0.55	6.68	0.01	0.03	0.02	0.05	0.01	0.02	0.03	553.15

Time Slice 9/16/2013-9/30/2013 Active Days: 13	16.58	191.62	63.26	0.00	0.00	7.03	7.03	0.00	6.64	6.64	23,536.23
Building 05/22/2013-09/30/2013	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Off Road Diesel	0.97	13.26	5.96	0.00	0.00	0.53	0.53	0.00	0.50	0.50	1,543.42
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 10/1/2013-10/14/2013 Active Days: 12	15.75	180.28	58.57	0.00	0.00	6.61	6.61	0.00	6.24	6.24	22,200.10
Building 06/22/2013-10/14/2013	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Off Road Diesel	15.60	178.36	57.30	0.00	0.00	6.50	6.50	0.00	6.14	6.14	21,992.81
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 10/01/2013-11/30/2013	0.14	1.92	1.27	0.00	0.00	0.11	0.11	0.00	0.10	0.10	207.29
Building Off Road Diesel	0.14	1.92	1.27	0.00	0.00	0.11	0.11	0.00	0.10	0.10	207.29
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 10/15/2013-11/30/2013 Active Days: 41	0.14	1.92	1.27	0.00	0.00	0.11	0.11	0.00	0.10	0.10	207.29
Building 10/01/2013-11/30/2013	0.14	1.92	1.27	0.00	0.00	0.11	0.11	0.00	0.10	0.10	207.29
Building Off Road Diesel	0.14	1.92	1.27	0.00	0.00	0.11	0.11	0.00	0.10	0.10	207.29
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: S:\Projects\Current\PG&E Santa Cruz\PEA\DRAFT\3 Env Impact\3-3 Air Quality\Air Quality Calculations\URBEMIS\Santa Cruz Air Quality Calcs (09-26-11).urb924

Project Name: Santa Cruz 115 kV Reinforcement Project

Project Location: Santa Cruz County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	2.01	22.82	10.02	0.00	0.58	0.99	1.57	0.12	0.93	1.06	2,795.71
2013 TOTALS (tons/year mitigated)	2.01	22.82	10.02	0.00	0.33	0.99	1.32	0.07	0.93	1.00	2,795.71
Percent Reduction	0.00	0.00	0.00	0.00	43.34	0.00	15.94	43.25	0.00	4.94	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)							

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013	2.01	22.82	10.02	0.00	0.33	0.99	1.32	0.07	0.93	1.00	2,795.71

Building 04/08/2013-04/21/2013	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68
Building Off Road Diesel	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2013-05/14/2013	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.18
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Mass Grading 04/15/2013-04/21/2013	0.01	0.06	0.02	0.00	0.03	0.00	0.04	0.01	0.00	0.01	7.76
Mass Grading Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Mass Grading Off Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.44
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Building 04/22/2013-05/21/2013	0.03	0.32	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.35
Building Off Road Diesel	0.03	0.32	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.35
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/22/2013-04/30/2013	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32

Building 05/01/2013-05/31/2013	0.01	0.13	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.82
Building Off Road Diesel	0.01	0.13	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.82
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 05/01/2013-05/31/2013	0.03	0.33	0.21	0.00	0.15	0.01	0.16	0.03	0.01	0.05	40.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.03	0.33	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.09
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13
Building 05/15/2013-05/31/2013	0.02	0.20	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.27
Building Off Road Diesel	0.02	0.20	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.27
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/15/2013-08/14/2013	0.12	1.44	0.74	0.00	0.00	0.07	0.07	0.00	0.07	0.07	174.18
Building Off Road Diesel	0.12	1.44	0.74	0.00	0.00	0.07	0.07	0.00	0.07	0.07	174.18
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 05/22/2013-09/30/2013	0.06	0.75	0.34	0.00	0.00	0.03	0.03	0.00	0.03	0.03	87.20
Building Off Road Diesel	0.06	0.75	0.34	0.00	0.00	0.03	0.03	0.00	0.03	0.03	87.20
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/01/2013-06/14/2013	0.02	0.18	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.33
Building Off Road Diesel	0.02	0.18	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.33
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/01/2013-09/14/2013	0.37	4.07	1.77	0.00	0.00	0.18	0.18	0.00	0.17	0.17	508.05
Building Off Road Diesel	0.37	4.07	1.77	0.00	0.00	0.18	0.18	0.00	0.17	0.17	508.05
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition 06/01/2013-09/14/2013	0.28	2.83	1.96	0.00	0.00	0.16	0.16	0.00	0.15	0.15	353.81
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.26	2.81	1.65	0.00	0.00	0.16	0.16	0.00	0.15	0.15	328.64
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.17
Fine Grading 06/01/2013-06/30/2013	0.01	0.15	0.11	0.00	0.14	0.01	0.15	0.03	0.01	0.04	15.92
Fine Grading Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.01	0.15	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.26
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Building 06/08/2013-06/21/2013	0.02	0.33	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.13
Building Off Road Diesel	0.02	0.33	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.13
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 06/15/2013-07/31/2013	0.24	2.75	1.37	0.00	0.00	0.13	0.13	0.00	0.13	0.13	324.38
Building Off Road Diesel	0.24	2.75	1.37	0.00	0.00	0.13	0.13	0.00	0.13	0.13	324.38
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/22/2013-10/14/2013	0.76	8.74	2.81	0.00	0.00	0.32	0.32	0.00	0.30	0.30	1,077.65
Building Off Road Diesel	0.76	8.74	2.81	0.00	0.00	0.32	0.32	0.00	0.30	0.30	1,077.65
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 07/21/2013-08/07/2013	0.03	0.41	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.16
Building Off Road Diesel	0.03	0.41	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.16
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 10/01/2013-11/30/2013	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.49
Building Off Road Diesel	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.49
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 4/8/2013 - 5/14/2013 - SD - Yard/Work Areas

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 4/22/2013 - 4/30/2013 - RRS - Compaction

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 5/1/2013 - 5/31/2013 - SD - Access Road and Temp Const Area Clearing

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

10/18/2011 1:50:52 PM

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 6/1/2013 - 6/30/2013 - RRS - Final Grading and Paving

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 4/15/2013 - 4/21/2013 - RRS - Rough Grading

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 4/8/2013 - 5/14/2013 - SD - Yard/Work Areas

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 4/22/2013 - 4/30/2013 - RRS - Compaction

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 5/1/2013 - 5/31/2013 - SD - Access Road and Temp Const Area Clearing

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 6/1/2013 - 6/30/2013 - RRS - Final Grading and Paving

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 4/15/2013 - 4/21/2013 - RRS - Rough Grading

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant 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 Game or United States (U.S.) Fish and Wildlife Service?			✓	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. 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?				✓

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

3.4.1 Introduction

This section describes the biological resources in the area of the project, and identifies potential impacts to habitats and species—as well as to riparian communities, wetlands, and migratory wildlife corridors—that could result from construction and operation and maintenance (O&M) of the project. The biological resources analysis includes a discussion of applicant-proposed measures (APMs); with implementation of these APMs, all potential impacts to biological resources will be less than significant.

3.4.2 Methodology

To identify sensitive biological resources that could be impacted by the project, a detailed literature review and general and focused sensitive resource assessments were conducted. Species are considered to be special-status if they meet one or more of the following criteria:

- Plant and animal species listed as endangered, threatened, or candidates for listing under the federal Endangered Species Act (ESA)
- Plant and animal species listed as endangered, threatened, or candidates for listing under the California Endangered Species Act (CESA)
- Animals designated as Fully Protected Species, as defined in California Fish and Game Code Sections 3511, 4700, 5050, and 5515
- Animal species designated as Species of Special Concern by the California Department of Fish and Game (CDFG)
- Plant species on Lists 1, 2, 3, or 4 of the California Rare Plant Rank system

Additional investigations into potential biological resources in the project area included applicable databases searches; reviews of relevant scientific literature, recovery plans, and regulatory documents; meetings with the U.S. Fish and Wildlife Service (USFWS); and focused

biological surveys. These additional data-gathering efforts are described in the subsections that follow.

3.4.2.1 Literature Review

Preliminary investigations included a study of aerial photographs, U.S. Geological Survey topographic maps, and National Wetland Inventory maps, as well as literature and database searches. Other sources of information included the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California; the USFWS Critical Habitat Portal; the Santa Cruz Bird Club website; the CDFG's *California Bird Species of Special Concern*; *The Sibley Field Guide to Birds of Western North America*; the eBird (Cornell Lab of Ornithology and National Audubon Society, Inc.) website; the Santa Cruz Mountains Bioregional Council's "Sensitive Fauna of the Santa Cruz Mountains Bioregion" list; and the California Natural Diversity Database (CNDDB), which is maintained by the CDFG. A geographic information system-based CNDDB search was conducted within a 5-mile radius of each project component to determine all known occurrences of special-status species near the project area; the results of this search are shown in Figure 3.4-1: CNDDB Special-Status Species Occurrences Map.

Based on the results of the CNDDB search and USFWS Critical Habitat portal, the following species recovery plans, 5-year reviews, and other pertinent recovery status information sources were reviewed to better understand the current species population trends within the project area:

- *Acanthomintha obovata* ssp. *duttonii* (San Mateo thornmint), *Cirsium fontinale* var. *fontinale* (fountain thistle), *Pentachaeta bellidiflora* (white-rayed pentachaeta) 5-Year Review: Summary and Evaluation (USFWS 2010a)

- Ellicott Slough National Wildlife Refuge: Draft Comprehensive Conservation Plan and Environmental Assessment (USFWS 2010b)

- Designation of Critical Habitat for the Monterey Spineflower (*Chorizanthe pungens* var. *pungens*) (USFWS 2008)

- Monterey Spineflower 5-Year Review: Summary and Evaluation (USFWS 2009a)

- Recovery Plan for *Chorizanthe robusta robusta* (Robust Spineflower) (USFWS 2004)

- Recovery Plan for Insect and Plant Taxa from the Santa Cruz Mountains in California (USFWS 1998a)

- Recovery Plan for Pacific Coast Population of the Western Snowy Plover (USFWS 2007)

- Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS 1998b)

- Sampling Procedures for Determining Presence or Absence of the Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*) (USFWS 1993)

- Santa Cruz Long-Toed Salamander: 5-Year Review Summary and Evaluation (USFWS 2009b)

3.4.2.2 Agency Communication

Guidance, recommendations, and other information were obtained through meetings and correspondence with the USFWS and CDFG. All correspondence will be provided separately to California Public Utilities Commission (CPUC) staff.

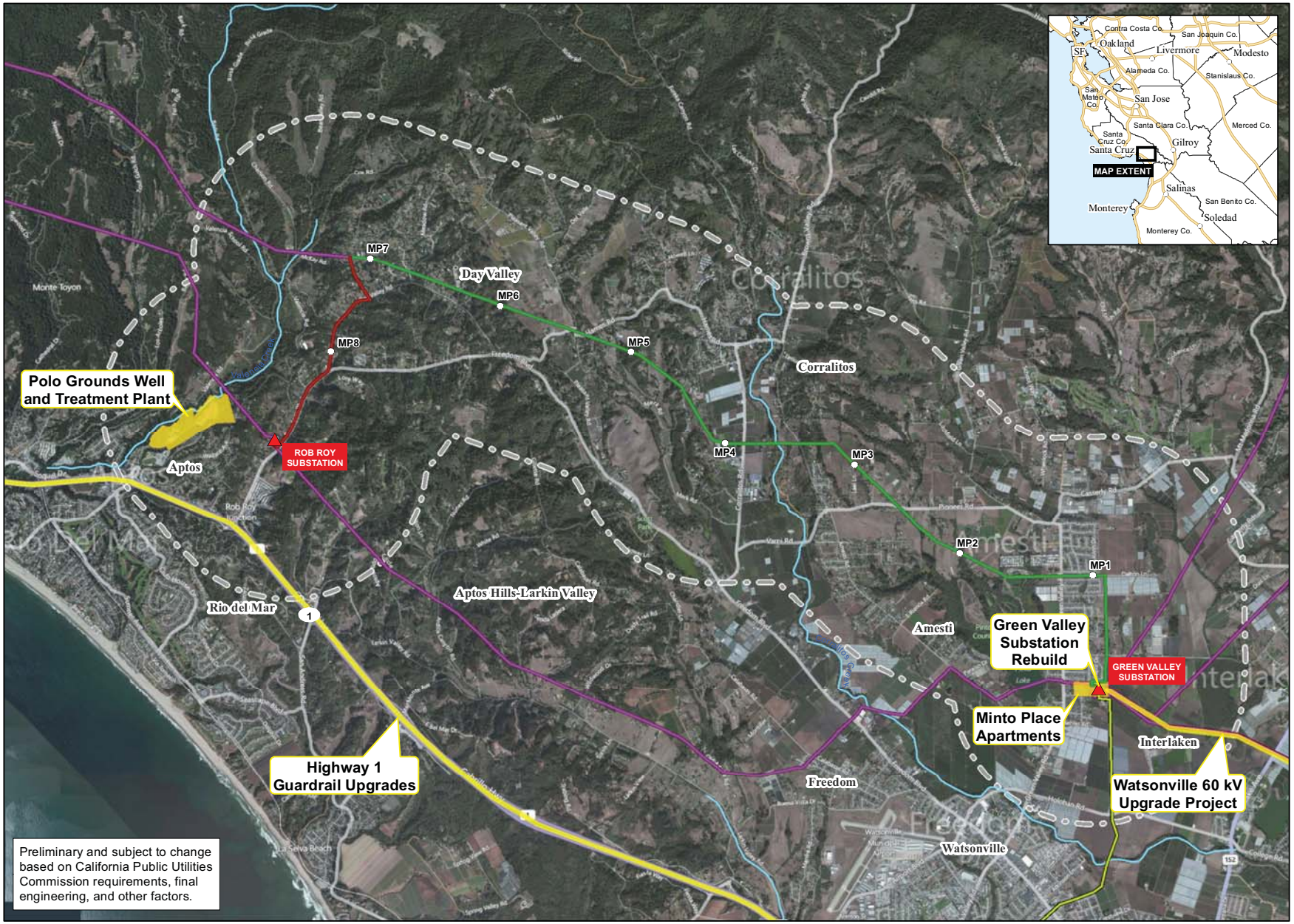
3.4.2.3 Field Surveys

Reconnaissance-Level Surveys

General reconnaissance-level surveys for special-status plant and wildlife species were conducted between September 20 and 29, 2010 and between March 8 and 11, 2011 by Insignia biologists DJ Allison and Kevin Kilpatrick. All areas within 250 feet (a 500-foot-wide corridor) of the Northern Alignment were surveyed in September of 2010. Only a limited review of the Cox-Freedom Segment was conducted at this time due to restricted access. In March of 2011, the Insignia biologists conducted reconnaissance-level surveys of work areas and access roads that were identified after the 2010 surveys, as well as a 150-foot buffer around these features if the area had not been previously surveyed. In addition, several drainages and water features that were noted in 2010 along the Northern Alignment were spot-checked to record their location using a submeter-accurate global positioning system unit. A 150-foot buffer (a 300-foot-wide corridor) along the Cox-Freedom Segment was surveyed at this time. In addition, an area extending approximately 100 feet from the existing fence line at Rob Roy Substation was surveyed. In some instances, fields with row crops or dense orchards were excluded from the surveys because they were not accessible by foot. These areas (approximately 2,350 feet south to 2,450 feet southwest of the Kliewer Lane/Green Valley Road intersection, approximately 1,600 feet north of the Leal Lane/Pioneers Road intersection to approximately 850 feet northeast of the Whiteman Avenue/Harrison Way intersection, and approximately 1,550 feet southwest of the Amnesti Lane/Poppy Hills Road intersection to approximately 1,300 feet northwest of the Corralitos Road/Skylark Lane intersection) are assumed to have no potential to support special-status species due to regular and intensive agricultural practices. Attachment 2-A Detailed Route Maps in Chapter 2 – Project Description shows the location of these areas.

Along the power lines, access roads, overland routes, and areas surrounding the substations, dominant habitat types and general hydrological characteristics were recorded. Drainages, wetlands, and other hydrologic features were recorded using a global positioning system unit. At each feature, the feature type, approximate ordinary high-water mark, dimensions, and vegetation was recorded. Plant and wildlife species that were observed during the surveys were also noted. Special-status plant species were not identified during the reconnaissance surveys due to the timing of the surveys, as several potential special-status plant species were not in bloom during the survey periods. However, suitable habitats were noted and were revisited during the focused rare plant surveys, which were conducted during appropriate blooming periods. The results of the reconnaissance surveys are included in the Biological Resources Technical Report, which will be submitted separately to CPUC staff.

Figure 3.4-1: CNDDB Special-Status Species Occurrences Map



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 4-1
Planned and Proposed Projects Map

- Existing Substation
- Cox-Freedom Segment
- Northern Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line
- MP1 Milepost
- Cumulative Project
- 1-Mile Buffer

0 0.25 0.5 1 Mile

Scale 1:42,000
when printed on 11x17 paper

PG&E

lxlr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_planned_proposed.mxd

California Red-Legged Frog Protocol-Level Surveys

No occurrences of California red-legged frog (*Rana draytonii*) were recorded within the immediate project area, although occurrences are known in southern Santa Cruz County. To identify whether California red-legged frogs were present within the project area, several ponds in the surrounding area that were suspected of providing suitable habitat were surveyed following the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (UFSWS 2005). Protocol-level surveys commenced on May 9, 2011 and were completed on July 21, 2011. These surveys included three daytime surveys and five nighttime surveys, which were conducted during both the breeding and non-breeding seasons according to the guidance. In some instances, daytime surveys were conducted by dip-netting or seining under the supervision of Dr. Gretchen Padgett-Flohr, an ESA Section 10(a)1(A) recovery permit holder. Additional surveys were conducted by Insignia biologists DJ Allison, Nick Fisher, and Peter Boice. The results of these surveys with regard to California red-legged frog are briefly summarized in the "Potential to Occur" column of Table 3.4-2: Special-Status Wildlife Species (in Section 3.4.3.4 Special-Status Wildlife Species). On December 29, 2011, PG&E provided the results of CRLF surveys to the USFWS. The USFWS concurred in an email sent on January 18, 2012 that the project would not result in impacts to the species. The California Red-Legged Frog Protocol-Level Survey Report will be submitted separately to CPUC staff.

Rare Plant Surveys

Focused rare plant surveys were conducted to identify populations of special-status plant species located within the project area. These surveys were conducted using a target list of special-status plant species, as determined during the development of the Biological Resources Technical Report and as further detailed in Section 3.4.3.3 Special-Status Plant Species. Target list species were considered to be those with a moderate or high potential to be present in the project area.

These surveys were conducted over two phases in order to capture the appropriate phenological periods of all target special-status plant species. Using the target list, Insignia botanists and biologists Dr. Roy Buck, Kristina Bischel, Nick Fisher, and DJ Allison identified any special-status plant species on the target list that could occur within project work areas and within 100 feet (a 200-foot-wide corridor) of the Northern Alignment and Cox-Freedom Segment, work areas and overland access routes, as well as 100 feet outside of the Rob Roy Substation fence line and Green Valley Substation fence line. Identified special-status plant populations were photographed and recorded using a sub-meter global positioning system unit. The first phase of surveys—conducted from May 23 to June 1, 2011 along the entire project alignment—focused on identifying populations of Monterey spineflower (*Chorizanthe pungens pungens*), robust spineflower (*Chorizanthe robusta robusta*), Choris' popcorn-flower (*Plagiobothrys chorisianus chorisianus*), and Kellogg's horkelia (*Horkelia cuneata sericea*). The second phase of surveys—conducted from August 8 to 10, 2011 and on August 22, 2011—focused on identifying populations of Santa Cruz tarplant (*Holocarpha macrodenia*). The second phase of surveys was only conducted in areas with the potential to support Santa Cruz tarplant. A reference population of Santa Cruz tarplant near the intersection of Atkinson Lane and Vic Rugh Lane in Watsonville was visited on August 10, 2011 to confirm the blooming period for this species. The rare plant survey results are described in Section 3.4.3.3 Special-Status Plant Species. The Rare Plant Survey Report will be submitted separately to CPUC staff.

3.4.2.4 Species Occurrence Potential Determination

The species occurrence potentials were determined using information developed in the Biological Resources Technical Report, California Red-Legged Frog Protocol-Level Survey Report, and Rare Plant Survey Report, as previously described. For species with CNDDB occurrences within 5 miles of the project area, the following criteria were used to determine the potential for special-status species to occur within the project area:

- Present: The species was observed in the project area during field surveys.
- High Potential: CNDDB occurrences have been recorded within 0.75 mile of the project and suitable habitat is present. Individuals were not observed during field surveys; however, the species could be present or otherwise impacted by the project.
- Moderate Potential: CNDDB occurrences have been recorded within 5 miles of the project area and suitable habitat is present. Individuals were not observed during field surveys; however, the species could be present or otherwise impacted by the project.
- Low Potential: Suitable or marginal habitat may occur in the project area, but no CNDDB records of the species have been recorded within 50 years, records of the species within 5 miles of the project are suspected to be extirpated or described as potentially misidentified with other species, or individuals were not observed during field surveys and are not anticipated to be present.
- No Potential: The project area is not located within the range of the species; suitable habitat does not exist in the project area; the species is restricted to a specific area outside of the project area; previous CNDDB occurrences of the species in the project area may have been misidentified or are known to be extirpated; there are no CNDDB records of the species within the past 50 years; and/or protocol-level surveys failed to identify the species.

In addition to the CNDDB records search, additional sources cited in Section 3.4.2.1 Literature Review—such as the Santa Cruz Bird Club website, the CDFG's *California Bird Species of Special Concern*, *The Sibley Field Guide to Birds of Western North America*, the eBird website, and the the Santa Cruz Mountains Bioregional Council's "Sensitive Fauna of the Santa Cruz Mountains Bioregion" list—were reviewed to determine additional species with the potential to occur in the project area. The following criteria were used to determine the level of potential for these species to occur within the project area:

- Present: The species was observed in the project area during field surveys.
- High Potential: The project area is located within the range of the species, suitable habitat is present in the project area, and the species has been frequently observed in the project area based on literature.
- Moderate Potential: The project area is located within the range of the species; suitable habitat is present in the project area; and the species has been infrequently observed in the project area or information regarding observations in the project area was unavailable.

- Low Potential: The project area is located within the range of the species; poor to marginal habitat is present in the project area; and the species has been infrequently observed in the project area or information regarding observations in the project area was unavailable.

- No Potential: The project area is not located within or limited portions of the project area are located within the range of the species; no habitat for the species exists in the project area; and the species has been sporadically observed in the project area or information regarding observations in the project area was unavailable.

3.4.3 Existing Conditions

3.4.3.1 Regulatory Background

Federal

Federal Endangered Species Act

The ESA protects plants and wildlife species that are listed as endangered or threatened by the USFWS and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NOAA Fisheries).

Under Section 9, the ESA prohibits take of endangered wildlife, where "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 U.S. Code [U.S.C.] Section 1532(19), 1538). This can also include the modification of a species' habitat. For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land, and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S.C. Section 1538(c)).

Under Section 7 of the ESA, federal agencies are required to consult with the USFWS and/or NOAA Fisheries if their actions, including permit approvals or federal funding, could adversely affect a listed species (including plants) or its critical habitat. Through Section 7 consultation and the issuance of a Biological Opinion, the USFWS and/or NOAA Fisheries may issue an incidental take permit, allowing take of the species that is incidental to another authorized activity, provided that the action will not jeopardize the continued existence of the species.

Section 10 of the ESA provides for issuance of incidental take permits, for private actions that have no federal involvement, through the development of a HCP.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act recognizes international treaties between the U.S. and other countries that have afforded protection to migratory birds and any of their parts, eggs, and nests, from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations, or by permit. As authorized by the Migratory Bird Treaty Act, the USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation

- Scientific collecting
- Special purposes (rehabilitation, education, migratory game bird propagation, and salvage)
- Take of predatory birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in 50 Code of Federal Regulations (CFR) Part 13 (General Permit Procedures) and 50 CFR Part 21 (Migratory Bird Permits).

State

California Endangered Species Act

The CESA, adopted in 1984, generally parallels the main provisions of the ESA. It is composed of Sections 2050 through 2085 of the California Fish and Game Code. Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful projects. State lead agencies are required to consult with the CDFG to ensure that any action undertaken is not likely to jeopardize the continued existence of any state-endangered or state-threatened species, or result in the destruction or adverse modification of essential habitat.[1]

California Fish and Game Code Sections 3511, 4700, 5050, and 5515

The State of California first began to designate species as "fully protected" prior to the creation of the CESA and the federal ESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or facing possible extinction, including fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the CESA and/or the federal ESA. Fully protected species may not be taken or possessed at any time, and incidental take permits cannot be issued for these species (Fish and Game Code Section 4700).

California Fish and Game Code Section 3503 et seq.

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3513 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Native Plant Protection Act of 1977, California Fish and Game Code Sections 1900 – 1913

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code Section 1900 through 1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this state." The NPPA is administered by the CDFG. The California Fish and Game

[1] Essential habitat, as defined by Section 2053 of the Fish and Game Code, is land where, if adverse modification occurred, the existence of the listed species would be jeopardized.

Commission have the authority to designate native plants as "endangered" or "rare" and to protect them from take.

Title 14, California Code of Regulations (Sections 670.2 and 670.5)

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

Local

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

Santa Cruz County General Plan

The Conservation and Open Space Element of the Santa Cruz County (County) General Plan outlines County policies toward the conservation and preservation of natural and cultural resources, including open space. Specifically, focus is given to the protection of "sensitive habitats," which are defined by Policy 5.1.2 as:

a) Areas of special biological significance as identified by the State Water Resources Control Board.

b) Areas that provide habitat for locally unique biotic species/communities, including coastal scrub, maritime chaparral, native rhododendrons (*Rhododendron* spp.) and associated elkgrass (*Xerophyllum* spp.), mapped grasslands in the coastal zone and sand parkland, and for Special Forests, including San Andreas Live Oak Woodlands, valley oak (*Quercus lobata*), Santa Cruz cypress (*Cupressus abramsiana*), indigenous Ponderosa pine (*Pinus ponderosa*), indigenous Monterey pine (*Pinus radiata*), and ancient forests.

c) Areas adjacent to essential habitats of rare, endangered, or threatened species as defined in (e) and (f) below.

d) Areas that provide habitat for Species of Special Concern as listed by the CDFG in the Special Animals list of the CNDDB.

e) Areas that provide habitat for rare or endangered species meeting the definition of Section 15380 of the California Environmental Quality Act (CEQA) guidelines.

f) Areas that provide habitat for rare, endangered, or threatened species as designated by the State Fish and Game Commission, the USFWS, or the CNPS.

g) Nearshore reefs; rocky intertidal areas; seacaves; islets; offshore rocks; kelp beds; marine mammal hauling grounds; sandy beaches; shorebird roosting, resting, and nesting areas; cliff nesting areas; and marine, wildlife or educational/research reserves.

h) Dune plant habitats.

i) All lakes, wetlands, estuaries, lagoons, streams, and rivers.

j) Riparian corridors.

Sensitive habitats are protected under the County's Sensitive Habitat Protection Ordinance; however, projects otherwise subject to County jurisdiction may be exempt from this ordinance if sensitive habitats have been addressed in an Environmental Impact Report under CEQA. Applicable "sensitive habitats" that have been addressed within this section include aquatic features—where applicable to special-status species—and essential and adjacent habitat for rare, threatened, endangered, or otherwise protected species, as defined by CEQA, the CDFG, the USFWS, and/or the CNPS.

Specific directives to protect these sensitive habitats are described in Policy 5.1.7 of the Open Space Element, and include the following guidelines:

a) Place structures as far from the habitat as feasible.

b) Delineate development envelopes to specify location of development in minor land divisions and subdivisions.

c) Require easements, deed restrictions, or equivalent measures to protect the portion of a sensitive habitat on a project parcel that is undisturbed by a proposed development activity or to protect sensitive habitats on adjacent parcels.

d) Prohibit domestic animals where they threaten sensitive habitats.

e) Limit removal of native vegetation to the minimum amount necessary for structures, landscaping, driveways, septic systems, and gardens.

f) Prohibit landscaping with invasive or exotic species, and encourage the use of characteristic native species.

3.4.3.2 Environmental Setting

The project ranges in elevation from approximately 100 to 600 feet above sea level and receives an average annual precipitation of approximately 23 inches. The project area includes a mix of rural residential development, undeveloped natural habitats, and agricultural areas—with apple orchards, livestock pastures, and row crops being the most prevalent. Overall development of the area is often sparse, lending to a natural setting that often fosters the presence of more common wildlife species. Common wildlife species observed during surveys conducted in September 2010 and March 2011 include Columbian black-tailed deer (*Odocoileus hemionus* ssp. *columbianus*), great horned owl (*Bubo virginianus*), northern saw-whet owl (*Aegolius acadicus*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), American bittern

(*Botaurus lentiginosus*), acorn woodpecker (*Melanerpes formicivorus*), western scrub jay (*Aphelocoma californica*), Steller's jay (*Cyanocitta stelleri*), aquatic garter snake (*Thamnophis atratus*), gopher snake (*Pituophis catenifer*), and American bullfrog (*Lithobates catesbeianus*).

Natural Vegetation Communities

Based on field surveys, nine natural vegetation communities and two developed habitats were identified within the project area. These areas are further described in the sections that follow. In addition to native species described in these sections, the project area has a high incidence of non-native plant species, which are relatively common in every vegetation community. Common non-native species include brooms (*Cytisus* spp. and *Spartium* spp.), blue gum (*Eucalyptus globulus*), Himalayan blackberry (*Rubus discolor*), curly dock (*Rumex crispus*), and several grasses.

Coastal Oak Woodland

Coastal oak woodlands in the project area are typically dominated by mature coast live oak (*Quercus agrifolia*), but may also be interspersed with Pacific madrone (*Arbutus menziesii*), coast redwood (*Sequoia sempervirens*), blue gum, or Monterey pine. Coastal oak woodlands have a defined canopy with understory species that commonly include poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), Himalayan blackberry, California coffeeberry (*Rhamnus californica*), manzanita (*Arctostaphylos* spp.), toyon (*Heteromeles arbutifolia*), non-native broom, and/or non-native or native grasses. Coastal oak woodlands are most common along south- and west-facing hillsides. Due to regular vegetation management along the rights-of-way (ROWs), coastal oak woodlands typically grow outside of the ROWs or in gullies where the height of the power line conductor is increased. This habitat is scattered throughout the project area.

Coastal Scrub

Coastal scrub communities in the project area are typically dominated by coyote brush (*Baccharis pilularis*), manzanita, ceanothus (*Ceanothus* spp.), coffeeberry, toyon, madrone, poison oak, and non-native broom, as well as immature coast live oak, which develops in a shrub form. Brush thickets of these species can reach 5 to 10 feet in height, and are typically impenetrable. This community most commonly develops beneath existing power lines in coastal oak woodland areas where vegetation management has promoted the growth of shrub-forming species and hindered the growth of canopy-forming species such as coast live oak. It also forms in more xeric or warmer hillsides where mature oak development is otherwise stunted. Coastal scrub is scattered throughout the project area. Policy 5.1.2 of the Conservation and Open Space Element of the Santa Cruz County General Plan defines coastal scrub as a sensitive habitat.

Mixed Chaparral

Mixed chaparral communities form in the most xeric portions of the project area. The lack of water is often caused by well-drained sandy soils, southern or western exposure, topographic position, or a combination of these features. Typical plants found in these communities include chamise (*Adenostoma fasciculatum*), sticky monkey-flower (*Mimulus aurantiacus*), manzanita, California sagebrush (*Artemisia californica*), coast buckwheat (*Eriogonum latifolium*), yellow-bush lupine (*Lupinus arboreus*), and non-native grasses. Specific to the project area, this

community often forms on soils developed from fossil marine sediments, creating unique habitats that are often home to several rare endemic species. These communities are found in small patches throughout the project area, along both the Northern Alignment and Cox-Freedom Segment.

Coastal Riparian

Coastal riparian habitat can be defined by thick, often impenetrable brush communities, including willows (*Salix* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), blackberry (*Rubus* spp.), non-native and native grasses, and poison oak. Scattered cottonwoods (*Populus* spp.) are often present as well. These communities form within coastal oak woodlands, coastal scrub, annual grassland, and perennial grassland communities, where intermittent or perennial drainages, streams, or other ephemeral waterbodies exist. In some locations along large creeks or drainages, such as Corralitos Creek, large stands of cottonwoods can develop. In the project area, these communities are often heavily impacted by livestock grazing and agricultural run-off. Coastal riparian communities occur throughout the project area, but are more concentrated along the Northern Alignment in the areas located in the vicinity of the unincorporated communities of Watsonville and Corralitos than in other parts of the project area.

Annual Grassland

Annual grasslands in the project area can be characterized by a variety of different types, including clearings in coastal oak woodland, fallow fields, pastures, and previously cleared or disturbed areas where the dominant plants include annual, typically non-native grasses, and other weedy species. Characteristic plant species include annual beard grass (*Polypogon monspeliensis*), Harding grass (*Phalaris aquatica*), wild oats (*Avena* spp.), big quaking grass (*Briza maxima*), chess (*Bromus* spp.), thistle (*Centaurea* spp.), and curly dock. Annual grassland areas are commonly used for livestock grazing or can develop in agricultural fields that are not under cultivation. These areas can also occasionally contain sparse coast live oak trees or coyote brush. This plant community is often the most likely replacement for coastal prairies, historically a once common habitat in the project area. The historical presence of coastal prairie suggests that some special-status plants, such as Santa Cruz tarplant (*Holocarpha macradenia*), may occur in annual grassland communities. Annual grasslands are found throughout the project area.

Perennial Grassland

Perennial grasslands in the project area are characterized by native or non-native bunchgrasses, mainly Harding grass, which tend to extend their growing season throughout the entire year. These communities are less common than annual grasslands due to increased competition from fast-growing annual grasses. In the project area, this habitat is found in one location—between approximately 1,200 feet west of the Aldridge Lane/Blake Avenue intersection and approximately 1,950 feet southwest of the Hames Hollow/Hames Road intersection. This location is shown in Attachment 2-A: Detailed Route Maps in Chapter 2 – Project Description.

Fresh Emergent Wetland

Fresh emergent wetlands are composed of annual or perennial grasslands where an increased amount of water collects, promoting the growth of mesic plant species. These communities typically form along valley bottoms or near seeps, where soils remain saturated for the majority

or all of the year. These communities can form in livestock pastures and typically contain cattails, sedges, and/or rushes. During the spring, these areas may have the potential to support special-status grassland species, such as Choris popcorn-flower (*Plagiobothrys chorisianus chorisianus*), associated with mesic sites. Fresh emergent wetlands were noted approximately 400 feet east of the intersection of Lapus Drive and Agate Drive, approximately 2,150 feet east of the intersection of Mountain View Road and Linden Road, and approximately 1,200 feet west of the intersection of Aldridge Lane and Blake Avenue. No fresh emergent wetland communities are present within the project work areas or access routes.

Non-Native Woodland

Non-native woodland describes nearly monotypic tree stands dominated by blue gum or *Acacia* spp. Understory development in these communities tends to be limited because of a combination of thick bark, leaf litter, and/or seed pods deposited below the trees, as well as potentially allelopathic[2] compounds in these materials. Common understory species include poison oak and varieties of non-native broom. These areas typically support a limited amount of native vegetation, thus, a limited potential exists for special-status plant species to occur. However, blue gum stands often support nesting raptors. *Acacia* spp. woodland is found in only one location in the project area, approximately 2,000 feet northwest of the intersection of Corralitos Road and Skylark Lane along the Northern Alignment. Blue gum woodlands are very common and are found throughout the entire project area.

Lacustrine

Lacustrine habitat is defined by perennial freshwater, typically in the form of ponds, lakes, or reservoirs. In the project area, vegetation in this habitat often consists of mosquito fern (*Azolla* spp.) or duckweed (*Lemna* spp.) present in open-water portions of the feature, as well as in shallow or peripheral areas containing cattail, tule, willows, sedges, and cottonwoods. In several instances, emergent vegetation is absent due to heavy livestock use of the area. No records exist of special-status plant species in these habitats in the project area. The project crosses lacustrine habitat approximately 1,500 feet east of the intersection of Pioneer View Road and Pioneers Road, where two stockponds are present. Several additional stockponds exist in the surrounding area, including College Lake, a large seasonal lake east of the intersection of Lapus Drive and Agate Drive. No lacustrine habitat is present within the project work areas or access routes.

Developed Habitats

Agricultural

Agricultural areas within the project area include apple orchards, berry fields, vineyards, other row crops, and greenhouses. Livestock holding areas with little to no vegetation are also included in this classification. Agricultural land is primarily located in the eastern half of the project area, between approximately 300 feet south of the intersection of Onyx Drive and Celia Drive and approximately 550 feet north of the intersection of Quail Run and Day Valley Road.

[2] Allelopathy describes the process by which one plant produces compounds that inhibit or otherwise influence the growth or development of neighboring plants.

Disturbed or Developed

Disturbed or developed areas are classified as residential and commercial development, and also include landscaped areas, paved areas, or bare unpaved and gravel lots. No potential exists for these areas to support special-status species; however, they can often support native and non-native avian species by providing both nesting and foraging habitat. Disturbed or developed habitat is located throughout the project area.

3.4.3.3 Special-Status Plant Species

Based on the literature and database search as well as results from the field surveys, occurrences for 20 special-status plant species were identified within 5 miles of the project, as shown in Table 3.4-1: Special-Status Plant Species and Figure 3.4-1: CNDDB Special-Status Species Occurrences Map. Only one target special-status plant species, Monterey spineflower (*Chorizanthe pungens* var. *pungens*), was confirmed to be present within the project area. A small potential population of Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), a Rank 4.2 species, was also observed during the rare plant surveys. This population could not be confirmed because of the seasonally diminishing morphology at the time of the survey. Thus, this species is considered to have a high potential to occur in the project area. Species that are present or have a moderate or high potential to occur within the project area are further described in the sections that follow.

Monterey Spineflower

Monterey spineflower is federally threatened and a Rank 1B.2 species. It occurs in coastal dunes, as well as coastal oak woodlands and maritime chaparral where loose, sandy marine-derived soils are present and competition from other plants is limited. These specific soil types are present in a large portion of the project area—primarily along the Cox-Freedom Segment, throughout the area planned for the Rob Roy Substation Connections, at the western end of the Northern Alignment, and at the approximate halfway point of the Northern Alignment.

These populations were found to vary in terms of the population sizes and densities, covering a total of approximately 4 acres throughout the approximately 301 acres included in the survey area. Less than 1 acre of Monterey spineflower populations occur in work areas and overland access routes, which total approximately 32 acres. Monterey spineflower was observed mostly on nutrient-poor sandy soils or in areas that had been mowed, which reduces the likelihood for other competitive species such as non-native grasses to occur. Impacts to Monterey spineflower are discussed in Section 3.4.4 Potential Impacts and Applicant-Proposed Measures.

Gairdner's Yampah

Gairdner's yampah is a Rank 4.2 species in the carrot family (*Apiaceae*). This perennial herb occurs in mesic areas in broadleafed forest, chaparral, coastal prairie, valley and foothill grassland, and vernal pool habitats; it blooms from June through October. During the August 2011 rare plant surveys, approximately 10 potential Gairdner's yampah individuals were observed in one location along the Northern Alignment. Although the plants were in bloom, the leaves were not present at the time of the surveys, making it impossible to positively identify the

Table 3.4-1: Special-Status Plant Species

Species Name	Listing Status[3]	Life History	Blooming Period	Potential to Occur
Anderson's manzanita (*Arctostaphylos andersonii*)	1B.2	This species is found in the Santa Cruz Mountains from southeast Santa Cruz County and southern Santa Clara County to southern San Mateo County. It typically occurs in openings in Douglas fir (*Pseudotsuga menziesii*), coast live oak (*Quercus agrifolia*), and coast redwood (*Sequoia sempervirens*) forests. It is distinguished from other local species by the lack of a basal burl.	February to May	Limited suitable habitat exists in patches along the Northern Alignment in coastal oak woodland habitat where redwood or Douglas fir is also present. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*)	1B.2	This species inhabits marine sandy soil deposits in closed-cone coniferous forest, maritime chaparral, coastal oak woodland, and coastal scrub from Monterey County to southern Santa Cruz County. It requires fire for germination.	January to June	Small populations of the species persist in Santa Cruz County in undisturbed maritime chaparral habitat. Suitable habitat is limited, as maritime chaparral communities are limited throughout the project area. Marginal habitat may be present within coastal scrub communities. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
Pajaro manzanita (*Arctostaphylos pajaroensis*)	1B.1	This species inhabits sandy soils within maritime chaparral or along the edges of less-developed coastal oak woodland. It is endemic to northern Monterey County and southern Santa Cruz County and requires fire for germination.	December to March	Suitable habitat exists in small patches along the Northern Alignment in mixed chaparral and coastal scrub habitats. The project area is located north of the northernmost record of the species. In addition, all populations in Santa Cruz County are believed to be extirpated. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
Kings Mountain manzanita (*Arctostaphylos regismontana*)	1B.2	This species is found in the Santa Cruz Mountains from San Mateo County to Santa Clara County in broad-leafed upland forest, chaparral, and closed-cone coniferous forest.	January to April	One occurrence has been recorded within 5 miles of the project area; however, CNDDB staff believes that this occurrence is not Kings Mountain Manzanita, but rather a misidentified example of Anderson's manzanita. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**

[3] Explanation of state and federal listing codes:

Federal listing codes:
-FE: Federally Endangered Species
-FT: Federally Threatened Species

California listing codes:
-CE: State-listed as Endangered

California Rare Plant Rank:
-1B.1: Rare, threatened or endangered in California and elsewhere; seriously threatened in California
-1B.2: Rare, threatened or endangered in California and elsewhere; fairly threatened in California
-2.1: Rare, threatened or endangered in California, but more common elsewhere; seriously threatened in California
-4.2: Uncommon in California; fairly threatened in California

Species Name	Listing Status[3]	Life History	Blooming Period	Potential to Occur
Bristly sedge (*Carex comosa*)	2.1	This species occurs throughout California, Oregon, Idaho, and Washington, although the species is typically rare throughout this range. It occurs along coastal marshes and fresh emergent wetlands.	May to September	Limited fresh emergent wetland habitat is present in the project area. In addition, only one record from 1997 has been recorded of this species within 5 miles of the project area. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	1B.2	This species is found in valley and foothill grassland habitat. It often occurs along the periphery of seasonal swales or vernal pools.	May to October (occasionally November)	Suitable habitat is scattered throughout the project area in annual and perennial grassland habitats; however, only one record for this species (1909) has been recorded in Santa Cruz County. Surveys conducted in 1998 failed to locate this population. The CNDDB reports the occurrence as possibly extirpated from the project area. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
Monterey spineflower (*Chorizanthe pungens* var. *pungens*)	FT 1B.2	This species inhabits openings in maritime chaparral, grassland, and coastal scrub growing in marine sandy soil deposits, coastal dunes, and interior stabilized dune deposits.	April to June	During the 2011 rare plant surveys, populations were identified at the southern end of the Cox-Freedom Segment, at the western end of the Northern Alignment, and at the approximate halfway point of the Northern Alignment. In addition, the Cox-Freedom Segment runs adjacent to USFWS-designated critical habitat—Unit 5: Freedom Boulevard. **Present**
Robust spineflower (*Chorizanthe robusta* var. *robusta*)	FE 1B.1	This species inhabits openings in maritime chaparral, grassland, and coastal scrub growing in marine sandy soil deposits, coastal dunes, and interior stabilized dune deposits.	April to June	Suitable sediment types and habitats were identified along the Northern Alignment approximately 650 feet west of the intersection of Pine Forest Drive and Downing Drive, although no known populations are crossed by the alignment. Two known populations—the Aptos and Freedom populations (along with their USFWS-designated critical habitat units)—occur within 1 mile and 0.25 mile of the project, respectively. Suitable sediments types are present in the vicinity of Rob Roy Substation. No populations of this species were identified during the 2011 rare plant surveys. **High Potential**
Minute pocket moss (*Fissidens pauperculus*)	1B.2	This species occurs in north coast coniferous forests from Santa Cruz County north to Humboldt County. Locally, it is found growing on damp soils along the edges of perennial or seasonal streams in coast redwood, Douglas fir, or tanoak (*Lithocarpus densiflorus*) woodlands.	January to May[4]	Because there are no redwood-, tanoak-, or Douglas fir-dominated woodlands containing streams, no suitable habitat is present within the project area. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**

[4] Mosses do not produce flowers. The seasonal period provided corresponds to the period when fruiting bodies are typically developed.

Species Name	Listing Status[3]	Life History	Blooming Period	Potential to Occur
Santa Cruz tarplant (*Holocarpha macradenia*)	FT CE 1B.1	This species inhabits sandy or sandy-clay soils in coastal scrub, prairie, and grassland habitats along Monterey Bay from Prunedale to Santa Cruz. It often benefits from livestock grazing or seasonal mowing, which reduces competition with non-native grasses.	June to October	Several occurrences of this species have been recorded within 5 miles of the project area, the nearest within 0.25 mile west of the intersection of Pioneer View Road and Pioneers Road. Suitable habitat is located along the southeastern portions of the Northern Alignment, where pastures and other agricultural fields containing grassland habitats are more prevalent. No Santa Cruz tarplants were observed within the project area during the rare plant surveys conducted in August 2011. Therefore, as a result of the field survey, the species has been determined to have low potential to occur in the project area. **Low Potential**
Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*)	1B.1	This species inhabits old dunes and coastal sandhills within openings in closed-cone coniferous forests, maritime chaparral, and coastal scrub habitats.	April to September	Suitable sediment types and habitats were identified along the Northern Alignment approximately 650 feet west of the intersection of Pine Forest Drive and Downing Drive, although no known populations are crossed by the project. Suitable habitat may also exist along the Cox-Freedom Segment where suitable soil types are present. Several populations of the more common *Horkelia cuneata* ssp. *cuneata* were observed during the 2011 rare plant surveys; however, this species was not identified. **Low Potential**
Smooth lessingia (*Lessingia micradenia* var. *glabrata*)	1B.2	This species occurs in serpentine outcrops and in rocky soils in serpentine bunchgrass grassland. It is an endemic to the Santa Clara Valley along the western slope of the Santa Cruz Mountains.	July to November	No suitable serpentine habitat is present within the project area. In addition, all recordings of this species have been in the Santa Clara Valley, west of the project area. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**
Woodland woolythreads (*Monolopia gracilens*)	1B.2	This species inhabits openings within cismontane and north coast conifer forests and is often found near or in areas with serpentine or rocky soils. Local occurrences have been recorded near Hecker Pass and on the eastern side of the Santa Cruz Mountains in Santa Clara County.	March to July	Limited suitable habitat for this species is present in the project area, as most local occurrences were recorded at higher elevations and in areas with rocky or serpentine soils. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**
Dudley's lousewort (*Pedicularis dudleyi*)	1B.2	Limited information regarding the species is available, as only 10 recorded observations have been made. It is believed to inhabit cool, moist stream banks and vertical cuts in coast redwood forests.	April to June	One local occurrence for this species was recorded in 1884 along Aptos Creek, although it has never been relocated. No other occurrences have been recorded in the Monterey Bay Area. No suitable habitat is present within the project area. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**

Species Name	Listing Status[3]	Life History	Blooming Period	Potential to Occur
Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*)	1B.2	This species inhabits sandy shale slopes in recently burnt chaparral and openings in lower montane coniferous forest habitats.	May to June	Local occurrences of this species were recorded along the ridgeline of the Santa Cruz Mountains along the Santa Cruz/Santa Clara County border. The project is located outside of the elevation range of the species, between 1,200 and 3,500 feet above mean sea level. In addition, no suitable habitat is present in the project area. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**
White-rayed pentachaeta (*Pentachaeta bellidiflora*)	FE CE 1B.1	This species occurs in open grasslands or dry rocky slopes in serpentine-derived soils communities.	March to May	The only remaining extant populations of this species are believed to occur in San Mateo County in Edgewood Regional Park. In addition, no serpentine bunchgrass communities were identified in the project area. As a result, the project is located outside of the species' current range, and no suitable habitat is present. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**
Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)	4.2	This species occurs in vernally mesic areas within chaparral, coastal prairie, grasslands, and broadleafed forests throughout coastal California.	June to October	One potential population of this species was observed during the 2011 rare plant surveys outside of the ROW along the Northern Alignment. Because of the time of year at which it was identified, the population could not be confirmed, but it is highly suspected of being this species. **High Potential**
Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*)	1B.2	This species inhabits seasonally inundated wetlands or vernal pools in coastal prairies and openings in coastal oak woodlands and coastal scrub.	March to June	One population has been recorded approximately 1.7 miles southwest of the project area at the Watsonville Airport. Limited seasonally mesic grassland sites are scattered throughout the project area that may serve as suitable habitat. No vernal pool features are present. No populations of this species were identified during the 2011 rare plant surveys. **Low Potential**
San Francisco popcorn-flower (*Plagiobothrys diffusus*)	CE 1B.1	This species inhabits seasonally inundated wetlands or vernal pools in coastal prairies with serpentine soils and serpentine bunchgrass communities.	March to June	One individual, observed within 5 miles of the project area, was recorded in 1993. All remaining populations have been observed from Santa Cruz west along the coast. No serpentine communities were identified within the project area. As a result, no suitable habitat is present. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**
Santa Cruz clover (*Trifolium buckwestiorum*)	1B.1	This species occurs in moist coastal prairies or meadows, typically surrounded by cismontane or conifer woodlands.	April to October	The nearest record of this species was documented in Forest of Nisene Marks State Park in 1986, although is believed to have been destroyed by rooting feral pigs. No suitable habitat is present in the project area. No populations of this species were identified during the 2011 rare plant surveys. **No Potential**

Sources: CNDDB, 2011; USFWS, 2011; CNPS, 2011; and CDFG, 2011

subspecies. No potential Gairdner's yampah individuals were observed within project work areas or on access roads; however, this species has a high potential to occur in other locations within the project area.

Robust Spineflower

Robust spineflower (*Chorizanthe robusta* var. *robusta*) is a federally endangered and Rank 1B.1 species that occurs in marine-derived sandy soils along the coast and inland in chaparral or coastal oak woodland. While no populations of robust spineflower were identified during field surveys, two known populations of the species are located within 1 mile of Rob Roy Substation—the Freedom population adjacent to Aptos High School and the Aptos population north of Valencia Creek. In addition, it has been recorded that this species exhibits varying morphology in the Aptos area. This often leads to it being confused with Monterey spineflower and other members of the *Pungentes* section of the genus *Chorizanthe* when using conventional keying methods. Because several large populations of Monterey spineflower were observed surrounding Rob Roy Substation, there is potential for robust spineflowers with atypical morphology to be intermixed with Monterey spineflower in the area.

3.4.3.4 Special-Status Wildlife Species

Based on the literature and database search, CNDDB occurrences for 13 special-status wildlife species were identified within 5 miles of the project, as shown in Table 3.4-2: Special-Status Wildlife Species and Figure 3.4-1: CNDDB Special-Status Species Occurrences Map. Although black legless lizard is listed in the CNDDB, information provided by the CDFG indicated that no occurrences of this species were recorded within 5 miles of the project and that the closest CNDDB occurrences were located in coastal dune habitat. As a result, this species will not be further discussed, as it is assumed not to be present. Further reviews of sources identified in Section 3.4.2.1 Literature Review identified an additional 17 species with the potential to occur in the project area. The species identified during the review of CNDDB occurrences and other sources are included in Table 3.4-2: Special-Status Wildlife Species. Seven special-status species—steelhead south-central distinct population segment (DPS) (*Oncorhynchus mykiss irideus*), Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*), white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), Townsend's western big-eared bat (*Corynorhinus townsendii*), western red bat (*Lasiurus blossevillii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)—were determined to be present or have a moderate or high potential to be present in the project area. A detailed discussion regarding local populations, habitat requirements, and life history for species with a moderate or high potential to occur is provided in the subsections that follow.

Steelhead South-Central Distinct Population Segment

Steelhead (*Oncorhynchus mykiss irideus*) south-central DPS is a genetically distinct segment of steelhead that ranges from the Pajaro River basin in Santa Cruz County south to the Santa Maria River basin in Santa Barbara County. The south-central DPS is an anadromous form of the rainbow trout—meaning that it spends a portion of its lifecycle in freshwater environments and a portion in saltwater environments. The local steelhead south-central DPS are a winter-run population, typically remaining in the ocean until sometime between November and April, when they return to freshwater streams to spawn. After spawning, adults typically migrate back to the ocean. Habitat for steelhead south-central DPS exists within Corralitos Creek, a large seasonal

Table 3.4-2: Special-Status Wildlife Species

Species Name	Listing Status[5]	Life History	Potential to Occur
Invertebrates			
Ohlone tiger beetle (*Cicindela ohlone*)	FE	This species is endemic to Santa Cruz County. It occurs in coastal terraces with native grassland or prairie habitat. Ohlone tiger beetles are associated with shallow, pale, poorly drained clay or sandy soils that have a hard crust in summer months. This species is predatory, feeding on small invertebrates. Females excavate holes into which eggs are laid. The larvae then emerge from eggs and may require 1 to 4 years in the excavation to develop into adult beetles.	There are no CNDDB records for occurrences within 5 miles of the project area. In addition, the 5-Year Review for the species documents past occurrences of the species in only five geographic areas: west of the City of Soquel; in the City of Scotts Valley; and north, west, and northwest of the City of Santa Cruz. These areas are outside of the project area. In addition, the project area does not contain suitable habitat for this species. Thus, there is no potential for this species to occur in the project area. **No Potential**
Smith's blue butterfly (*Euphilotes enoptes smithii*)	FE	This species is a closely associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz counties. Coast buckwheat (*Eriogonum latifolium*) and seacliff buckwheat (*Eriogonum parvifolium*) serve as host and nectar plants. Naked buckwheat (*Eriogonum nudum*) also serves as a nectar plant. The flight season extends from mid-June to early September. Larvae hatch 4 to 8 days after oviposition on buckwheat flowers and overwinter as pupae before emerging as adults the following flight season.	There are no CNDDB records for occurrences within 5 miles of the project area. In addition, the 5-Year Review for the species does not document any past occurrences of the species in Santa Cruz County. It is unknown if coast buckwheat or seacliff buckwheat are present in the project area; thus it is not known if suitable habitat is present. However, due to the restricted range, there is no potential for this species to occur in the project area. **No Potential**
Zayante band-winged grasshopper (*Trimerotropis infantilis*)	FE	This species is found in sandhill habitat in Zayante soils formations in the Santa Cruz Mountains. Suitable habitat consists of sand parkland habitat containing Ponderosa pines (*Pinus ponderosa*) with a sparsely vegetated understory containing perennial herbs and grasses, including Ben Lomond wallflower (*Erysimum teretifolium*). The flight period typically extends from May to August with a peak in June/July.	This species is restricted to sandhill habitats existing within the Zayante soils formations in northwestern Santa Cruz County. No suitable habitat is present within the project area. **No Potential**

[5] Explanation of state and federal listing codes:

Federal listing codes:
-FE: Federally Endangered Species
-FT: Federally Threatened Species

California listing codes:
-CT: State-listed as Threatened
-CE: State-listed as Endangered
-FP: Fully Protected Species
-SSC: Species of Special Concern

Species Name	Listing Status[5]	Life History	Potential to Occur
Fish			
Tidewater goby (*Eucyclogobius newberryi*)	FE SSC	This species requires brackish water habitats found in coastal estuarine habitats and prefers sandy bottoms with depths of 20 to 100 centimeters near emergent vegetation beds.	No brackish habitat is present within the project area. As a result, no suitable habitat exists for this species. **No Potential**
Steelhead Central California Coast DPS (*Oncorhynchus mykiss* spp. *irideus*)	FT SSC	This species requires cool, swift moving streams with clean, unsilted gravel beds for spawning and egg incubation. Individuals within this DPS spawn during the winter only. This species ranges from the Russian River basin south to the Aptos Creek watershed.	This species is found in the Aptos Creek watershed, including Valencia Creek, which is located approximately 0.5 mile west of the Cox-Freedom Segment. Because this feature is not crossed by the project, no suitable habitat exists. **No Potential**
Steelhead South-Central DPS (*Oncorhynchus mykiss* spp. *irideus*)	FT	This species requires cool, swift moving streams with clean, unsilted gravel beds for spawning and egg incubation. Wild-born individuals within this DPS spawn during the winter only. This DPS ranges from the Pajaro River basin south to the Santa Maria River basin.	Adults of this species are found in the Pajaro River basin, including Corralitos Creek, which is crossed by the Northern Alignment between the two poles located approximately 1,500 feet south of the Amnesti Lane/Poppy Hills Road intersection and approximately 1,050 feet north of the Corralitos Road/Skylark Lane intersection. In addition, this water body is designated as critical habitat for the species. Because Corralitos Creek is a seasonal feature and because this species runs in the winter only, there is no potential for this species to be present in the summer or fall. Very low numbers of juveniles may be present in the creek year-round near the site; however, most rearing habitat is located further upstream, outside of the project area. **High Potential – Winter/Spring Only**
Amphibians			
California tiger salamander (*Ambystoma californiense*)	FT CT	This species breeds in vernal pools and seasonal ponds, including stock ponds, but can inhabit a wide range of upland habitats, including woodlands and grasslands where dense vegetation, leaf litter, logs, and/or underground burrows large enough to provide cover exist. This species spends most of the year underground in small mammal burrows, but breeds after the first rains in late fall and early winter, when the wet season allows the salamanders to migrate up to 1 mile over several days to the nearest pond. They lay eggs in small clusters or individually, which hatch after 14 to 21 days.	The project is located at the northern extent of the historic range of the species along Monterey Bay. Two occurrences exist for this species within 5 miles of the project area, the nearest approximately 3.75 miles southwest of the intersection of Onyx Drive and Celia Drive. Both instances were recorded on the opposite side of State Route 1 and south of the project. In addition, one of these records is believed to be introduced eastern tiger salamanders (*Ambystoma tigrinum*). Hybridization with the eastern tiger salamanders has a high rate of occurrence in Monterey Bay populations. Because the species has not historically occurred in the project area (only two records have been recorded in Santa Cruz County) and limited habitat is present for the species, there is limited potential for it to occur. **Low Potential**

Species Name	Listing Status[5]	Life History	Potential to Occur
Santa Cruz long-toed salamander (*Ambystoma macrodactylum* ssp. *croceum*)	FE CE FP	This species inhabits shallow freshwater ponds and nearby woodland and coastal scrub. Breeding ponds are typically seasonal or must be free of permanent fish populations for larvae to reach adulthood. Adults migrate from upland small mammal burrows, decaying logs, or dense leaf litter during the rainy season to breed. Following breeding, they return to upland habitat, typically coastal oak woodlands. This species has been confined to ponds and wetlands in southeastern Santa Cruz County.	Several known and potential breeding ponds exist in the area. Specifically along the Northern Alignment, a confirmed breeding pond, Merk Pond, is located 0.5 mile south of the intersection of Corralitos Road and Skylark Lane. In addition, Palmer Pond, determined to support the breeding of Santa Cruz long-toed salamanders in 2004, is located near Aptos High School and within 0.25 mile east of Rob Roy Substation. Tucker Pond and Racehorse Lane Pond, both confirmed breeding ponds, are located approximately 0.9 mile from the Cox-Freedom Segment. **High Potential**
Foothill yellow-legged frog (*Rana boylii*)	SSC	This obligate aquatic species is found within, or directly adjacent to, cool stream habitats. It lays 300 to 2,000 eggs on cobblestones submerged in water between April and July. Tadpoles hatch after approximately 1 week and usually transform by October. This species has limited mobility in the summer when water levels typically decrease in riparian systems.	Known occurrences in the area include Aptos Creek, Soquel Creek, and Harkins Slough, though none of these waterbodies are crossed by any project components. There are several creeks in the project vicinity; however, no perennial flowing streams are crossed by the project. Due to the absence of suitable habitat, this species has a low to no potential to occur. **Low Potential**
California red-legged frog (*Rana draytonii*)	FT SSC	This species inhabits permanent ponds, freshwater seeps, marshes, and low-velocity streams in lowlands and foothills. It uses adjacent upland habitat for foraging and refuge during the rainy season and breeds during the wet season, from December to March. During this time, it lays 300 to 4,000 eggs in a large cluster that is attached to plants near the water surface. After about 4 weeks, the eggs hatch and metamorphose in 4 to 7 months.	Fourteen occurrences of this species have been recorded within 5 miles of the project; however, no records have been recorded within 1 mile. Suitable habitat is present in several localities in the area, typically in the form of stock ponds. Because of the agricultural nature of the surrounding area, stock ponds are fairly common, although only two are located directly adjacent to the project, approximately 1,500 feet east of the intersection of Pioneer View Road and Pioneers Road. Several additional ponds are located between 0.25 mile and 1 mile of the project, primarily between approximately 1,350 feet west of the intersection of Green Valley Road and Rancho Todos Santo Road and approximately 650 feet east of the intersection of Pleasant Valley Road and Hames Road. Protocol-level surveys conducted in 2011 at nine ponds in the area, including those previously referenced, failed to confirm the presence of this species. In addition, all of these ponds were found to contain at least two non-native species known to predate on California red-legged frogs, including bullfrogs (*Lithobates catesbeianus*), mosquito fish (*Gambusia affinis*), crayfish (*Procambarus clarkii*), and/or largemouth bass (*Micropterus salmoides*). **No Potential**

Species Name	Listing Status[5]	Life History	Potential to Occur
Reptiles			
Western pond turtle (*Actinemys marmorata*)	SSC	This species usually occurs in areas of calm freshwater environments, but can also occur in brackish and saltwater for short periods of time. It occupies a wide variety of aquatic habitats, including ponds, lakes, rivers, streams, marshes, sloughs, and wetlands. This species digs nests and occupies upland habitats in woodlands and grasslands, usually close to water. Sexual maturity is reached at a minimum of 6 years old. Approximately 5 to 13 eggs are typically laid from April through August up to 0.5 mile from water. Eggs are generally laid once per year, but can be laid twice per year in some instances.	Suitable habitat and occurrences have been recorded at Pinto Lake in Watsonville, which is located approximately 0.25 mile south of the intersection of Green Valley Road and Rancho Todos Santo Road. Marginal habitat is present along the remainder of the project, as most stock ponds are too small or seasonal to support the species. Because the project is located in marginal upland habitat, within agricultural fields or landscaped parks, there is a limited potential for this species to be present. **Low Potential**
Silvery legless lizard (*Anniella pulchra pulchra*)	SSC	This species is typically found in a wide variety of habitats with sandy or loose loamy soils. It tends to hide in leaf litter. Breeding occurs in early spring through July and eggs are laid in September through November.	Marginal habitat is present within the project area; however, no CNDDB occurrences have been documented within 5 miles of the project area. **Low Potential**
Coast horned lizard (*Phrynosoma blainvillii*)	SSC	This species tends to live in drier, warmer climates in open sandy areas with sparse vegetation. Its diet consists of small invertebrates, primarily ants. This species lays 6 to 21 eggs (average of 12) from May through June. It is able to lay two clutches a year, which hatch from August through September.	Marginal habitat is present within the project area; however, no CNDDB occurrences have been documented within 5 miles of the project area. **Low Potential**
Birds[6]			
Tricolored blackbird (*Agelaius tricolor*)	SSC (Nesting colony)	This species inhabits agricultural grain fields, ponds, sloughs, marshes, swamps, and estuaries. It nests in large dense stands of tall emergent vegetation, such as cattails (*Typhus* spp.) or tules (*Scirpus* spp.), breeding from March to June.	No suitable nesting habitat and limited suitable foraging habitat is present within the project area. **No Potential**
Golden eagle (*Aquila chrysaetos*)	FP (Nesting and Wintering)	This species is found from Mexico to Alaska. It generally occurs in the western U.S. in open country, prairies, tundra, open coniferous forest, and barren areas, especially in hilly or mountainous regions. Up to 90 percent of its prey consists of rodents and rabbits, but it also consumes other mammals, birds, amphibians, fish, and reptiles. This species typically nests in high locations. Reproduction occurs between January and September, with 43 to 45 days of egg incubation.	No CNDDB occurrences of this species have been documented within 5 miles of the project area. However, marginal foraging habitat is present within the project area in the form of grassland and agricultural fields. **Low Potential**

[6] Potential to occur for bird species reflects the potential for nesting or wintering, depending on the species' listing status, in the project.

Species Name	Listing Status[5]	Life History	Potential to Occur
Long-eared owl (*Asio otis*)	SSC (Nesting)	Long-eared owl nests in abandoned crow, hawk, or magpie nests in mature live oak and riparian woodlands in coastal and foothill areas, but also occurs in desert riparian, woodland, and oasis habitats. Dense riparian and live oak thickets near meadow edges, woodland, forest habitats, and dense conifer stands at higher elevations are often used by this species. In winter, long-eared owls can be found roosting in small groups in dense, thick groves of trees scattered throughout the desert region and occasionally along the coast or foothill region. The species nests from February to July.	No CNDDB occurrences of this species have been documented within 5 miles of the project area. Marginal nesting and suitable foraging habitat is present in the project area. **Low Potential**
Burrowing owl (*Athene cunicularia*)	SSC (Burrow sites and some wintering sites)	This species occurs in dry, open habitats such as grasslands and prairies with low-growing or no vegetation, where it occupies underground burrows, typically those of the California ground squirrel (*Spermophilus beecheyi*). It can also occur in open areas of farmland, levee banks, and other disturbed or managed habitats where burrows or burrow-like refuges, such as small-diameter pipes, rock piles with voids, or similar hollow spaces, are present. The species breeds from February 1 through August 30. Young are capable of full flight at 6 weeks of age and are fed by parents for approximately 1 year.	No CNDDB occurrences of this species have been documented within 5 miles of the project area; however, the project area is located within the winter range for the species. Burrowing owls have not been known to breed in Santa Cruz County. Marginal nesting and foraging habitat is present in the project area in the form of grasslands or other disturbed areas. **Low Potential**
Ferruginous hawk (*Buteo regalis*)	SSC (Wintering)	This species is an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges. It frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. This species forages over open, treeless areas, and hunts from high-mound perches. It generally feeds on ground squirrels, mice, birds, reptiles, and amphibians. It roosts in open areas on elevated structures, such as lone trees and utility poles. There are no breeding records in California. The species nests in foothills or prairies, on low cliffs, shrubs, trees, or in other elevated structures.	No CNDDB occurrences of this species have been documented within 5 miles of the project area. Suitable foraging habitat is present in the project area. However, this species is an uncommon winter resident in grasslands and croplands in Santa Cruz County; thus, it has a low potential to occur in the project area. **Low Potential**
Vaux's swift (*Chaetura vauxi*)	SSC (Nesting)	This species is found in the Pacific Northwest. It spends most of the day in the air foraging for insects. It nests in coniferous or mixed forest and forages in forest openings, particularly above streams. Nesting commonly occurs in hollow trees and occasionally in chimneys. The range of the species generally follows the distribution of redwood trees in California. Breeding occurs from early May to mid-August.	No CNDDB occurrences of this species have been documented within 5 miles of the project area. There is poor nesting habitat within the project area in the form of redwoods and old-growth forests. **Low Potential**

Species Name	Listing Status[5]	Life History	Potential to Occur
Northern harrier (*Circus cyaneus*)	SSC (Nesting)	This species forages over meadows, grasslands, rangelands, desert sinks, and freshwater emergent wetlands. This species nests in meadows and in both fresh and salt open marshlands. It typically nests on the ground from March through May and breeds from March to August.	No CNDDB occurrences of the species have been documented within 5 miles of the project area. Marginal nesting habitat is present in the project area. However, suitable foraging habitat is present within the project area in the form of marshes, grassland, and agricultural fields. **Low Potential**
California yellow warbler (*Dendroica petechia brewsteri*)	SSC (Nesting)	Yellow warbler is typically found in riparian or wetland areas near a source of water. This species prefers dense thickets of vegetation, such as oak woodlands, coniferous forests, willows, and cottonwoods. It is present in California from March to October. Breeding occurs from April through July. This species nests from April to August in dense, brushy riparian vegetation or shrubby montane vegetation. This species breeds in small numbers in Santa Cruz County.	No CNDDB occurrences have been documented within 5 miles of the project area. Marginal foraging habitat may be present within the project area near Corralitos Creek. **Low Potential**
White-tailed kite (*Elanus leucurus*)	FP (Nesting)	This species builds nests in the tops of dense medium- to large-sized trees located near open areas that are used for foraging. Breeding generally occurs from February through October. White-tailed kite lays three to five eggs, which it incubates for 30 to 32 days, after which fledging occurs at 5 to 6 weeks of age.	No CNDDB occurrences have been documented within 5 miles of the project area. However, suitable foraging habitat is present in the form of grassland. In addition, suitable nesting habitat may be present in groves of trees located near open agricultural fields. **Moderate Potential**
Yellow-breasted chat (*Icteria virens*)	SSC (Nesting)	Yellow-breasted chat prefers riparian habitat with a densely developed understory and an open canopy. Nesting habitat is usually restricted to the narrow border of streams, creeks, sloughs, and rivers. Common nesting habitat includes blackberry, willow, and wild grape. The species is a summer migrant, present from March to late September. Breeding occurs from late April to early August.	No CNDDB occurrences have been documented within 5 miles of the project area. This species is rare in Santa Cruz County and likely extirpated as a breeder in Santa Cruz County. Marginal nesting habitat for this species is present in the project area. **Low Potential**
Loggerhead shrike (*Lanius ludovicianus*)	SSC (Nesting)	Loggerhead shrike frequents open habitats and utilizes shrubs, trees, posts, fences, and utility lines for perches, but can occasionally be observed in urban areas. Its highest densities occur in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Nesting occurs from as early as February to July.	No CNDDB occurrences have been documented within 5 miles of the project area. This species is rare in Santa Cruz County. Marginal foraging habitat is present within the project area. **Low Potential**
Bank swallow (*Riparia riparia*)	CT (Nesting)	This neo-tropical migrant nests in California from March to August and breeds from May to July. It nests within small holes in vertical finely textured clay or sandy cliffs or banks. Typically, these nests are found alongside large riparian systems in the Sacramento Valley, although scattered populations exist along the Pacific Coast from San Mateo County to Monterey County.	The nearest known population of the species occurs along Elkhorn Slough, is approximately 6.6 miles south of the project area. No suitable breeding habitat was observed in the project area. **No Potential**

Species Name	Listing Status[5]	Life History	Potential to Occur
Mammals			
Pallid bat (*Antrozous pallidus*)	SSC	This species inhabits a wide range of habitats, including arid desert regions, oak savannah, shrub-steppe, and pine-oak woodlands; however, populations within the Monterey Bay Area typically forage along riparian systems in oak woodland or redwood forest habitat. It roosts in caves, rock crevices, mines, hollow trees, buildings, and bridges, and forages almost exclusively for insects on the ground. Breeding typically occurs from October through February, with young born from late April through July.	One occurrence of this species is known—from either Soquel Creek (approximately 5.1 miles northwest of the project area) or Uvas Creek (approximately 6.5 miles north of project area) based on conflicting records. Similar habitat to these areas occurs within the project area at riparian crossings. This includes Corralitos Creek and other unnamed waterbodies. No natural roosting habitat was observed along the project alignment; however, man-made structures such as barns and bridges are common in the surrounding area and may support roosting individuals. **Moderate Potential**
Townsend's western big-eared bat (*Corynorhinus townsendii*)	SSC	This species occurs in mesic habitats characterized by coniferous and deciduous forests, but also occupies a broad range of habitats. In California, it is known to occupy limestone caves, lava tubes, hollow trees or tree cavities, and human-made structures in coastal lowlands, cultivated valleys, and nearby hills covered with mixed vegetation.	No CNDDB occurrences of this species have been documented within 5 miles of the project area. Suitable foraging habitat for this species is present within the project area and marginal roosting habitat may be present in the forested areas in the project vicinity. **Moderate Potential**
Western red bat (*Lasiurus blossevillii*)	SSC	This species is found throughout the Central Valley and coastal California. It is associated with riparian habitats, particularly mature stands of cottonwood and sycamore, at elevations ranging from sea level to approximately 6,000 feet. It roosts primarily in trees in riparian areas that are protected from above and open below (often willows as well as cottonwoods). Breeding typically occurs from August through October, but fertilization occurs in the spring. Young require 65 days of gestation and 3 to 4 weeks of life outside the womb prior to flight.	No CNDDB occurrences of this species have been documented within 5 miles of the project area; however, riparian habitats in the project area may provide suitable roosting and foraging habitat for this species. **Moderate Potential**
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	SSC	This species lives in forest and shrub habitats. It builds large, conspicuous houses of sticks and twigs reaching up to 6 feet in height. The availability of suitably sized sticks may be a limiting factor in house number and size. The species generally breeds from February through November.	No CNDDB occurrences have been reported within 5 miles of the project area; however, during the March 2011 field survey, Insignia biologists observed two houses within the project corridor, approximately 1,350 feet northeast of the intersection of Corralitos Road and Skylark Lane. **Present**
American badger (*Taxidea taxus*)	SSC	This species requires uncultivated ground with friable soils to facilitate the digging of burrows. It prefers meadows, open forests, and grasslands, and feeds primarily on small burrowing mammals such as ground squirrels, gophers, and mice. This species breeds from late summer to early autumn and hibernates in the winter.	This species is locally rare in Santa Cruz County. One occurrence (in 1909) has been recorded in the project area. Fragmented suitable habitat exists throughout the project area in annual grassland and coastal oak woodland habitats. **Low Potential**

Sources: CDFG, 2011; CNDDB, 2011; Cornell Lab of Ornithology and National Audubon Society, Inc., 2011; Santa Cruz Bird Club, 2011; USFWS, 2011; Santa Cruz Mountains Bioregional Council, 2004; and Sibley, D.A., 2004

creek spanned by the project between the two poles located approximately 1,500 feet south of the Amnesti Lane/Poppy Hills Road intersection and approximately 1,050 feet north of the Corralitos Road/Skylark Lane intersection. The new poles located in the vicinity of Corralitos Creek will be installed approximately 300 and 100 feet from the creek, while the existing pole located approximately 50 feet from the creek will be removed. The existing and new poles are not located within the creek or the riparian corridor. Known spawning habitat exists in Corralitos Creek as well as two upstream tributaries, Brown Creek and Shingle Mill Gulch. During drought conditions and from groundwater agricultural pumping, Corralitos Creek becomes seasonal downstream of a diversion dam located just upstream of its confluence with Browns Creek (D.W. Alley & Associates 2012).

The project area spans Corralitos Creek downstream of this confluence. Because this lower segment of the mainstem of Corralitos Creek is seasonal, steelhead would only be expected to occur within the project area when water is present, typically in winter to late spring. Steelhead south-central DPS is federally listed as threatened and is a California Species of Special Concern.

Santa Cruz Long-Toed Salamander

The Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) is a small, slender salamander endemic to coastal areas along northern and central Monterey Bay. It is both federally and state-listed as endangered and is fully protected by the CDFG. This salamander inhabits upland areas and uses ponds for breeding.

Typically, Santa Cruz long-toed salamander breeding habitat is defined by seasonal or perennial freshwater ponds and sloughs, either natural or man-made, that hold water until at least May and are free of invasive predatory animals such as American bullfrogs (*Lithobates catesbeianus*), mosquito fish (*Gambusia affinis*), and other introduced fishes. Seasonal ponds and impoundments are often ideal, as they tend to lack these predators. Upland habitat typically includes small mammal burrows, tree roots, dense leaf litter, and the undersides of fallen logs in coastal oak woodlands, willow riparian woodlands and dense coastal scrub, especially on north-facing slopes. Adults typically begin their migration from upland areas to breeding ponds following the first major precipitation events of the year, typically in November or December. The majority of breeding occurs in January and February once adults have reached the ponds and a suitable amount of water is present. After mating, adults leave the pond and migrate back to the area where they over-summered the previous summer. Eggs typically hatch between 15 and 30 days after being laid, with dispersal of juvenile metamorphs occurring 90 to 145 days after hatching, depending on weather conditions. Juveniles typically do not return to breeding habitat for 2 to 3 years.

The distance that Santa Cruz long-toed salamanders may travel between ponds and over-summering areas is dependent on a number of factors including upland habitat types, presence of barriers to movement and other disturbances, and productivity of the breeding locations. Juvenile Santa Cruz long-toed salamanders have been found up to 1 mile from the site at which they were marked (Ruth 1989). Based on an analysis of the best available data on upland habitat use at Seascape Uplands (Ruth 1989), 99 percent of Santa Cruz long-toed salamander adult and juvenile activity is expected within 0.75 miles of breeding sites, at least where upland habitats are relatively undisturbed (unpublished data).

The project site is situated near the eastern and northern extent of the known range of the Santa Cruz long-toed salamander. Merk Road Pond is the easternmost known breeding site in Santa Cruz County, while Tucker Pond is the northernmost known breeding site. The Northern Alignment east of Corralitos Creek is considered to be outside the range of the subspecies.

There are four known breeding ponds within 1 mile of the project—Merk Pond, Tucker Pond, Palmer Pond, and Racehorse Lane Pond. There are several additional unnamed ponds that have not been surveyed and that are located in the Aptos area within 1 mile of the project. Merk Pond is located approximately 0.5 mile south of the Northern Alignment. It is currently the only known breeding pond east of Freedom Boulevard. A small breeding population was first identified at this location in the 1990s and studied more extensively in 2003 and 2005 (Miller 2001; Savage 2011). American bullfrogs, catfish (*Ictalaurus* spp.) and bluegill (*Lepomis macrochirus*) inhabit the pond, which greatly depresses Santa Cruz long-toed salamander breeding success (D'Amore, 2012). Much of the surrounding area between Merk Pond and the Northern Alignment is developed for either agriculture or residences.

Tucker Pond is located approximately 0.91 mile south of the Northern Alignment and 0.77 mile east of the Cox-Freedom Segment. This pond is a productive breeding site located within an area managed under the Tucker Low-Effect HCP. The distance and significant migratory obstructions or barriers—specifically Freedom Boulevard, Day Valley Road, and residential development along both of these major roads between the line and this pond—make it unlikely that significant numbers of individuals from this pond would utilize the project area as upland habitat. However, suitable upland habitats occur on both sides of Freedom Road in this area, and Santa Cruz long-toed salamander adults and post-metamorphic juveniles from the Tucker Pond may reach the project area.

Palmer Pond is a seasonal pool located adjacent to Aptos High School approximately 0.25 mile east of Rob Roy Substation. Since the time of this initial discovery in 2004, no follow-up surveys have been conducted to confirm whether a breeding population continues to use this area. It is believed that populations in this pond also utilize a nearby larger unnamed pond on private property.

Racehorse Lane Pond is a stock pond adjacent to Racehorse Lane and approximately 0.9 mile southeast of Rob Roy Substation. This pond was last confirmed to contain breeding individuals in 2008 (USFWS 2009b).

There are at least 10 other ponds in the vicinity of the project site that provide potential Santa Cruz long-toed salamander breeding habitat. Focused surveys for Santa Cruz long-toed salamander have not been conducted at any of these locations. An unnamed pond is located approximately 0.17 mile northeast of the Northern Alignment. A robust population of mosquito fish and crayfish were observed in the pond ("Pond 9") during protocol-level California red-legged frog surveys in 2011. The presence of these non-native predators greatly reduces but does not eliminate the possibility that it provides breeding habitat for Santa Cruz long-toed salamanders; if the species does use the site, the breeding population is likely depressed. Nine other ponds are located within 1 mile of the Northern Alignment and Cox-Freedom Segment. These ponds also appear to provide potential Santa Cruz long-toed salamander breeding habitat based on reconnaissance surveys and a review of aerial photographs.

Due to the presence of several known and suspected breeding ponds within 1 mile of the project area, there is a high potential for this species to utilize portions of the project area where suitable upland habitat exists. No aquatic breeding habitat is present directly within the project work areas.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) has a patchy distribution. This species is found in the Central Valley, southern coastal areas, and around the San Francisco Bay, and is rare or absent in other locations in California. White-tailed kites can also be found in southern Texas, on the Baja California peninsula, and in eastern Mexico. They were nearly extirpated in California in the 1930s and 1940s through hunting and egg collecting. Today, white-tailed kites are fully protected by the CDFG and are afforded further protection via the Migratory Bird and Treaty Act. White-tailed kites favor agricultural areas, grasslands, marshes, savannas, and other open land or sparsely wooded areas. They feed principally on rodents, and can be observed patrolling or hovering over lowland scrub or grassland. Outside the breeding season, they roost communally in groups of up to 100. During breeding season, white-tailed kites build a platform of sticks in the fork of a tree or bush. They lay three to five eggs that are incubated for 30 to 32 days, and the young kites fledge at 5 to 6 weeks of age. If prey is abundant, a second clutch of eggs may be laid. The project area is located within the range of white-tailed kites, but no CNDDB occurrences of this species have been documented within 5 miles of the project area. Suitable foraging and moderate nesting habitat are present within the project area. In addition, infrequent unconfirmed observations of white-tailed kites have been reported near Pinto Lake. Thus, this species has a moderate potential to occur in the project area.

Pallid Bat

Pallid bat (*Antrozous pallidus*) is a California Species of Special Concern that inhabits a wide range of habitats, including arid desert regions, oak savannah, shrub-steppe, and pine-oak woodlands; however, populations within the Monterey Bay area typically forage along riparian systems in oak woodland or redwood forest habitat. Pallid bat roosts are typically located in caves, rock crevices, mines, hollow trees, snags, buildings, and bridges, with breeding occurring from October through February. Maternity colonies are initiated in April. Gestation takes approximately 2 months, with birth occurring from late April through July; females typically have single births. Pups can fly at 4 to 5 weeks of age and are generally weaned in August. Suitable roosting habitat for this species is present in the project area, as old farm buildings and other structures are relatively common in the area. Two occurrences of this species have been recorded within 5 miles of the project. Thus, there is a moderate potential for this species to occur in the project area.

Townsend's Western Big-Eared Bat

Townsend's western big-eared bat (*Corynorhinus townsendii*) is a California Species of Special Concern. This species occupies a broad range of habitats, but is most commonly found in mesic habitats characterized by coniferous and deciduous forests. In California, these bats have been known to roost in the open, hanging from walls and ceilings of caves and cave-like abandoned structures, such as tree hollows, bridges, and mines. This species is highly sensitive to human disturbance. This species mates in the late fall through spring. Gestation lasts for approximately 50 to 60 days, and only one offspring is born. Males and females roost separately during the

summer, and females often form maternal colonies with numbers of up to 1,000 individuals. This species hibernates during the winter in caves or cave-like structures. Townsend's western big-eared bat live for an average of 16 years. The diet of this species consists mainly of small flying insects such as moths, beetles, and flies. The project area is located within the range for Townsend's western big-eared bat. However, no CNDDB occurrences of this species have been documented within 5 miles of the project area. Potentially suitable foraging habitat is present in the project area and marginal roosting habitat may be present in the forested areas in the project vicinity. Thus, there is a moderate potential for this species to occur in the project area.

Western Red Bat

Western red bat (*Lasiurus blossevillii*) is a California Species of Special Concern. This species has the widest distribution of any American bat, ranging from Canada, through the U.S. east and west of the Great Plains, and south to Panama and South America. In California, the red bat seasonally shifts between the Central and Sacramento Valleys during the spring and summer and the coastal region in the fall and winter (Pierson et.al 2006). Western red bats are generally found in riparian areas at mid-elevations (2,400 to 7,200 feet) in broadleaf woodlands where they roost during the day. This species is also known to roost in along rivers, and along the borders of agricultural and urban areas with mature trees. This species is nocturnal, foraging 1 or 2 hours after sunset and often hunting until sunrise. This species feeds on moths, beetles, flying ants, and occasionally crickets, and hunting is done through echolocation rather than eyesight. Western red bats usually feed near their roosts and go no farther than necessary for water. This species mates from August through October, but fertilization does not occur until spring. Gestation is approximately 65 to 80 days, and litters range from one to four pups. The young usually fly at 3 to 4 weeks of age. Adult and juvenile western red bats are generally solitary; however, individuals may form small groups during migration. The primary threats to this species include habitat loss, and herbicide and pesticide use in orchards and other agricultural areas. Predators of this species include jays, crows, kestrels, hawks, owls, snakes, rats, and cats. No CNDDB occurrences of this species have been documented within 5 miles of the project area; however, riparian habitats in the project area may provide suitable roosting and foraging habitat. Thus, there is a moderate potential for this species to occur in the project area.

San Francisco Dusky-Footed Woodrat

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) lives in forest and shrub habitats. This subspecies of woodrat is listed as a California Species of Special Concern. San Francisco dusky-footed woodrats build nests or houses out of sticks, branches, and twigs. The woodrats often collect anthropogenic litter and incorporate it into the structures as well. The houses are large (up to 6 feet tall) and contain multiple chambers. A single adult occupies individual houses, which are ecologically important because they also provide shelter to other small animals. Although there are no CNDDB occurrences for the species within 5 miles of the project area, during the March 2011 field survey, Insignia biologists observed two houses within the project corridor approximately 1,350 feet northeast of the intersection of Corralitos Road and Skylark Lane. It is unknown if the houses are currently occupied by San Francisco dusky-footed woodrats.

3.4.3.5 Critical Habitat

Designated critical habitat areas were identified based on information from the USFWS Critical Habitat Portal and the NOAA Fisheries Office of Protected Resources and are shown on Figure 3.4-2: Special-Status Species Designated Areas Map. Critical habitat for steelhead south-central DPS is crossed by the project at Corralitos Creek between the two poles located approximately 1,500 feet south of the Amnesti Lane/Poppy Hills Road intersection and approximately 1,050 feet north of the Corralitos Road/Skylark Lane intersection. In addition, a section of the Cox-Freedom Segment, between approximately 225 feet south of the McDonald Road/Ramada Lane intersection to approximately 50 feet northwest of the McDonald Road/Freedom Boulevard intersection, is located adjacent to critical habitat for Monterey spineflower. This designated area—Unit 5: Freedom Boulevard—will not be crossed by the project. Attachment 2-A: Detailed Route Maps shows the location of these poles. In addition, critical habitats for robust spineflower, steelhead central California coast DPS, and Santa Cruz tarplant are located within 1 mile of the project area, but will not be impacted by the project.

3.4.3.6 Migratory Corridors and Native Wildlife Nurseries

Corralitos Creek is a known migratory corridor and spawning area for steelhead south-central DPS. Because the segment of Corralitos Creek that is spanned by the project (between the two poles located approximately 1,500 feet south of the intersection of Amnesti Lane and Poppy Hills Road and approximately 1,050 feet north of the intersection of Corralitos Road and Skylark Lane) is seasonal, this creek would only be used by this species in the winter and spring when water is flowing. Corralitos Creek, as well as two upstream tributaries—Brown Creek and Shingle Mill Gulch—act as migratory corridors for spawning adults and juveniles migrating to the ocean. No essential steelhead nursery sites were identified within the project area. Terrestrial wildlife species also tend to travel along natural drainages that simultaneously provide protective cover from predators and a foraging source.

During the rainy season, Santa Cruz long-toed salamander adults migrate from upland small mammal burrows, decaying logs, or dense leaf litter to aquatic habitat to breed. Following breeding, they return to upland habitat. The project area may be located within upland habitat used by Santa Cruz long-toed salamander; the potential for this species to utilize habitat in the project area is being assessed by a Santa Cruz long-toed salamander expert.

The project is located in the Pacific Flyway, a major north-south avian migratory corridor that extends along the west coast from Alaska to Patagonia, and provides suitable foraging habitat for many resident and migratory avian species. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas and is therefore utilized by an abundance of bird species during migration. As part of the Pacific Flyway, the Monterey Bay area and Santa Cruz Mountains provide high-quality resting and foraging areas for numerous birds during the migratory seasons.

3.4.3.7 Aquatic Features

Aquatic features are present throughout the project area, ranging from larger creeks and streams to ponds and wetlands. The largest feature in the project area is Corralitos Creek, which is spanned between the two poles located approximately 1,500 feet south of the Amnesti Lane/Poppy Hills Road intersection and approximately 1,050 feet north of the Corralitos

Road/Skylark Lane intersection. In addition, several ponds and lakes are located near the Northern Alignment; these include Pinto Lake and College Lake, both in Watsonville. A complete inventory of aquatic features crossed by the project is included in Table 3-8.2: Hydrologic Resources Inventory in Section 3.8 Hydrology and Water Quality.

3.4.3.8 HCPs and NCCPs

No Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) is in effect for the project area. The Tucker Low-Effect HCP area is located approximately 0.75 mile from the project, as shown in Figure 3.4-2: Special-Status Species Designated Areas Map.

3.4.4 Potential Impacts and Applicant-Proposed Measures

3.4.4.1 Significance Criteria

According to Appendix G of the CEQA, the project would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP

3.4.4.2 Applicant-Proposed Measures

Implementation of the following APMs will reduce any potential impacts to biological resources to a less-than-significant level or further reduce already less-than-significant impacts. Specifically, the APMs have been designed to minimize or eliminate potential impacts to special-status plant and wildlife species present in the surrounding area, as well as to more common native wildlife species. Specific implementation of these APMs is discussed with each applicable impact, as related to the CEQA checklist questions addressed in the sections that follow.

Figure 3.4-2: Special-Status Species Designated Areas Map

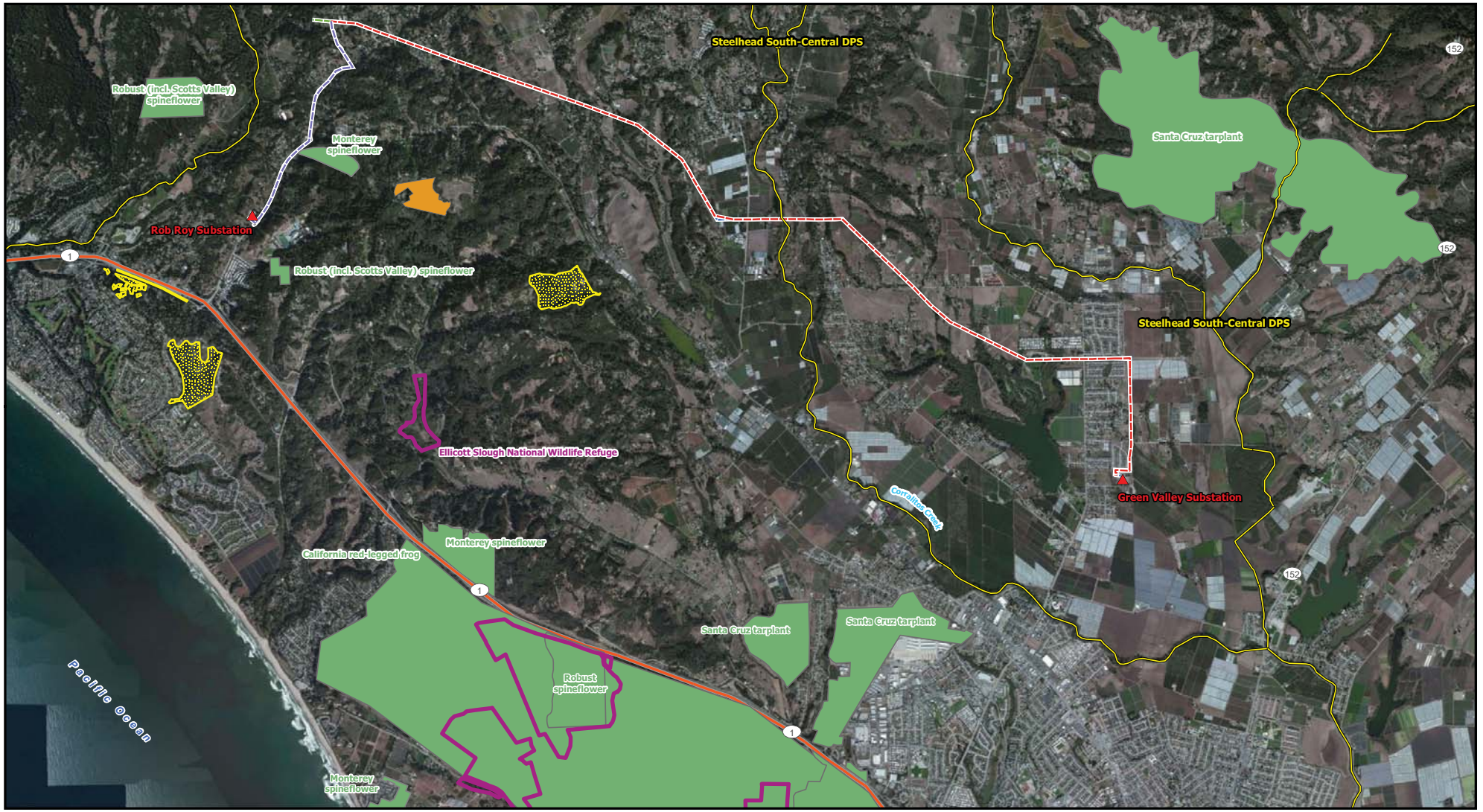


Figure 3.4-2: Special-Status Species Designated Areas Map

Santa Cruz 115 kV Reinforcement Project

- Existing Substation
- Northern Alignment
- Cox-Freedom Segment
- Existing 115 kV Power Line
- California Department of Fish and Game-Managed Land
- United States Fish and Wildlife Service-Managed Land
- Tucker Pond Habitat Conservation Plan Boundary
- United States Fish and Wildlife Service-Designated Critical Habitat
- National Oceanic Atmospheric Administration-Designated Critical Habitat

Pacific Gas and Electric Company

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1/17/2012

APM BIO-01. Confinement of Work Activities and Access to Designated Areas Only.

All project vehicular movement will be restricted to existing access roads, temporary access roads constructed as a part of the project, designated overland routes, approved temporary work areas, and existing permanent work areas. All approved access roads, access routes, and work areas will be located in advance of construction to the extent possible, and will be marked in sensitive areas except when not feasible due to physical or safety constraints. Construction personnel and equipment will be confined to these delineated work areas, access roads, and access routes. Vehicle travel to each construction site will be limited to the minimum number of trips and vehicles necessary to perform work safely. If new access routes or work areas are needed in biologically sensitive areas, they will be surveyed first by a qualified biologist to ensure that no special-status species or sensitive habitat is present. Approval from a qualified biologist will be obtained prior to any travel off of approved routes or work areas in biologically sensitive areas.

APM BIO-02. Minimization of Vegetation Clearing.

Vegetation-clearing (i.e., tree removal, tree trimming, and understory vegetation removal) will be confined to the minimal amount necessary to safely facilitate work. Pre-construction surveys will be performed prior to vegetation-clearing activities, and as feasible, those activities will be planned to avoid sensitive periods for special-status species.

APM BIO-03. Site Restoration and Revegetation.

The existing conditions of work areas and overland travel routes will be documented by a qualified biologist before construction begins, and these areas will be returned to pre-existing contours and conditions following construction. A Revegetation and Monitoring Plan will be developed; this plan will describe which vegetation restoration method (i.e., natural revegetation, re-seeding with native seed stock, or reseeding in compliance with the project's Stormwater Pollution Prevention Plan [SWPPP]) will be implemented in the project area. The Revegetation and Monitoring Plan will include additional measures for areas that support sensitive habitat (coastal scrub) and/or special-status plant populations, as discussed in APM BIO-04 and APM BIO-22. This plan will also include measures to control highly invasive weed species.

APM BIO-04. Avoidance and Minimization of Impacts to Special-Status Plant Populations.

During the appropriate phenological periods, pre-construction rare plant surveys will be conducted in areas where either special-status plants were previously identified or have the potential of occurring within work areas. Agricultural fields and developed areas will not be surveyed due to the lack of suitable habitat for supporting rare plant species. Prior to construction, the boundaries of all special-status plant populations will be delineated with clearly visible flagging, fencing, or other suitable means of marking the area for avoidance. This boundary will be maintained during work at these locations, and these areas will be avoided during all construction activities to the extent possible. Where these areas will be disturbed, additional measures will be implemented. PG&E will develop and implement a Revegetation and Monitoring Plan, as described in APM BIO-03, which will include measures for special-status plant species that may be impacted by project construction. This plan will include specific measures for Monterey spineflower, which will be impacted by project activities, as well as

general measures in the event that other special-status plant species are encountered prior to or during project construction.

APM BIO-05. Conduct Environmental Training for All Crewmembers.

A qualified biologist will develop an environmental training program, and an environmental representative will present the training to all crew members before they begin work on the project. The training will describe special-status species and sensitive habitats that could occur within the project area, protection afforded these species, and the avoidance and minimization measures necessary to avoid/minimize impacts. Penalties for violations of environmental laws will also be incorporated into the training session. Each crewmember will be provided with an informational training handout and a decal to indicate that he/she has attended the training.

APM BIO-06. Avoidance of Burrows On Site.

To the maximum extent feasible, burrows will be avoided.

APM BIO-07. Work During Daytime Hours.

Work will be conducted between sunrise and sunset in areas with suitable upland habitat for Santa Cruz long-toed salamander, unless approved by a qualified biologist or required due to an emergency situation. Suitable upland habitat includes areas with small mammal burrows, tree roots, dense leaf litter, and fallen logs in coastal oak woodlands, willow riparian woodlands and dense coastal scrub (especially on north-facing slopes) within 1 mile of known and potential breeding ponds for Santa Cruz long-toed salamander.

APM BIO-08. On-Site Biological Monitoring.

Under the direction of the PG&E Project Biologist, a qualified biologist will be present at all active construction areas in biologically sensitive areas.

APM BIO-09. Special-Status Wildlife in the Project Area.

If a special-status species is observed on site, crews will immediately stop work when it is safe to do so and will contact the qualified biologist. Crews will not be permitted to touch, handle, or relocate special-status wildlife. A communication protocol will be developed and provided to all project personnel to guide the special-status species reporting. If a biological monitor is not in the immediate area to document the resource observation, crews will immediately contact the Environmental Compliance Manager and the PG&E Project Biologist.

APM BIO-10. Construction Site Speed Limits.

When safe to do so, a speed limit of 15 miles per hour will be observed on unpaved access routes, and crews will maintain awareness for wildlife in the roadway. Travel on paved roadways will be conducted according to established speed limits or as safety allows.

APM BIO-11. Minimization of Impacts to Santa Cruz Long-Toed Salamander.

PG&E is consulting with a Santa Cruz long-toed salamander expert to develop measures for avoiding impacts to this species. PG&E expects to provide an updated measure in February of 2012.

APM BIO-12. Nesting Bird Surveys.

If work is scheduled to occur during the avian nesting season (February through August), active work areas will be surveyed by a qualified biologist within 15 days before work begins in those areas to determine if any nesting birds are present. Exclusionary buffer zones will be established by a qualified biologist around any active nests within the project area. Typical exclusionary buffer zones will be 250 feet for raptors and a minimum of 50 feet for non-raptors; however, the size of the buffer zone may also be modified at the discretion of the biologist based on the following factors: 1) the species' sensitivity to disturbance, 2) the topography surrounding the nest site, and 3) its concealment from project activities. In addition to exclusionary buffers, helicopters will not be permitted to hover over active nests, regardless of height. If construction activities are required within an exclusionary buffer zone, the nest will be monitored for disturbance by a qualified biologist until the young have fledged and are independent of the adults. Nest disturbance will be assessed based on behavioral cues such as time off the nest, hesitation approaching the nest, and incessant chattering and bill swiping, among other indications. All potential sources of nest disturbance, including non-construction activities, will be assessed and documented. If no nest disturbance is observed, work may continue. If the biologist determines that activities are causing nest disturbance, work will not be allowed to continue within the buffer zone until the young have fledged. In the event of an unforeseen circumstance regarding avian species, the PG&E Avian Protection Plan Manager will be consulted.

APM BIO-13. Raptor Protection Standards for New Poles.

The majority of the project has been designed to conform to the suggested guidelines in the following documents:

- Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 – Avian Power Line Interaction Committee (APLIC), 1994
- Avian Protection Plan Guidelines – APLIC and U.S. Fish and Wildlife Service, April 2005
- Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 – APLIC, 2006

The project's final design and installation will reflect these suggested guidelines; however, no 115 kV insulators have been manufactured that meet the recommended 71-inch horizontal phase to ground clearance guideline. As a result, the project will not conform to this suggested guideline.

APM BIO-14. Pre-construction Surveys for Special-Status Wildlife.

Pre-construction surveys for special-status wildlife species will be conducted by a qualified biologist at all work areas within 2 weeks or as appropriate for species requiring survey methods during specific seasons before construction begins at those work areas. If a special-status species is encountered, PG&E will avoid the species. If a special-status species cannot be avoided, the appropriate agency or agencies will be notified.

APM BIO-15. Avoidance of Roosting Bats.

When feasible, tree-trimming and tree-removal activities will be conducted during warmer periods, outside of the bat breeding season, in the presence of a qualified biologist. If vegetation-removal activities will be conducted during the bat breeding season, a habitat evaluation of those areas will be performed to assess the habitat's potential to support sensitive bat species. As necessary, an exclusionary buffer around active roost features will be maintained during project activities; the size of the buffer zone may be modified at the discretion of the qualified biologist based on the species' sensitivity to disturbance. A qualified biologist will monitor roost site exclusion zones during project activities to determine if roosting activity is influenced by noise or other activities and to determine when young bats are able to fly from the roost. Exclusion buffers may be removed after a qualified biologist has determined that bats have vacated the occupied roost sites. If project activities cannot avoid directly impacting active colonial roost sites, PG&E will contact the CDFG to discuss implementing alternative measures.

APM BIO-16. Avoidance and Minimization of Impacts to San Francisco Dusky-Footed Woodrat.

During the pre-construction surveys, described in APM BIO-14, a qualified biologist will identify potential San Francisco dusky-footed woodrat houses within 50 feet of project activities. At the discretion of a qualified biologist, an exclusion buffer will be established around any woodrat houses that can be avoided, and these exclusion zones will be flagged or fenced. If impacts to a woodrat house are unavoidable, PG&E will work with a qualified biologist to develop a Woodrat Trapping and Relocation Plan, and will coordinate with the CDFG to handle and relocate the San Francisco dusky-footed woodrats.

APM BIO-17. Protection and Inspection of Open Excavations for Entrapped Wildlife.

Excavations that may act as pitfall traps (i.e., those exceeding 6 inches in depth) will be securely fenced or covered. In biologically sensitive areas, the fences around excavations will provide one-way passage for small animals to exit the immediate work area in the event they are encountered. Covers will be strong enough to prevent wildlife from falling into the excavations and will be secured to prevent burrowing underneath the covers. Existing pole excavations will be inspected before they are filled to ensure the absence of wildlife. If a special-status species is located in the excavation or an area of impact and cannot escape, the species will be avoided. Project activities in the immediate work area will cease and the CDFG and/or USFWS (as appropriate, depending on the species listing status) will be contacted.

APM BIO-18. Inspection of Construction Materials for Wildlife.

Before being moved, all poles and similar construction materials stored overnight at the construction site will be thoroughly inspected for animals. If special-status species are observed within poles or similar construction materials, they will be avoided and allowed to leave of their own volition.

APM BIO-19. Banning of Pets in the Project Area.

Crewmembers and project personnel will not be allowed to bring pets to the project area.

APM BIO-20. Banning of Firearms in the Project Area.

Firearms will be prohibited in all work areas, unless carried by authorized security personnel.

APM BIO-21. Garbage and Trash Management.

Littering will be prohibited. Food-related garbage and trash will be enclosed in covered containers and removed from the project area daily. Storage yards, contractor yards, and other non-temporary work areas may use centralized areas to aggregate and store wastes. Covered, water-tight waste bins will be required for permanent stored wastes. Stored waste containers will be emptied once a week at a minimum.

APM BIO-22. Avoidance and Minimization of Impacts to Sensitive Vegetation (Coastal Scrub).

Before construction begins, the boundaries of coastal scrub that can be avoided will be delineated with clearly visible flagging or fencing, or otherwise marked for avoidance. Alternatively, the project access/work areas near coastal scrub vegetation that can be avoided will be marked. The flagging, fencing, and/or other marking will be maintained in place for the duration of construction at each location until work is completed at that site, and these areas will be avoided to the maximum extent practical. Where feasible, measures in the Revegetation and Monitoring Plan, described in APM BIO-03, will be implemented to revegetate areas of coastal scrub vegetation that will be disturbed during construction activities.

3.4.4.3 Question 3.4a – 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 CDFG or USFWS?

Construction – Less-than-Significant Impact

Construction of the project has the potential to cause temporary as well as minor permanent impacts to these vegetation communities, primarily through vegetation removal or disturbance from construction activities. These impacts have the potential to result in direct or indirect impacts to special-status plant and wildlife species. Another potential impact to vegetation communities includes the introduction or spread of noxious weeds, which often out-compete native species and cause declines in native plant populations. Project construction and the associated new ROWs will result in a maximum of 16.5 acres[7] of impacts to natural vegetation communities throughout the project area, as shown in Table 3.4-3: Vegetation Impacts.

Approximately 14.5 acres[8] of vegetation impacts will be temporary and that area will be allowed to revegetate after construction is completed. A maximum of 2.0 acres[9] of permanent vegetation impacts are anticipated, resulting from newly installed facilities as shown in Table 3.4-3:

[7] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.
[8] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.
[9] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.

Vegetation Impacts. The temporary impacts will primarily occur within pole work areas, pull sites, landing zones, and along overland access routes where existing vegetation will need to be mowed so that a suitable work space can be created. In some areas, grading may be required so that a safe and level work space for equipment can be established. Permanent vegetation impacts will typically occur within the footprints of new poles, as well as within the Rob Roy Substation modification area. In addition, permanent vegetation impacts will occur as a result of the removal of trees within the expanded permanent ROW and the removal of hazard trees outside of the permanent ROW.

Table 3.4-3: Vegetation Impacts

Natural Vegetation Community	Approximate Temporary Impacts (acres)	Approximate Permanent Impacts (acres)
Coastal Oak Woodland	1.5	0.5
Coastal Scrub	0.5	0.5
Mixed Chaparral	3.5	0.5
Coastal Riparian	0.0	0.0
Annual Grassland	8.5	0.5
Perennial Grassland	0.0	0.0
Fresh Emergent Wetland	0.0	0.0
Non-Native Woodland	0.5	0.0
Lacustrine	0.0	0.0
Total	**14.5**	**2.0**

Note: Temporary impacts were determined by calculating the approximate temporary and permanent impact acreage based on GIS data and rounding up to the nearest 0.5 acre to accommodate changes that may occur during the design process.

To ensure that vegetation impacts do not exceed these estimates, all work activities, access routes, and laydown areas will be clearly delineated in the field to prevent crewmembers from utilizing areas outside of designated work space, as described in APM BIO-01. During construction, PG&E will minimize vegetation removal where feasible, as described in APM BIO-02. As described in APM BIO-03, PG&E will develop and implement a Revegetation and Monitoring Plan for vegetation communities that may be impacted by construction activities. This plan will also include measures to control highly invasive weed species. In addition, disturbed areas will be returned to pre-existing contours and conditions, as described in APM BIO-03.

Aquatic Species

One special-status aquatic species, steelhead south-central DPS, has a high potential to occur within the project area. Because project access will be routed around Corralitos Creek, and all new poles will be placed outside the creek, no temporary or permanent impacts to steelhead south-central DPS as a result of construction will occur. The powerline will span the creek, and there will be no impacts to the creek or the riparian corridor surrounding the creek. To prevent direct and/or indirect impacts that may result from degradation of water quality or disruption of water flow, PG&E will implement the best management practices (BMPs) outlined in the

project's SWPPP to prevent construction materials from entering Corralitos Creek. With implementation of the SWPPP, no impacts to steelhead south-central DPS will occur.

Plant Species

One special-status plant species—Monterey spineflower—is present in the project area, and two special-status plant species—robust spineflower and Gairdner's yampah—have a high potential to occur in the project area. The primary construction-related direct impact to rare plants is take of individuals as a result of crushing or trampling during vegetation clearing, minor grading, pole installation, pole removal, or overland vehicle travel; these activities will be required within pole work areas, pull sites, and along access roads and overland routes. Grading or other heavy disturbance also has the potential to bury or otherwise remove topsoil, which may contain viable seeds of special-status species or may otherwise destroy habitat. Another potential impact to sensitive plants includes the introduction or spread of noxious weeds, which often out-compete native species and cause declines in native plant populations. Measures to control highly invasive weed species will be included in a Revegetation and Monitoring Plan, which PG&E will develop in accordance with APM BIO-03.

One potential population of Gairdner's yampah was identified during the 2011 rare plant surveys between the intersection of Aldridge Lane and Blake Avenue and approximately 1,950 feet southwest of the intersection of Hames Hollow and Hames Road. However, because this population is not located within any project work areas, no impacts are anticipated. If this population is positively identified as Gairdner's yampah, it will be mapped during pre-construction surveys, as described in APM BIO-04, to ensure that it has not shifted into construction work areas. If necessary, the population will be delineated by fencing, flagging, or other feasible methods of marking the area, and will be avoided. In specific areas where avoidance is not feasible, PG&E will implement additional measures that will be described in a Revegetation and Monitoring Plan, which PG&E will develop in accordance with APM BIO-04. No further action will be required if subsequent studies determine that these plants are not Gairdner's yampah.

Based on rare plant surveys conducted in 2011, only one target special-status plant species, Monterey spineflower, was positively identified within the project work areas. Specifically, single plants or populations were identified within work areas at the southern end of the Cox-Freedom Segment, at the western end of the Northern Alignment, and at the approximate halfway point of the Northern Alignment. Work within these areas may temporarily disturb up to 1 acre[10] of presently occupied Monterey spineflower habitat. Because Monterey spineflower is an annual species (senescence typically occurs in August or September), plants are only anticipated to be vegetative during the spring and summer.

As described in APM BIO-04, impacts to Monterey spineflower and other special-status plants will be reduced by installing exclusionary flagging, fencing, or other feasible delineation methods around known populations or by marking work areas near the plants before construction begins. As described in APM BIO-05, crews will be trained to recognize and avoid exclusion

[10] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.

areas around populations of special-status plants. In specific areas where avoidance is not feasible, PG&E will implement additional measures that will be described in a Revegetation and Monitoring Plan, which PG&E will develop in accordance with APM BIO-03.

Monterey spineflower is known to benefit, to some degree, from minor ground or vegetation disturbance that inhibits or removes competing plant species without burying the existing seed bank. As a result, vegetation clearing or minor grading for work areas or access roads and overland routes that does not result in take of vegetative individuals may in fact promote germination and recruitment in future seasons, a temporary indirect benefit. In addition, vegetation clearing will reduce shading, which is a major limiting factor for Monterey spineflower, and may also promote future germination. Populations of Monterey spineflower identified in 2011 were commonly found in areas that had been mowed. Through the implementation of APM BIO-03, APM BIO-04, and APM BIO-05, impacts to special-status plant species are anticipated to be less than significant. Permanent impacts to Monterey spineflower are anticipated to be less than significant because less than 0.1 acre[11] of currently occupied habitat will be permanently disturbed.

Amphibian Species

One special-status amphibian species, Santa Cruz long-toed salamander, has the potential to occur within portions of the project area. Construction activities within 1 mile of four known Santa Cruz long-toed salamander aquatic breeding sites—Merk Pond, Tucker Pond, Palmer Pond, and Racehorse Lane Pond, as well as 10 other potential breeding sites—and 10 other potential aquatic breeding sites have the potential to cause a temporary direct impact to upland habitat where suitable vegetation exists (mainly coastal oak woodland, coastal scrub, and mixed chaparral communities that contain small mammal burrows or other suitable refuge features). These temporary construction-related direct impacts may result from activities that crush or otherwise take individuals in upland habitat; these activities include vegetation clearing, minor grading, pole installation, pole removal, and vehicle travel, which will be required within pole work areas, pull sites, and along access roads and overland routes. These activities may also result in similar impacts to suitable but unoccupied upland habitat. Temporary direct impacts to upland habitat within 1 mile of Tucker Pond, Racehorse Lane Pond, Palmer Pond, and Merk Pond include pole installation, overland access, and possibly minor grading. These impacts may be minimal because these ponds are all located more than 0.5 mile from the project and are separated by agricultural fields, residential developments, major roads, and other types of development that reduce habitat connectivity. Temporary direct impacts to upland habitat surrounding Palmer Pond, approximately 0.25 mile east of Rob Roy Substation, and unsurveyed ponds have the potential to result from pole excavations, minor grading, vegetation removal, or other ground-disturbing activities. These impacts are anticipated to be less than significant when compared to the overall available upland habitat in the surrounding area, as they will be limited to small areas. In addition, work areas near Palmer Pond and other features near the unincorporated community of Aptos will primarily be located along Freedom Boulevard and the perimeter of the Rob Roy Substation fence, and will take place from paved surfaces in most instances.

[11] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.

To minimize potential temporary direct and indirect impacts to Santa Cruz long-toed salamander, all burrows will be avoided on site to the maximum extent feasible, as described in APM BIO-06, and work will be limited to daytime hours in areas with suitable upland habitat for Santa Cruz long-toed salamander, as described in APM BIO-07. A qualified biologist will also be present during all work activities in biologically sensitive areas, as described in APM BIO-08. In addition, before starting work, all crewmembers will attend an environmental awareness training that will explain the intent behind each APM to reduce impacts during project construction, as described in APM BIO-05. The training will include a description of the special-status species with potential to occur in the project area, including the Santa Cruz long-toed salamander, and a discussion of APM BIO-09, which directs the crews to stop work and contact the biological monitor if a special-status species is observed. In addition, all crews will be confined to designated project work areas, access roads, and overland routes, and vehicles will be limited to a maximum speed of 15 miles per hour or slower on unpaved or overland access routes, as described in APM BIO-01 and APM BIO-10, respectively. In addition, PG&E is consulting with a Santa Cruz long-toed salamander expert to develop measures to avoid impacts to this species, as described in APM BIO-11. Through implementation of these measures, impacts to Santa Cruz long-toed salamander are anticipated to be less-than-significant.

No significant permanent direct or indirect impacts to Santa Cruz long-toed salamander are anticipated, as the loss of upland habitat resulting from the Rob Roy Substation Modification and the installation of larger poles are anticipated to be negligible when compared to available habitat in the surrounding area, and all temporary project access routes will be restored to near pre-project conditions.

Avian Species

Impacts to nesting special-status avian species, such as white-tailed kite, may occur as a result of project construction. Direct impacts to nesting birds may result from destruction or abandonment of active nests as a result of vegetation removal or from increased disturbance resulting from construction activities and noise. In particular, disturbance may result from the use of helicopters to deliver or install poles. These impacts will be most significant during the nesting season, generally mid-February to August. PG&E will reduce impacts to nesting birds by implementing no-work buffers as appropriate for particular nesting species, by limiting work in close proximity of active nests until after the chicks have fledged, and by conducting pre-construction nesting surveys, as described in APM BIO-12. Minimal direct impacts to nesting habitat are anticipated because the project is primarily located within existing ROWs that have been subjected to regular vegetation management.

Direct mortality of avian species may also result from collisions with the conductor and from electrocution. Bird collisions with existing transmission facilities typically occur to migratory bird species and are generally due to poor visibility of electrical lines. Most bird electrocutions occur on distribution systems at lower voltages due to the closer spacing between conductors. The closer spacing is more of a potential hazard to raptors and other large birds because their body size and wingspan are large enough to span the distance between the wires, completing the electrical circuit. PG&E plans to incorporate avian protection measures into the project's engineering design through the implementation of APM BIO-13, which ensures that PG&E's facilities are in compliance with PG&E's Avian Protection Plan to the extent feasible.

Power lines and other structures also provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. In areas where current perching sites are few or rare, the construction of a new power line may increase the potential for raptors perching, and thus predation opportunities in the area. Due to the prevalence of trees and other perching structures in the area, construction of the project is anticipated to have less-than-significant impacts on potential increased predation of smaller wildlife species.

Mammal Species

Three special-status bat species—pallid bat, western red bat, and Townsend's big-eared bat—have a moderate potential to occur in the project area. Impacts to bat foraging or movement are anticipated to be minimal. Direct impacts to pallid bats, western red bats, or Townsend's big-eared bats may occur if construction activities result in the disruption or abandonment of nearby active bat roosts. No bat roosts have been identified in the project area to date; however, focused bat surveys have not been conducted, and roosts may become established prior to the start of construction. As described in APM BIO-14, to determine whether active bat roosts are present in the project area, PG&E will conduct pre-construction wildlife surveys to identify any roosts or other wildlife. If active bat roosts are identified within the project area, appropriate exclusionary buffers will be established to minimize disturbance from construction activities, as described in APM BIO-15. For active roosts, PG&E will maintain an exclusion buffer. If it is determined that direct impacts to a colonial roost cannot be avoided, PG&E will coordinate with the CDFG as appropriate.

Another special-status mammal species, San Francisco dusky-footed woodrat, was found to be present within the project area. Impacts to San Francisco dusky-footed woodrat could occur through habitat removal or direct mortality if nests are impacted or destroyed by construction activities. To avoid impacts to this species, PG&E will implement APM BIO-16, which specifies that a qualified biologist will identify all San Francisco dusky-footed woodrat houses before construction begins. The nests will be flagged and avoided; if this is not possible, PG&E will coordinate with the CDFG regarding appropriate measures for this species. PG&E will also implement APMs BIO-05, BIO-08, BIO-09, BIO-10, and BIO-14 to reduce the risk of take of the species and disturbance to the species habitat. These measures include, but are not limited to, an environmental training for construction personnel, pre-construction surveys, ensuring that a qualified biologist is present for work in sensitive areas, restricting vehicle speeds on overland access routes, and stopping work if a special-status species is observed on site. With implementation of these APMs, impacts to San Francisco dusky-footed woodrat will be less than significant.

In addition to special-status species, other local wildlife species have the potential to be impacted by construction of the project. Direct impacts to wildlife may include mortality from vehicle collisions, vegetation removal, or possible entrapment. To ensure that wildlife does not become trapped in excavations or construction materials, PG&E will implement APM BIO-17 and APM BIO-18, which include covering or securing open trenches and excavations and inspecting construction materials for local wildlife. Additional wildlife protection measures will include banning pets and firearms from the project area, and securing and/or removing garbage from the project site to reduce the attraction of mammal scavengers, as described in APMs BIO-19, BIO-20, and BIO-21.

Operation and Maintenance – No Impact

O&M work will be conducted periodically, and will not differ significantly from existing O&M activities; therefore, no new impacts to these species are anticipated.

3.4.4.4 Question 3.4b – 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 CDFG or USFWS?

Construction – Less-than-Significant Impact

Based on the field surveys conducted in 2010 and 2011, one sensitive habitat type, coastal scrub, was found to occur within the work areas. Policy 5.1.2 of the Conservation and Open Space Element of the Santa Cruz County General Plan defines coastal scrub as a sensitive habitat. Up to 0.5 acre[12] of coastal scrub will be temporarily impacted during construction, and a maximum of 0.5 acre[13] will be permanently impacted. These acreages are included in Table 3.4-3: Vegetation Impacts. The temporary impacts will primarily occur within pole work areas, pull sites, landing zones, and along overland access routes where existing vegetation will need to be mowed so that a suitable work space can be created.

As described in APM BIO-22, impacts to coastal scrub will be reduced by delineating the portions of this habitat that can be avoided with clearly visible flagging, fencing, or other marking. Alternatively, the project access/work areas near coastal scrub vegetation that can be avoided will be marked. The flagging, fencing, or marking will be maintained in place for the duration of construction at each site, and the areas will be avoided to the maximum extent practical during all construction activities. In specific areas where coastal scrub will be disturbed, additional measures will be implemented in accordance with a Revegetation and Monitoring Plan, as described in APM BIO-03.

As described in APM BIO-01, construction personnel and equipment will be confined to approved work areas, access roads, and access routes, and approval from a qualified biologist will be obtained prior to any travel off the approved routes or work areas in biologically sensitive areas. Through APM BIO-05, crews will also be trained to recognize and avoid exclusion areas and sensitive habitats.

No other sensitive habitats, as described by the CNDDB or local ordinances, are present within the project area. Several riparian systems are crossed by the project; however, no work within or immediately adjacent to riparian systems is anticipated. Through the implementation of APMs BIO-01, BIO-03, BIO-05, and BIO-22, impacts to sensitive habitats are anticipated to be less than significant.

[12] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.

[13] All impact numbers are approximate and have been rounded up to accommodate changes that may occur during the final design.

Operation and Maintenance – No Impact

O&M activities do not significantly differ from activities currently being performed on the existing lines. Therefore, no new impacts to sensitive habitats or riparian systems are anticipated as a result of O&M.

3.4.4.5 Question 3.4c – 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?

Construction – No Impact

No direct impacts to wetlands or waterways are anticipated as a result of the project. Freshwater emergent wetlands and drainage systems are located in close proximity to several poles—including the poles located at approximately 650 feet northeast of the Lapus Drive/Paulsen Road intersection, 600 feet southeast of the Littleway Lane/Cunningham Way intersection, and 2,150 feet east of the Mountain View Road/Linden Road intersection, and from approximately 1,700 feet northeast of the Mountain View Road/Linden Road intersection to 1,000 feet east of the Pioneer View Road/Pioneers Road intersection. Attachment 2-A Detailed Route Maps in Chapter 2 – Project Description shows the location of these poles. However, impacts to drainages and other features have been avoided by routing access roads and overland routes around and delineating work area boundaries outside of aquatic resources. Potential indirect construction-related impacts to aquatic resources are addressed in Section 3.8 Hydrology and Water Quality. PG&E will minimize indirect and direct impacts to aquatic resources by implementing a SWPPP to prevent the introduction of construction materials into such features. As a result, no impacts are anticipated.

Operation and Maintenance – No Impact

Current O&M activities will not result in impacts to wetlands or waterways. In addition, no poles are being installed within wetlands or waterways. Because O&M of the new line will not significantly differ from activities currently being performed, no new impacts to aquatic resources are anticipated as a result of O&M of the project.

3.4.4.6 Question 3.4d – 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?

Construction – No Impact

Although the project is located along the Pacific Flyway, the flyway encompasses the majority of the state of California. There are no preserve areas inside the project area and the avian migration routes associated with the Pacific Flyway are not anticipated to sustain impacts as a result of the project activities.

Corralitos Creek was identified as a migratory corridor for steelhead south-central DPS. No work is anticipated within the bed or bank of the creek, and no project access will be needed within the creek. PG&E will implement the BMPs specified in the project's SWPPP to ensure that no

sediment, hazardous materials, or other materials that may degrade water quality or clarity enter the creek, as described in Section 3.8 Hydrology and Water Quality. The new poles located in the vicinity of Corralitos Creek will be installed approximately 300 and 100 feet from the creek, while the existing pole located approximately 50 feet from the creek will be removed. Because work will not occur within the bed or bank of the creek, there will be no impact to Corralitos Creek or to steelhead south-central DPS as a result of the project. In addition, with implementation of the SWPPP, no impacts to migrating steelhead will occur.

Santa Cruz long-toed salamander may migrate through or into the project area. The potential for migrating Santa Cruz long-toed salamander will be assessed by an expert in accordance with APM BIO-11. Work within terrestrial wildlife migration corridors could potentially temporarily diminish the quality of wildlife movement corridors within the project area for terrestrial species. However, impacts to terrestrial wildlife migration corridors will be temporary and the implementation of avoidance and mitigation measures described in Section 3.4.4.2 Applicant-Proposed Measures should reduce any potential impacts to migration corridors to a less-than-significant level.

Operation and Maintenance – No Impact

No proposed poles or access routes are located within the bed or bank of Corralitos Creek. As a result, O&M activities are not anticipated to impact migratory steelhead south-central DPS. In addition, the new poles located in the vicinity of Corralitos Creek will be installed approximately 300 and 100 feet from the creek, while the existing pole installed approximately 50 feet from the creek will be removed. Thus, compared to the existing configuration, an overall reduction in potential risk to the creek will occur as a result of the project.

3.4.4.7 Question 3.4e – Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction – No Impact

Construction of the project, while not subject to local regulations, will not conflict with any environmental plans, policies, or regulations adopted by agencies with jurisdiction over local land uses, including the Santa Cruz County General Plan.

The Conservation and Open Space Element of the Santa Cruz County General Plan contains directives to protect, manage, and enhance the County's sensitive habitats and diverse biological communities—particularly areas that provide habitat for locally unique biotic species/communities; areas adjacent to essential habitats of rare, endangered, or threatened species; areas that provide habitat for Species of Special Concern as listed by the CDFG; aquatic resources; and riparian corridors. The guidelines to protect sensitive habitats, as described in Policy 5.1.7, will be implemented, where applicable to the project. Consistent with these guidelines, APM BIO-01 and APM BIO-02 have been designed to reduce the impacts to native and natural vegetation communities to the minimum amount necessary. The project has also avoided placing poles near sensitive resources, and in some instances will relocate new poles farther from resources than the nearby existing poles. A complete list of local policies is provided in Attachment 3.2-A: Policies Consistency Analysis of Section 3.2 Agriculture and

Forestry, Land Use and Planning, and Recreational Resources. As stated in these sections, no conflicts with local policies or ordinances are anticipated as a result of the project.

Operation and Maintenance – No Impact

O&M of the project does not currently conflict with the Santa Cruz County General Plan or any other local policies or regulations. Because future O&M of the project is anticipated to be similar to current O&M activities, no impacts are anticipated as a result of the O&M of the project.

3.4.4.8 Question 3.4f – 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

Construction and O&M of the project will not occur within or impact any nearby HCP or NCCP areas (the nearest being the Tucker Low-Effect HCP area) in the project vicinity. No other local, regional, state, or federal HCPs are in effect in the area. As a result, no impacts to areas under a local, regional, state, or federal HCP will occur as a result of the project.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant 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 § 15064.5?			✓	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			✓	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	
d) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

3.5.1 Introduction

This section describes the existing cultural and paleontological resources in the vicinity of the project and evaluates potential impacts that may result from construction and operation and maintenance (O&M) of the project. With the implementation of applicant-proposed measures (APMs), potential project impacts to cultural and paleontological resources will be less than significant.

3.5.2 Methodology

The study area includes a 200-foot-wide survey corridor along the entire length of the approximately 7.1-mile-long Northern Alignment and approximately 1.7-mile-long Cox-Freedom Segment, as well as access roads, pull sites, landing zones, other work and contractor storage areas, and the approximately 0.3-acre Rob Roy Substation modification area. The vertical study area is assumed to be at a maximum depth of approximately 33 feet in areas where new tubular steel poles (TSPs) will be installed. Based upon preliminary engineering, TSPs will be installed at each of the 72 pole installation locations along the Northern Alignment, approximately 4 locations along the Cox-Freedom Segment, and approximately 3 locations along the Rob Roy Substation Connections. The vertical study area is assumed to be at a maximum depth of 13 feet in areas where new wood poles, stub poles, and distribution poles will be installed along the Cox-Freedom Segment. The vertical study area required for the modification

of Rob Roy Substation is assumed to be at a maximum depth of approximately 14 feet. In addition, the maximum overhead vertical impact of each of the new TSPs will be approximately 100 feet, while wood poles have a maximum overhead vertical impact of approximately 93 feet. Within the study area, fieldwork focused on areas where ground disturbances are planned, including pole replacement locations, access roads, and pull sites, as well as accessible portions of the right-of-way (ROW) easement, most of which is existing.

3.5.2.1 Cultural Resources

Records Search

Cultural resources may include archaeological sites, sacred sites, traditional cultural properties, rock art, rock piles or cairns, historic buildings, or other features of the historic built environment. To assess the project area's potential cultural resources, PAR Environmental Service (PAR) conducted archival research focused on historical events and persons associated with the project area and its land use history. PAR also reviewed and documented the historical built environment of the project area, including the actual dates of construction of built environment features. As part of this effort, the following repositories and individuals were visited or contacted during the course of the project by Cindy Baker of Far Western Anthropological Research Group, Inc. (Far Western):

- Pajaro Valley Historical Association, Watsonville
- Santa Cruz Historical Society, Santa Cruz
- Aptos History Museum, Aptos
- Santa Cruz County (County) Assessor's Office, Santa Cruz
- Santa Cruz Public Library, Santa Cruz
- California State Library, California History Room, Sacramento
- California State Library, Government Publications Section, Sacramento

Copies were made of pertinent letters, files, historic maps, historic photographs, and reports housed in the various archives and located through internet research. Copies of PAR's written requests for information that were sent to the Santa Cruz Historical Society and Pajaro Valley Historical Association are provided as Appendix A: Requests for Historical Information and Project Input Sent to Santa Cruz Historical Society and Pajaro Valley Historical Association of the project's Archaeological Survey Report, copies of which will be provided separately to California Public Utilities Commission (CPUC) staff.

Far Western also performed a search of materials on file at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University. The records search study area encompassed a 0.25-mile buffer along either side of the project alignment's centerline, as well as a single contractor storage yard adjacent to Green Valley Substation. Base maps were examined for archaeological sites and surveys within the study area, and the following sources were reviewed:

- National Register of Historic Places (NRHP)
- California Register of Historical Resources (CRHR)
- California Inventory of Historic Resources, 1976 and updates
- California State Historical Landmarks, 1996 and updates

- California State Points of Historical Interest, 1992 and updates
- Office of Historic Preservation's Historical Property Data File

Native American Consultation

The Native American Heritage Commission (NAHC) was contacted by letter on two occasions, informing the commission of the project and requesting a review of its sacred lands files and a list of the appropriate Native American representatives to contact for input on the project. In both their responses, the NAHC did not indicate the presence of any sensitive locations in the vicinity of the project, but did provide lists of local Native American contacts that may have knowledge of cultural resources within or near the project area. Far Western contacted the 10 Native American contacts provided by NAHC by letter; 3 of those representatives responded. In addition, a detailed project update and map was prepared by PG&E and mailed to the three responding individuals. A subsequent update mailed to the 10 Native American contacts provided information concerning the contractor storage yard, as well as two other potential storage yard locations under consideration that have since been removed from the study. Further details regarding these communications are provided in Section 3.5.3.2 Environmental Setting, and copies of the correspondence with the NAHC and Native American representatives are included in Attachment 3.5-A: Native American Consultation.

Archaeological Site Sensitivity and Field Survey

Prior to fieldwork, geological maps of Santa Cruz County were reviewed to assess the potential for buried archaeological resources in the project area. The project area is situated on several different geological units that vary in both age and sensitivity for buried archaeological deposits. Areas with younger alluvial deposits lain down over the last 10,000 years have the greatest potential for buried soils and, thus, buried archaeological remains. Where ancient formations are exposed at the surface, they are very unlikely to contain buried soils and archaeological deposits, except in small, localized depositional contexts where younger sediments might accumulate. These contexts, which are most likely to be found along natural drainages and fans, could contain buried cultural sites. Sediment exposures in cutbanks along the alignment might contain evidence of such sites.

Far Western archaeologists conducted cultural resources fieldwork, including archaeological and historic resources surveys, on March 24 through 27, May 24, August 4, and August 30, 2011. The purpose of this fieldwork was to confirm the locations and update the status of previously recorded sites, as well as to obtain new field data on the presence or absence of archaeological sites in the project area. A focused survey of the properties identified as being 50 years of age or older was also conducted during the fieldwork. Visual impacts to these features were assessed by determining if the project would alter a historic resource's setting, feeling, association, or sense of time and place, thereby impacting its potential as an eligible historic property.

The following three portions of the project area were unavailable for surveying:

- between three poles located approximately 1,000 feet north of the intersection of Whiteman Avenue and Harrison Way and the associated access roads and pull site;
- at one pole located approximately 1,580 feet northwest of the intersection of Corralitos Road and Skylark Lane and the associated pull site; and

- at one pole located approximately 400 feet north of the intersection of Jingle Lane and Day Valley Road.

Pole replacements, access roads, landing areas, or pull sites are planned in these areas, but they were not accessible due to the denial of access by landowners, steep terrain, and some areas being situated in actively cultivated fields. The three areas are currently located within an the existing PG&E ROW easement.

3.5.2.2 Paleontological Resources

Paleontological resources, or fossils, are the remains of ancient plants and animals that can provide scientifically significant information about the history of life on earth. Information on the geologic setting and project area paleontology was derived from published scientific literature. Additionally, the databases of several paleontological institutions were searched for records of fossil finds in the project vicinity and in the geologic units of interest elsewhere in the County. A memorandum identifying the results of the paleontological investigation for the project area is summarized in this section and will be provided separately to CPUC staff.

3.5.3 Existing Conditions

3.5.3.1 Regulatory Background

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of their undertakings on historic properties. Historic properties are cultural resources, such as archaeological sites, historic built environment features, or Native American sites, that are listed on or determined to be eligible for listing on the NRHP. The governing regulation found in Section 106 of the NHPA, as codified in 36 Code of Federal Regulations Part 800, requires the project's lead federal agency to consult with the State Historic Preservation Officer regarding potential impacts to historic properties.

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act establishes a federal policy of respect for, and protection of, Native American religious practices. It also contains provisions that allow limited access to Native American religious sites.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) provides for the repatriation of certain items from the federal government and certain museums to the native groups to which they once belonged. The act defines "cultural items," "sacred objects," and "objects of cultural patrimony," and establishes a means for determining ownership of these items. However, the provisions for repatriation only apply to items found on federal lands.

State

California Register of Historical Resources

The CRHR is a public listing of specific properties to be "protected from substantial adverse change." Any resource eligible for listing in the CRHR must also be considered under the California Environmental Quality Act (CEQA), described in this section under California Public Resources Code (PRC) Section 21000, et seq. and California Code of Regulations, Title 14, Section 15000, et seq.

A historical resource may be listed on the CRHR if it meets one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (U.S.).
- It is associated with the lives of persons important to local, California, or national history.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic value.
- It has yielded or has the potential to yield information important in the prehistory or history of the local area, California, or the nation.

Automatic listings include properties listed on the NRHP, determined eligible either by the Keeper of the National Register or through a consensus determination on a project review, or State Historical Landmarks from number 770 onward. 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. Landmarks prior to number 770 and Points of Historical Interest may be listed through an action of the State Historical Resources Commission.

Resources listed on 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 in 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 (PRC Section 21084.1 and Section 21098.1).

Native American Graves Protection and Repatriation Act of 2001, California Health and Safety 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), including the NAGPRA. NAGPRA established a state policy to ensure that California Native American human remains and cultural items are treated with respect and dignity. NAGPRA also provides the mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, NAGPRA outlines the process that California Native American tribes that are not recognized by the federal government may follow to file claims for human remains and cultural items held in agencies or museums.

California Public Resources Code

Several provisions of the PRC govern archaeological finds in terms of human remains and any other related object of archaeological or historical interest or value. Procedures are detailed under PRC Section 5097.9 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 any 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 any 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.

Paleontological resources are limited, non-renewable resources of scientific, cultural, and educational value that are protected under CEQA (PRC 21000 et seq.). CEQA and PRC Section 5097, et seq. govern the preservation and protection of these resources.

3.5.3.2 Environmental Setting

Ethnographic Overview

The project area encompasses a region that was inhabited by speakers of the Costanoan, or Ohlone, language family. Two distinct Ohlone groups, the Awaswas and Rumsen, occupied the region at the time of European contact. The territory of Awaswas speakers extended from approximately Point Año Nuevo southward to the lower Pajaro River and east to the Santa Cruz Mountains, and included the present-day cities of Santa Cruz and Scotts Valley, as well as the communities of Aptos, Corralitos, and possibly Watsonville. Dialects of the Awaswas language were spoken by independent local tribes, including the Aptos people, whose territory likely extended from Aptos Creek east to at least Corralitos, and probably to the lower Pajaro River. To the south, Rumsen speakers occupied an area extending from Point Sur northward to the lower Pajaro River, and included the present-day cities of Monterey, Seaside, Marina, Carmel, and possibly Watsonville. The tribelet community of Calenda Ruc, the northernmost Rumsen-speaking group, occupied the sloughs and salt marshes in the central portion of Monterey Bay in the vicinity of the mouths of Elkhorn Slough and the Pajaro and Salinas rivers.

Ohlone groups occupied both permanent villages and seasonal settlements, with the permanent settlements located on higher ground inland. In the Watsonville-Castroville area, family groups of 8 to 12 people were sheltered in spherical houses made from locally available materials, such as poles and tule. To procure food, Ohlone people gathered plants, fruit, bulbs, nuts, vegetables, and seeds (particularly acorns); fished and hunted in both inland and coastal areas; and harvested shellfish. In addition, they built up a sophisticated trade network with neighboring groups, acquiring raw materials (e.g., shell beads) to fashion into trade items, which they traded for locally absent resources (e.g., obsidian, pinyon nuts).

Ohlone tools indicate a variety of skills. Hunting technology included sinew-backed bows, obsidian-tipped arrows, and stone tools made of chert and granitics. Mortars and pestles were also fashioned from stone. Other implements made by Ohlone people included awls, fish gorges, and abalone pries made from animal bones; fishhooks and spoons made from shells; and nets and

baskets woven from various plant fibers. In addition, the Ohlone bundled tule reeds into rafts from which they hunted fish and waterfowl in the area's sloughs and marshes.

As missions became established in the area—Mission of San Carlos Borromeo de Carmelo in 1770, Mission Santa Cruz in 1791, and Mission San Juan Bautista in 1797—local Ohlone populations began to decline. This decline was due in large part to newly introduced diseases, but also to environmental changes as the Spanish altered the landscape such that traditional resources became increasingly curtailed. Land use near the missions was converted to farming and livestock grazing, and local streams and creeks were likely diverted and claimed for the ranches, farms, and orchards. Wild game was forced to compete with the Spanish cattle herds, and the vegetation and freshwater resources suffered severe damage due to livestock overgrazing. Eventually, these conditions forced the Ohlone people into the mission system, and the survivors learned to adapt to the new economy.

Historic Overview

Prehistoric Background

The prehistoric chronology of California's central coast has undergone several revisions; the chronological sequence used in the following discussion is adapted from the findings for the Castroville highway widening project (Jones, et al.). Six general time periods are recognized: the Paleoindian Period (13,500 through 8,500 before present [BP]); the Millingstone Period (8,500 through 5,500 BP); the Early Period (5,500 through 2,600 BP); the Middle Period (2,600 through 1,000 BP); the Middle/Late Transition (1,000 through 700 BP); and the Late Period (post 700 BP). The following subsections summarize these time periods, as described by Jones, et al.

Paleoindian Period (13,500 through 8,500 BP)

The cool and dry conditions of the Pleistocene epoch gave way to warming during the Paleoindian period; this warming produced rapidly increasing sea levels due to worldwide glacier melt. Very little evidence has been found on the central coast for human occupation during this interval, but many researchers believe that the physical changes wrought on the coastline and interior valleys by rising sea water have buried or obliterated early sites.

The Scotts Valley site (CA-SCR-177), located approximately 10 miles northwest of the project area, produced intriguing indications of Paleoindian occupation, with radiocarbon dating to 13,500 BP. However, the mixed nature of the deposit did not provide for a clear single component assemblage.

Millingstone Period (8,500 through 5,500 BP)

Sea levels continued to rise during this period, but began slowing around 7,000 BP and finally stabilized at about 5,000 BP. The flooding of the more gently sloped portions of the coastline produced ideal habitats for intertidal resources; many Millingstone period sites are located near these ancient estuaries. The sites are characterized by shell middens, which contain more abundant ground and battered stone implements relative to flaked stone tools, indicating a diet focused on shellfish and seeds rather than on large marine and terrestrial animals (although such remains are present). Diagnostic artifacts consist of eccentric crescents, long-stemmed points, and thick rectangular (L-series) *Olivella* (shell) beads. Although the estuaries were attractive

locales, Millingstone peoples also utilized interior resources. They were probably highly mobile, obtaining resources directly from both coastal and interior areas during seasonal rounds.

Although sites dating to this interval have mostly been identified in southern California, Millingstone Period components have been identified in the regions near Elkhorn Slough, Moss Landing, and Castroville, and at SCL-178 in the southern Santa Clara Valley. Site MNT-1232/H to the south in Big Sur also produced three radiocarbon assays from this time period. In contrast to its Paleoindian occupation, SCR-177 yielded more definitive chronometric data from its Millingstone Period component.

Early Period (5,500 through 2,600 BP)

This period ushered in new land use and social organization patterns, as well as new tool forms. Settlement continued at most estuaries, but also expanded into a variety of open coast locales, likely spurred by environmental fluctuations and population growth. One exception to this rule was Elkhorn Slough, where it was likely that the closing of the slough and the subsequent decline in estuary resources led to the abandonment of sites like MNT-229. Western Great Basin peoples also experienced dramatically increased aridity at the onset of this period, and desert area population densities consequently declined. Coastal peoples were under pressure as the effects of plunging resources in the Great Basin rippled westward, prompting western populations to increasingly restrict territorial boundaries. All of these trends created greater reliance on trade networks, and spurred an increased use of locally available resources.

Greater proportions of hunting and fishing tools in Early Period artifact assemblages reflect the increasing importance of these activities, and mortars and pestles made their first appearance during this time. Although some researchers have questioned the assumed link between these tool forms and acorn consumption so early in the archaeological record, charred acorn remains recovered from an Early Period component of a site on Morro Bay seem to support that mortars and pestles signal intensified acorn processing.

The greater elaboration in all tool forms likely affected social organization by accelerating gender differentiation in work activities. Diagnostic beads of the period consist of shell material in thick rectangular (Class L), end-ground (Class B), and split (Class C) *Olivella* and square *Haliotis* forms. Projectile point forms consist of contracting-stemmed, Rossi Square-stemmed, and side-notched types. Obsidian also made its first appearance in these Early Period sites within the Big Sur and Monterey Bay areas.

Inland peoples of California appear to have been quite mobile during this interval, as indicated by the presence of coastal shell and seasonal floral remains in excavated sites within the southern Santa Clara Valley. However, it has been suggested that the movement of inland peoples became increasingly constrained during this interval.

Several sites with Early Period occupations are located on the Monterey Peninsula to the south. Excavations at site MNT-108 yielded abundant obsidian and fish bone dating to this interval, and the site appears to represent a major summer village based on the analysis of fish otoliths. The abundance of fish remains at this site may indicate that this resource was being traded to the interior. Sites with Early Period components to the north consist of SCR-7 on the coast north of Santa Cruz and SCR-239 in Scotts Valley.

Middle Period (2,600 through 1,000 BP)

Adaptive strategies from the Early Period continued to intensify during the Middle Period on the Monterey coast, with a heavy reliance on acorns. Fish remains increased dramatically at Elkhorn Slough during this time, signaling greater attention on this resource. The large size of sites dating to this period points to significant population growth. Typical tools from Middle Period sites consist of mortars and pestles; handstones and millingstones; and contracting-stemmed, square-stemmed, side-notched, and concave base projectile point forms. Shell bead morphology changed dramatically, with an emphasis on *Olivella* wall beads. Trade networks appear to have been quite robust, as indicated by the high proportions of imported Casa Diablo obsidian; trade in sea otter pelts also peaked in this period. Over the mountains in the southern Santa Clara Valley, excavations of Middle Period sites show decreased amounts of marine shell, likely signaling increased limitations to coastal access.

Several Middle Period sites have been excavated to the south along the Monterey Peninsula. Site MNT-12 is the largest site known in this area dating to this interval. It appears to have been a residential base, with a diverse and dense artifact assemblage and human burials.

Middle/Late Transition (1,000 through 700 BP)

By 1,000 BP, use of coastal areas appears to have reached peak intensity, after which central and southern California experienced several severe drought cycles that coincided with the abandonment of large coastal sites in the Monterey Bay region. This Medieval climatic anomaly likely catalyzed the disruption of existing settlement and subsistence patterns, with far-reaching implications for lifeways and social organization.

Prior to the identification of this climate anomaly, the widespread movement from large coastal settlements inward to the interior valleys was thought to herald intensification of terrestrial resources. In this scenario, people moved inland to villages that became bases from which people would make short collecting journeys, and this relatively sudden change in the resource base during the droughts caused breakdowns in the social fabric, catalyzing settlement shifts, population decline, and trade deterioration. Fish and marine mammal remains essentially disappeared from coastal sites by the end of this period, as did obsidian and otter remains. Unlike the environmental changes of the early and mid-Holocene epoch, technological innovations could not mitigate the environmental problems because they developed rapidly and were severe.

Late Period (post through 700 BP)

Coastal settlement patterns appear never to have fully recovered from the Medieval drought. Local populations appear to have maintained an inland focus, concentrating on acorns and other terrestrial resources and living in villages in valley bottoms and beside lakes or rivers. Although coastal sites of this period demonstrate continuing use of marine resources, they appear to represent short-term processing camps used by inland residents due to the nearly pure presence of shell and low artifact representation. Within the inland sites, abundant ground stone tool assemblages and a high diversity of plant remains attest to the continuing emphasis on plant processing. Excavations of Late Period sites in the southern Santa Clara Valley demonstrate an almost completely inland focus, as coastal shell essentially disappeared from the assemblages. Diagnostic markers consist of Desert side-notched projectile points and Classes E (lipped), K (callus), and M (thin rectangle) beads.

Historic Background

The project area is a residential agricultural settlement region in the interior of the County. The County surrounds the northern portion of Monterey Bay, and was one of the original counties of California, created at the start of statehood in 1850.

The region experienced its first non-native contact in 1769, when the Gaspar de Portola land expedition conducted reconnaissance for the King of Spain from its headquarters in Mexico. Finding good sources of redwood in the area, these explorers established three missions: Mission Santa Cruz, Mission San Carlos Borromeo de Carmelo, and Mission San Juan Bautista. None of these missions are near the project area.

By 1784, concessions for ranchos were awarded by the King of Spain or his Viceroy in Mexico for farms or cattle operations. In 1822, Mexico gained independence from Spain and took over control of its mission territories in what is today California. Former mission lands were released for secular development starting in 1833. Government officials, former soldiers, and citizens could apply for grants on this land.

The following seven ranchos were established from the land grants based on the lands of Mission Santa Cruz, Mission San Carlos Borromeo de Carmelo, and Mission San Juan Bautista:

- Bolsa de Pajaro
- Bolsa de San Cayetano
- Laguna de Calabasas
- Los Corralitos
- Salsipuedes
- San Andres
- Vega del Rio del Pajaro

The project area extends over two of these Mexican land grants: Laguna de las Calabazas (2,305 acres granted in 1833) and Los Corralitos (15,400 acres granted in 1823). Most who received the land grants raised cattle for hide and tallow, and typically used Native Americans as laborers and domestic workers. This subsistence economy resulted in very slow population growth and land development.

Increasing tensions between the U.S. and Mexico over territorial boundaries culminated in war between the two countries, which ended in 1848 when Mexico ceded the territory of California to the U.S. under the Treaty of Guadalupe-Hildago. The U.S. military took over provisional control until California statehood was proclaimed in September 1850. The region experienced significant population growth with the discovery of gold in the Sierras in 1848, which accelerated when statehood was achieved. Watsonville, the largest population center near the project area, was founded during this period in 1852 and incorporated in 1868. In 1855, Benjamin Hames purchased several hundred acres of Rancho Corralitos and built a flour mill there with his brother. Hames Road today is a reminder of the Hames family's role in the growth of the area.

The town of Corralitos, just north of the project area, was settled by the 1860s and developed around an economy initially based on the harvesting of redwood lumber from the local forests.

Corralitos, or "little corral," is the flat expanse of land surrounded by redwood-covered hills that was occupied by Ignacio Coronel in 1836 and granted to Jose Amesti in 1844. Amesti's heirs claimed and received a patent to 15,440 acres in 1861. By 1865, several families had settled in Corralitos and the surrounding hills and valleys.

In 1871, a railroad line was established in Pajaro Valley south of the project area. Frederick Hihn and Charles Ford extended this line through the County using narrow gauge track. The improved transportation led to rapidly unsustainable levels of timber harvesting, as workers could move timber stripped off the hillsides at a much faster rate. Chair and paper manufacturing were also developed, although to a lesser degree. The Hames' flour mill was converted to a paper mill in 1877 and was supplied with straw grown on the flat lands throughout the project area. This practice lasted for roughly 20 years.

By the late 1880s, several prominent families had settled in the area, including the Cox and Day families, after which Cox Road and Day Valley Road are presently named. The Cox family moved from Michigan to the Pajaro township region between 1880 and 1900 and started farming there. The Day family arrived around 1869 when Darius Day started mining in Pajaro Township, and by 1880 he began farming in the project area. A year later, he founded their private cemetery located in what is now The Forest and Meadows subdivision at the corner of Meadow Road and Downing Drive. This cemetery contains the plots of 118 Day relatives.

The Frapwells were another locally prominent family. They arrived in the 1870s and farmed in Scotts Valley and Corralitos. One of the three sons, John Frapwell, took over operation of the family ranch in Corralitos in 1911. In 1925, he built a house on Corralitos Road with his wife, Jesse. After John's death in 1934, Jesse remarried Alvin Seale, the Director and Superintendent of the Steinhart Aquarium in San Francisco. Jesse and Alvin added to the house and it became the gathering place for the local youth archery club. Their house remains today on Corralitos Road, a reminder of community history.

By the 1890s, the region's forests were rapidly depleting. Agriculture soon replaced lumbering as the dominant industry, one that continued to grow in the temperate inland valleys. Economically important crops included potatoes, wheat, and lettuce, which were later replaced by apple orchards in the early twentieth century.

In the 1920s, the temperate climate and proximity to San Francisco created a small residential building boom in the area. Near the western end of the project area, for instance, David W. Batchelor, a real estate developer from Petaluma, purchased 270 acres to develop the seaside community of Rob Roy, named for his Scottish heritage. Batchelor sold lots to potential homeowners.

This industry has continued into the twentieth and twenty-first centuries. Small farms have also expanded, including the Kliewer farm on Kliewer Lane. Today, food production facilities and fruit, vegetable, and flower growers remain important components of the local economy. More than 80 varieties of crops can be produced in the area due to the rich soil. Most of the production is in the eastern part of the project area closer to Watsonville, where large flat growing beds are covered with temporary hothouse coverings. This area is also infilled with lower-income housing that is partially occupied by the laborers who work these fields and others who work in

Watsonville. Residential development in this eastern part of the project area is much denser, while housing to the west is often surrounded by 0.5-acre to larger parcels.

In the past 50 years, small subdivisions have been constructed in the project area, infilling large tracts of former ranch lands. This infill increased during a building boom in the 1970s when professionals from San Francisco, Monterey, and Carmel began building country homes in the area. Corralitos, for instance, became known as an upscale community. In 1972, Roy R. Day sold off a large portion of family land that is today the Forest and Meadows subdivision. Before doing so, he recorded the survey of their family cemetery, which today remains unchanged in the housing tract and is managed by the Pajaro Valley Cemetery District. By the 1990s, land had become costly, leading builders to tear out apple orchards for new home sites. Today, the region around the project area is largely a bedroom community with scattered farms and houses with acreage for horses.

Cultural Resources in the Project Area

Records Search Results

Few cultural resources studies have been previously conducted in the project area. In total, only 11 studies in the project vicinity are reported, of which seven extend partially into the survey area. Each of these seven are cultural resource inventories for development projects. The most recent study was conducted at Green Valley Substation for a telecommunications project. None of these studies formally documented cultural resources in their study areas, although a 1978 study by Charles Smith of the proposed Forest and Meadows subdivision recommended avoidance of the historical Day Valley Cemetery (discussed previously in this chapter) during construction of that project.

The Day Valley Cemetery encompasses a small (0.28 acre) parcel located in the Forest and Meadows subdivision near Day Valley Road. This private family burial site for members of the Day and Cox families and their relatives dates to 1881 (according to a plaque placed at the cemetery, it was established on October 28, 1881 by Darius Day). The earliest recorded death is 1890 and the most recent is 2010. Day Valley Cemetery is now maintained by the Pajaro Valley Public Cemetery District and is listed as a “Historic Landmark” in the California Inventory of Historic Resources.

No other cultural resources within the study area were identified on base maps obtained at the Northwest Information Center.

Native American Consultation

Far Western informed the NAHC of the project and requested a list of the appropriate Native American representatives to contact for input on the project. On November 12, 2010, the NAHC informed Far Western that the project contained no known sacred sites and provided a list of local Native American contacts that may have knowledge of cultural resources within or near the project area. On November 12, 2010, Far Western sent letters—copies of which are included in Attachment 3.5-A: Native American Consultation—to the 10 Native American contacts provided by the NAHC.

Far Western received three responses to the inquiries from the Native American representatives. Two of the representatives were reached by phone on December 3, 2010 and reported no concerns; both requested updates following the archaeological survey. On May 12, 2011, Far Western sent project information updates to the three Native American representatives who had responded to the original communication. One representative responded on June 30, 2011 with a request to continue to be informed as the project progresses. On May 12, 2011, a project update and map prepared by PG&E was mailed to the three Native American representatives who had responded to the original communication. The PG&E update provided more detailed information concerning the current study area—including an updated study area map, project construction methods, schedule for the selected alternative, and a cover letter prepared by Far Western summarizing the findings of the archival research and pedestrian survey.

On January 3, 2012, Far Western again contacted the NAHC for information concerning the Green Valley Contractor Storage Yard, as well as for two locales under consideration for storage yards that have since been dropped from the project. In their response, the NAHC stated that no known sacred sites were present. The 10 Native American contacts were informed of the yards by Far Western and were requested to share with PG&E any knowledge or concerns they might have about the yards in letters mailed on January 11, 2012.

Copies of all correspondence with the NAHC and the Native American representatives are included in Attachment 3.5-A: Native American Consultation.

Archaeological Site Sensitivity Research and Field Survey Results

The buried archaeological site sensitivity for the project area was determined to be greatest in the areas that were most likely to have attracted human occupation in the past and that have Holocene-age sediments mapped at the surface. These areas include the large Holocene floodplain surrounding Corralitos Creek and the drainage leading into Pinto Lake. Also included, to a lesser extent, is the narrow Holocene floodplains within several canyons and areas of Holocene colluvium in low-angle portions of the landscape, such as Pleasant Valley and Day Valley.

A total of 22 cultural resources were identified and recorded during the field surveys, including Day Valley Cemetery, which was referenced in a prior survey but never recorded. The resources identified consist of two historic-period archaeological sites, 18 historic structures or complexes, and two historic-period isolates, as shown in Table 3.5–1: Cultural Resources Identified in the Project's Study Area. No prehistoric sites or isolates were encountered. As described in Section 3.5.2 Methodology, three areas of the project were inaccessible during the field surveys; however, of the three, only one requires further investigation. This area will be surveyed for cultural resources prior to the start of project construction, once access to the property is granted by the landowner. The other two are located in areas that have been extensively trampled by livestock and within a landscaped lawn area, respectively. Thus, these locations are unlikely to contain surficial cultural materials.

Table 3.5–1: Cultural Resources Identified in the Project's Study Area

Resource	Name/Address	Within Project Area?	Potentially Significant?
SCPL-1	Historic toilet and road segment	Yes	No
SCPL-2	Historic artifact scatter	Yes	No
SCPL-3	Isolated farm equipment	No	No
SCPL-4	Isolated benchmark	Yes	No
HR-1	100 Littleway Lane	Yes	No
HR-2	Dalton Lane	Yes	No
HR-3	Kliewer barns	Yes	Yes
HR-4	193 Pioneer Road	Yes	No
HR-5	1909 single-family home	No	Yes
HR-6	Day Valley Road	No	No
HR-7	301 McDonald Road	Yes	No
HR-8	125 McDonald Road	Yes	No
HR-9	6910 Freedom Boulevard	Yes	No
HR-10	6550 Freedom Boulevard	No	No
HR-11	1191 Amesti Road	Yes	No
HR-12	Corralitos Road Italianate home	No	Yes
HR-13	500 Senda del Valle	Yes	No
HR-14	Apple barn	Yes	Yes
HR-15	Day Valley Cemetery	Yes	Yes
HR-16	172 Downing Drive	Yes	No
HR-17	Melody Hill Egg Ranch	Yes	No
HR-18	Amesti Road barn	No	No

Source: Ruby, 2011

The majority of the resources identified are either partially or entirely located within the project area; however, only one resource—site SCPL-2—is situated within an area planned for construction or access road creation. SCPL-2 is potentially within a pull site temporary work area. In addition, five of the resources—HR-3, HR-5, HR-12, HR-14, and HR-15—exhibit characteristics that may render them potentially eligible for listing to the CRHR. A general description of SCPL-2 and the five resources that may be potentially eligible for listing to the CRHR follows.

SCPL-2

This resource consists of a diffuse scatter of historic domestic debris located along a unpaved road within an old orchard on Hames Road. Artifacts noted include glass bottle and ceramic tableware fragments. A partial Hazel-Atlas maker's mark on one of the bottles provided a manufacturing date ranging between 1920 and 1964. The very diffuse nature of the scatter and fragmentation of the artifacts indicates they have likely been broken and moved around by maintenance and use of the orchard and access road. It is unlikely that the resource is associated with a subsurface deposit, as the items were thinly distributed across a wide area and no evidence for a subsurface context was observed.

The artifacts are likely associated with historic use of the orchard. They may also be associated with the complex of historic and modern structures located about 160 feet to the south. These structures front onto Hames Road; two are depicted on the 1914 U.S. Geological Survey (USGS) map of the area. The complex includes the old Pleasant Valley School building, which was reportedly constructed in 1863, rebuilt in 1910, and closed in 1915. There are also two structures located approximately 600 feet to the north on the 1914 map, on the north edge of the current orchard. The scatter could be associated with orchard workers or either of the clusters of historic-era structures bordering the orchard.

HR-3

The Kliewer family ranch complex contains more than 15 buildings associated with the family business of raising turkeys for commercial purposes, beginning in the 1930s. Only two barns, Structure A and Structure B, are within the project area. Structure A is a two-story front-gabled barn that appears to function as a feed and equipment storage building. Structure B is a one-story barn that appears to be designed to house animals. Both structures lie partially within the 200-foot-wide survey corridor adjacent to a proposed access road.

HR-5

This property contains a single-family vernacular-style home constructed in 1909 and a detached garage/storage building on the east side of Cox Road. These structures do not fall within the 200-foot-wide survey corridor.

HR-12

The property is a one-story house that was constructed in 1925 by John and Jesse Frapwell. This resource lies outside of the 200-foot-wide survey corridor.

HR-14

This one-story barn appears to have been constructed in the 1940s or 1950s; the County assessor's office has no date of construction listed. The barn is not depicted on the 1940 USGS map; however, it is shown on the 1954 edition. This barn is located within the Forest and Meadows development and is owned by the homeowners' association as common ground. It appears to be maintained as a community meeting area. This resource falls within the 200-foot-wide survey corridor, but does not lie within a work area.

HR-15

As discussed previously, Day Valley Cemetery, established October 28, 1881, is a private family burial site for members of the Day and Cox families and their relatives. By 1978, 118 individuals were buried in this cemetery. Modern stone entrance gates facing Meadow Road include a memorial plaque. There are no buildings within the cemetery boundaries. Structures include a mausoleum and headstones. This cemetery is located in the Forest and Meadows subdivision at the corner of Meadow Road and Downing Drive. The cemetery falls partially within the 200-foot-wide survey corridor but does not lie within a work area.

Paleontological Resources in the Project Area

In October 2010, a paleontological sensitivity study was conducted for the project area by LSA Associates. The study results memorandum states that the project area contains a low to moderate sensitivity for paleontological. Areas with a low potential for paleontological resources are those containing wind-derived Pleistocene-age dune deposits and all Holocene-age deposits. Areas containing a moderate potential for paleontological resources are those containing stream-derived Pleistocene-age sediments. Although these alluvial Pleistocene-age sediments would normally be considered highly sensitive for paleontological resources, the likelihood to encounter such resources in the project area would be only moderate due to the lack of well-dated Pleistocene fossil localities reported for the County. Table 3.5–2: Paleontological Resource Sensitivity Locations provides the location of paleontological resource sensitivity in the project area.

3.5.4 Potential Impacts and Applicant-Proposed Measures

3.5.4.1 Significance Criteria

Cultural Resources

Under CEQA, project construction or O&M impacts to unique or important resources must be considered. A resource is considered unique or important if it meets any of the following criteria:

- Is associated with an event or person of recognized importance in California or American history or scientific importance in prehistory
- Can provide useful information of demonstrable public interest and is useful in addressing scientifically consequential and reasonable archaeological research questions
- Has a special or particular quality, such as oldest, best example, largest, or last surviving example of its kind
- Is at least 100 years old and possesses substantial stratigraphic integrity

- Involves important research questions that historical research has shown can only be answered with archaeological methods

Table 3.5–2: Paleontological Resource Sensitivity Locations

Approximate Milepost[1]		Sensitivity Level
Begin	End	
0.0	2.0	Moderate
2.0	2.5	Low
2.5	3.4	Moderate
3.4	4.0	Low
4.0	5.4	Moderate
5.4	5.9	Low
5.9	6.3	Moderate
6.3	6.6	Low
6.6	6.8	Moderate
6.8	8.8	Low

Source: Conkling, 2010

Construction-related subsurface and surface disturbances may result in a loss of integrity of cultural deposits, a loss of scientific information, and the alteration of an archaeological site setting. Potential indirect impacts, primarily vandalism, may result from increased access and use of the general area during construction and long-term O&M activities. The potential also exists for the inadvertent discovery of buried or masked archaeological materials during construction activities.

Impacts to cultural resources are considered significant if the project:

- Causes a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5 of the CEQA Guidelines
- Causes a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5 of the CEQA Guidelines
- Disturbs any human remains, including those interred outside of formal cemeteries

"Substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of a historical resource is impaired. In addition, Section 21084.1 of the CEQA Guidelines stipulates that any resource listed or eligible for listing on the CRHR is presumed to be historically or culturally significant.

[1] Mileposts are assigned to the line starting at Green Valley Substation and ending at Rob Roy Substation, and are shown in Attachment 2-A: Detailed Route Maps. The start and end points of the mileposts shown in the table have been rounded to the nearest tenth of a mile.

Paleontological Resources

Impacts to paleontological resources are considered significant if the project directly or indirectly destroys a unique paleontological resource or site or unique geologic feature. Because fossils are the remains of prehistoric animal and plant life, they are considered to be non-renewable. Impacts to paleontological resources are identified from high to zero depending on the resource sensitivity of impacted formations. The specific criteria applied for each sensitivity category are summarized as follows:

- High significance: Impacts to high-sensitivity formations
- Moderate significance: Impacts to moderate-sensitivity formations
- Low significance: Impacts to low-sensitivity formations
- Zero significance: Impacts to zero-sensitivity formations

3.5.4.2 Applicant-Proposed Measures

Implementation of the following APMs will reduce potential adverse impacts to cultural resources to a less-than-significant level:

APM CUL-01. Personnel Training.

Prior to construction, all PG&E, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including the potential for exposing subsurface cultural resources and paleontological resources and how to recognize possible buried resources. This training will include a presentation of the procedures to be followed upon discovery or suspected discovery of archaeological materials, including Native American remains and their treatment, as well as of paleontological resources.

APM CUL-02. Evaluation/Avoidance of SCPL-2.

Prior to construction, SCPL-2 will be evaluated to determine if it is eligible for listing on the CRHR. If SCPL-2 is eligible, PG&E will not improve the road and will place steel plates along the existing access road to protect this resource in the event the road is used during wet conditions. If SCPL-2 is not eligible, PG&E will use the access road in its current state. Regardless of eligibility, resources identified within SCPL-2 that are outside of the existing access road will be flagged prior to project construction, and the proposed pull site will be situated to avoid the flagged location. Proper signage that states “Exclusion Zone, No Access” will be posted in the restricted area. All crewmembers will be directed not to enter the exclusion zone.

APM CUL-03. Archaeological Field Survey.

The area between the three poles located approximately 1,000 feet northeast of the intersection of Whiteman Avenue and Harrison Way, will be examined by a qualified archaeologist prior to any ground-disturbing activities. Any identified cultural resources that can be avoided will be flagged and marked with proper signage that states “Exclusion Zone, No Access” in the restricted area. All crewmembers will be directed not to enter the exclusion zone. If avoidance of an identified cultural resource is not feasible, the resource will be formally evaluated for its eligibility to be listed on the CRHR by a qualified professional historian prior to project

construction. Once the find has been identified and evaluated, PG&E's cultural resources specialist will make the necessary plans for treatment of the find and mitigation of impacts if the find is determined to be significant as defined by CEQA.

3.5.4.3 Question 3.5a – Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Construction – Less-than-Significant Impact

As described in Section 3.5.3 Existing Conditions, the Day Valley Cemetery (HR-15) was previously identified during a cultural survey in the project area. Although it is not listed in the CRHR, the cemetery is included in the California Inventory of Historic Resources. This resource, as well as four additional historic resources—HR-3, HR-5, HR-12, and HR-14—that may be potentially eligible for listing on the CRHR were identified during the field surveys for the project. All five of these resources are located within the existing transmission corridor for the project's Northern Alignment; four of these resources, however, are not within identified pole work areas, access roads, pull sites, or other project work areas or contractor storage yards. As part of the project, new approximately 100-foot-tall TSPs will be installed the length of the Northern Alignment to replace existing approximately 93-foot-tall wood poles. Because they are located within identified work areas for the project, and because the replacement TSPs would be only slightly taller (approximately 7 feet) than the existing wood poles, implementation of the project will not significantly physically or visually impact the integrity of these three sites.

Site SCPL-2, identified during the project's field surveys, is located within project work areas, including an existing access road. It is described as a diffuse scatter of historic domestic debris located within and alongside Hames Road. The project identifies a broad general area in this location for a pull site to be located. The pull site will be significantly smaller than this area, however, and the final size and placement of the pull site within it will be situated to avoid the areas of SCPL-2 that are outside of the existing access road, as provided in APM CUL-02. This APM also requires the SCPL-2 be evaluated to determine if it is eligible for listing on the CRHR. If SCPL-2 is determined to be eligible, PG&E will not improve the existing access road and will install steel plates along the road in the event it is used during wet conditions. Therefore, any impacts to this site will be avoided or be less than significant.

Operation and Maintenance – No Impact

O&M activities will continue to be conducted within PG&E utility ROWs in the same manner that they have been to date. These activities will not result in substantial adverse changes to any of the historic resources in the project area because the only locations potentially impacted by O&M activities will not differ from those previously disturbed during construction of the project. Therefore, no impact will occur.

3.5.4.4 Question 3.5b – Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Construction – Less-than-Significant Impact

Ground-disturbing construction activities will include grading and excavation of foundations for modification of Rob Roy Substation, grading of access roads and pull sites, and grading and excavation for overhead power pole installation. These activities have the potential to impact

cultural resources within the project area by disturbing subsurface soils and potentially disturbing or destroying buried cultural deposits or archaeological sites.

As previously described, the project area generally exhibits a low to moderate sensitivity for buried archaeological sites, with the exception of four areas. The large Holocene floodplain surrounding Corralitos Creek and the drainage leading into Pinto Lake possess a moderate to high sensitivity, and Pleasant and Day Valleys possess a moderate sensitivity. Potential impacts resulting from encountering buried cultural deposits or archaeological sites will be reduced to a less-than-significant level with the implementation of APM CUL-01 and APM CUL-03. APM CUL-01 includes training for all PG&E contractors, subcontractors, and project personnel on the procedures to be followed if archaeological materials are discovered or suspected, and APM CUL-03 requires that an archaeological field survey be conducted by a qualified archaeologist in the area located approximately 1,000 feet northeast of the intersection of Whiteman Avenue and Harrison Way prior to any ground-disturbing activities. Thus, with implementation of these measures, impacts to archaeological resources are anticipated to be less than significant.

Operation and Maintenance – No Impact

O&M activities associated with the project will be conducted in areas that were previously disturbed during construction of the project. As no significant archaeological resources have been identified in the project area and any discovered during construction will have been addressed previously with implementation of APM CUL-01 and APM CUL-03, no impacts to archaeological resources are anticipated to occur during O&M of the project.

3.5.4.5 Question 3.5c – Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction – Less-than-Significant Impact

Direct impacts to paleontological resources occur when earthwork activities, such as mass grading and excavation, cut into the geological deposits or formations within which fossils are buried. These direct impacts occur in the form of physical destruction of the fossil locality and the contained fossil remains.

Project excavation will be necessary to a maximum depth of approximately 33 feet for installation of the TSPs, a maximum depth of approximately 13 feet for wood poles, and a maximum depth of approximately 14 feet for the Rob Roy Substation modification area. As described in Section 3.5.3 Existing Conditions, the Quaternary sediments present in the project area generally contain a low to moderate sensitivity for paleontological resources. Additionally, although the alluvial Pleistocene-age sediments would normally be considered highly sensitive for paleontological resources, the likelihood to encounter them in the project area is only considered moderate due to the lack of well-dated Pleistocene fossil localities reported for the County. Because of these circumstances and with implementation of APM CUL-01, any impacts to paleontological resources resulting from construction of the project will be less than significant.

Operation and Maintenance – No Impact

O&M activities associated with the project will not differ from those for the existing lines and will be conducted in areas that were previously disturbed during project construction. As no significant paleontological resources have been identified in the project area and any discovered during construction will have been addressed previously with implementation of APM CUL-01, no impacts to paleontological resources are anticipated to occur during O&M of the project.

3.5.4.6 Question 3.5d – Would the project disturb any human remains, including those interred outside of formal cemeteries?

Construction – Less-than-Significant Impact

As previously described in Section 3.5.3 Existing Conditions, the Day Valley Cemetery is located within the study area but not within an identified project work area. No recorded Native American or other human remains have been identified within or adjacent to the project area. Accordingly, the potential for the unintended discovery of human remains during subsurface construction activities required for the project is considered to be low. With implementation of APM CUL-01, project personnel will be trained to recognize possible buried resources, as well as the procedures to be followed upon discovery or suspected discovery of archaeological materials, Native American remains, and paleontological resources. If human remains are encountered during the course of construction, PG&E will implement the appropriate notification processes as required by law. In the unlikely event that Native American human remains are discovered during construction, work will be halted in the vicinity of the find and the County coroner will be notified, as required by the PRC. As a result, potential impacts related to human remains disturbance will be less than significant.

Operation and Maintenance – No Impact

As previously described, the presence of human remains is considered unlikely in the project area. Likewise, because project O&M activities will occur not differ from those for the existing lines and will occur in the same areas previously disturbed during construction, they will have no impact on any human remains.

3.5.5 References

Baker, Cindy. PAR. Senior Historian. Personal correspondence with Pajaro Valley Historical Association. April 18, 2011. P.O. Box 623 Watsonville, CA 95060.

Baker, Cindy. PAR. Senior Historian. Personal correspondence with Santa Cruz Historical Society. April 18, 2011. 705 Front Street Santa Cruz, CA 95060.

California Resources Agency. Title 14 California Code of Regulations, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act. CEQA Guidelines. 2010.

Conkling, Steven W. Preliminary Paleontology Findings for the Proposed Santa Cruz Reinforcement Project Memorandum. LSA Associates, Inc. 2010.

Orozco, Patrick. Costanoan Ohlone Rumsen-Mutsen Tribe. Personal communication with Adie Whitaker, Far Western. November 29, 2010, December 10, 2010, and May 12, 2011. (831)728-8471.

Pilas-Treadway, Debbie. Native American Heritage Commission. Personal communication with Melinda Patrick, Far Western. November 10, 2010. (530) 756-0811.

Ruby, Allika. Far Western. Personal communication with Ann Marie Sayers, Indian Canyon Mutsum Band of Costanoan. May 12, 2011.

Ruby, Allika. Far Western. Personal communication with Ramona Garibay, Trina Marine Ruano Family Representative. May 12, 2011.

Ruby, Allika and Cindy Baker. Draft Archaeological Survey Report for the PG&E Santa Cruz 115 kV Reinforcement Project, Santa Cruz County, California. Far Western Anthropological Research Group, Inc. 2011.

Sayers, Ann Marie. Indian Canyon Mutsun Band of Costanoan. Personal communication with Adie Whitaker, Far Western. November 15, 2010 and December 3, 2010. (530)756-3941.

ATTACHMENT 3.5-A: NATIVE AMERICAN CONSULTATION

The information that follows includes a summary table of all of the Native American consultation conducted on the project to date, as well as copies of letter and email correspondence with Native American representatives. The map referenced in some of the letters depicts records search results that are confidential in nature. As a result, this map has been omitted.

Name	Affiliation	Phone Number	Letter Sent	Phone Call	Comments	Request Follow Up
Jakki Kehl	Ohlone/Costanoan	(209) 481-5785	11/12/2010	12/3/10	Left Message	-
Linda Yamane	Ohlone/Costanoan	(831) 394-5915	11/12/2010	12/3/10	Left Message	-
Valentin Lopez, Chairperson	Amah Mutsun Tribal Band	(916) 481-5785	11/12/2010	12/3/10	Not at home, Left Message	-
Edward Ketchum	Amah Mutsun Tribal Band	aerieways@aol.com	11/12/2010	-	No number was provided	-
Irene Zweirlein, Chairperson	Amah Mutsun Tribal Band	(650) 851-7747	11/12/2010	12/3/10	Left Message	-
Jean-Marie Feyling	Amah Mutsun Tribal Band	(530) 243-1633	11/12/2010	12/3/10	Left Message	-
Patrick Orozco	Costanoan Ohlone Rumsen-Mutsen Tribe	(831) 728-8471	11/12/2010	12/3/10	Left Message; see note below	Letter sent 5/12/2011
Ann Marie Sayers, Chairperson	Indian Canyon Mutsun Band of Costanoan	(831) 637-4238	11/12/2010	12/3/10	Would like to be kept posted after the survey; see note below.	Letter sent 5/12/2011
			-	7/1/2011	Phone conversation with A. Ruby; Ms. Sayers commented on letter of 5/12/2011- would like to continue to be informed on the progress of the project and would like a monitor present during any earth disturbances in sensitive areas, especially adjacent to waterways.	
Rosemary Cambra, Chairperson	Muwekma Ohlone Indian Tribe of SF Bay Area	(408) 434-1668	11/12/2010	12/3/10	Wrong number	-
Ramona Garibay	Trina-Marine-Ruano Family	(209) 688-4753	11/12/2010	12/3/10	Would like to be kept posted after the survey.	Letter sent 5/12/2011

Notes:

10:04 Thur, Nov 18th—Patrick Orozco, letter in main dated Nov 15, 2010 in regards to Santa Cruz. He knows a lot of the recorded sites, has info on sites that are not recorded, doesn't understand the maps, would like some clarification. Same site numbers, needs more info. Recorded sites he knows SCR-44, Hullihan where they park their busses yanapvoic@earthlink.net. Worked with Bill Hildebrandt (and Far Western) and Rob Edwards.

1:36 PM Mon Nov 22—Ann Marie Sayers, Proposed Santa Cruz project, has definite concerns. She would like to request a monitor, possibly during survey and was told that she would be updated when a specific route had been chosen.

Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information

Return to CNAHC Home Page

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: PG&E Santa Cruz Reinforcement Project (Green Valley 115kV Transmission Line)

County Santa Cruz

USGS Quadrangle

Name Laurel, Loma Prieta, Soquel, Watsonville West Quads; and Aptos, Laguna de las Calbasas, Los Corralitos, San Andres, Shoquel Augmentation Land Grants

Township see maps Range see maps Section(s) see maps

Company/Firm/Agency:
Far Western Anthropological Research Group, Inc.

Contact Person: Melinda Patrick

Street Address: 2727 Del Rio Place, Suite A

City: Davis Zip: 95618

Phone: (530) 756-3941 x124

Fax: (530) 756-0811

Email: @farwestern.com

Project Description:

Far Western has been contracted by PG&E to assess the cultural sensitivity for several alternatives for the Santa Cruz 115kV transmission line. Phase I inventory tasks included a records search at the Northwest Information Center, Native American consultation, and a buried sensitivity assessment.

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

November 10, 2010

Melinda Patrick
Far Western Anthropological Research Group, Inc.
2727 Del Rio Place, Suite A
Davis, CA 95618

Sent by Fax: 530-756-0811
Number of Pages: 2

Re: Proposed PG&E Santa Cruz Reinforcement Project, Santa Cruz County.

Dear Ms. Patrick:

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 no2ification, 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 0numbers 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) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Santa Cruz County
November 10, 2010

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakki@bigvalley.net
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Amah/MutsunTribal Band
Jean-Marie Feyling
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jmfgmc@sbcglobal.net
530-243-1633
Ohlone/Costanoan

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rumsien123@yahoo.com
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Ohlone/Costanaon

Costanoan Ohlone Rumsen-Mutsen Tribe
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(831) 728-8471
(831) 728-8471
Ohlone/Costanoan

Amah MutsunTribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40
Sacramento , CA 95821
vlopez@amahmutsun.org
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Ohlone/Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister , CA 95024
ams@indiancanyon.org
831-637-4238
Ohlone/Costanoan

Amah MutsunTribal Band
Edward Ketchum
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Davis , CA 95616
aerieways@aol.com
Ohlone/Costanoan
Northern Valley Yokuts

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
PO Box 360791
Milpitas , CA 95036
muwekma@muwekma.org
408-434-1668
408-434-1673
Ohlone / Costanoan

Amah/MutsunTribal Band
Irene Zwierlein, Chairperson
789 Canada Road
Woodside , CA 94062
amah_mutsun@yahoo.com
(650) 851-7747 - Home
(650) 851-7489 - Fax
Ohlone/Costanoan

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street
Union City , CA 94587
soaprootmo@msn.com
209-688-4753
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

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 PGE Santa Cruz Reinforcement project - Green Valley Transmission Line, Santa Cruz County

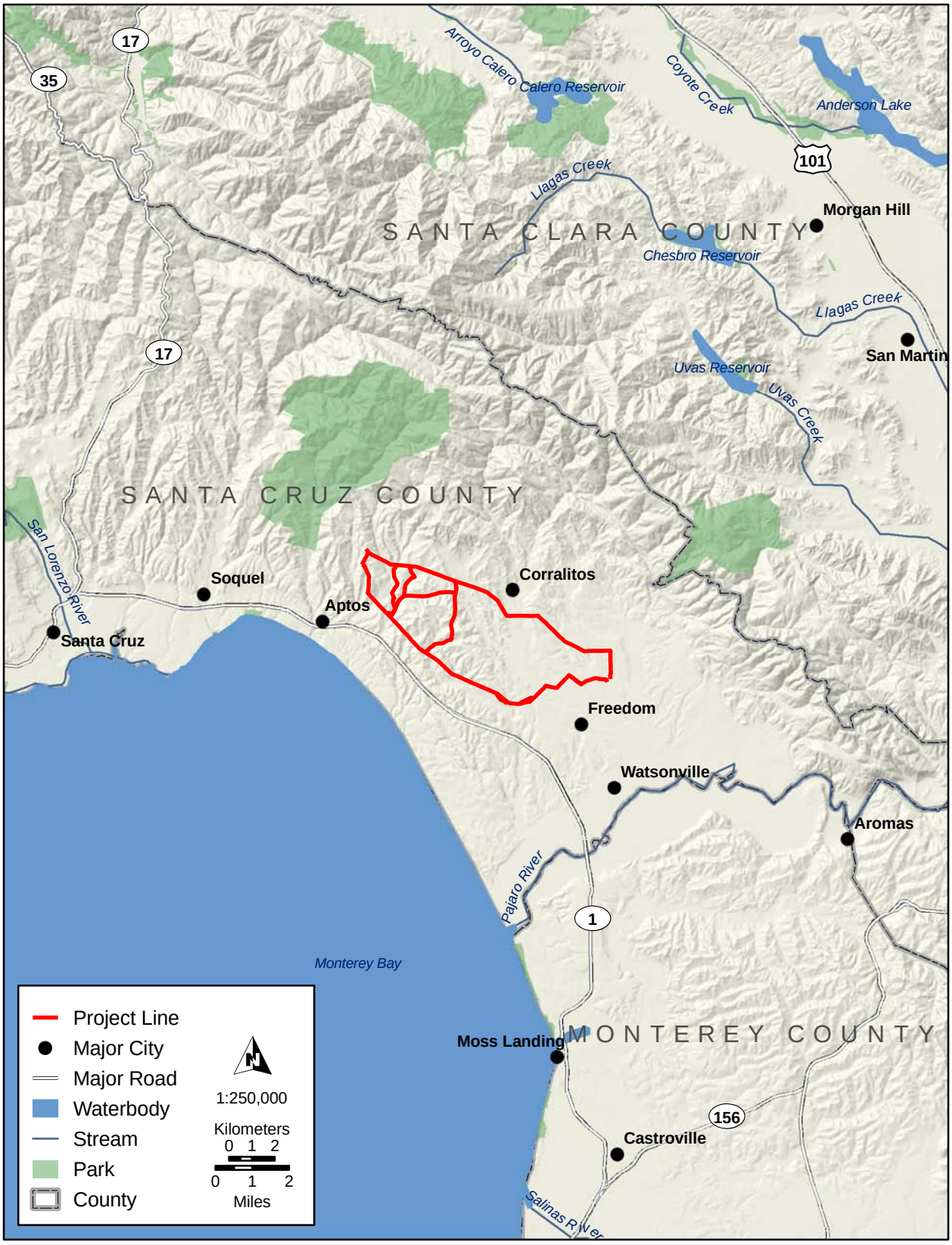
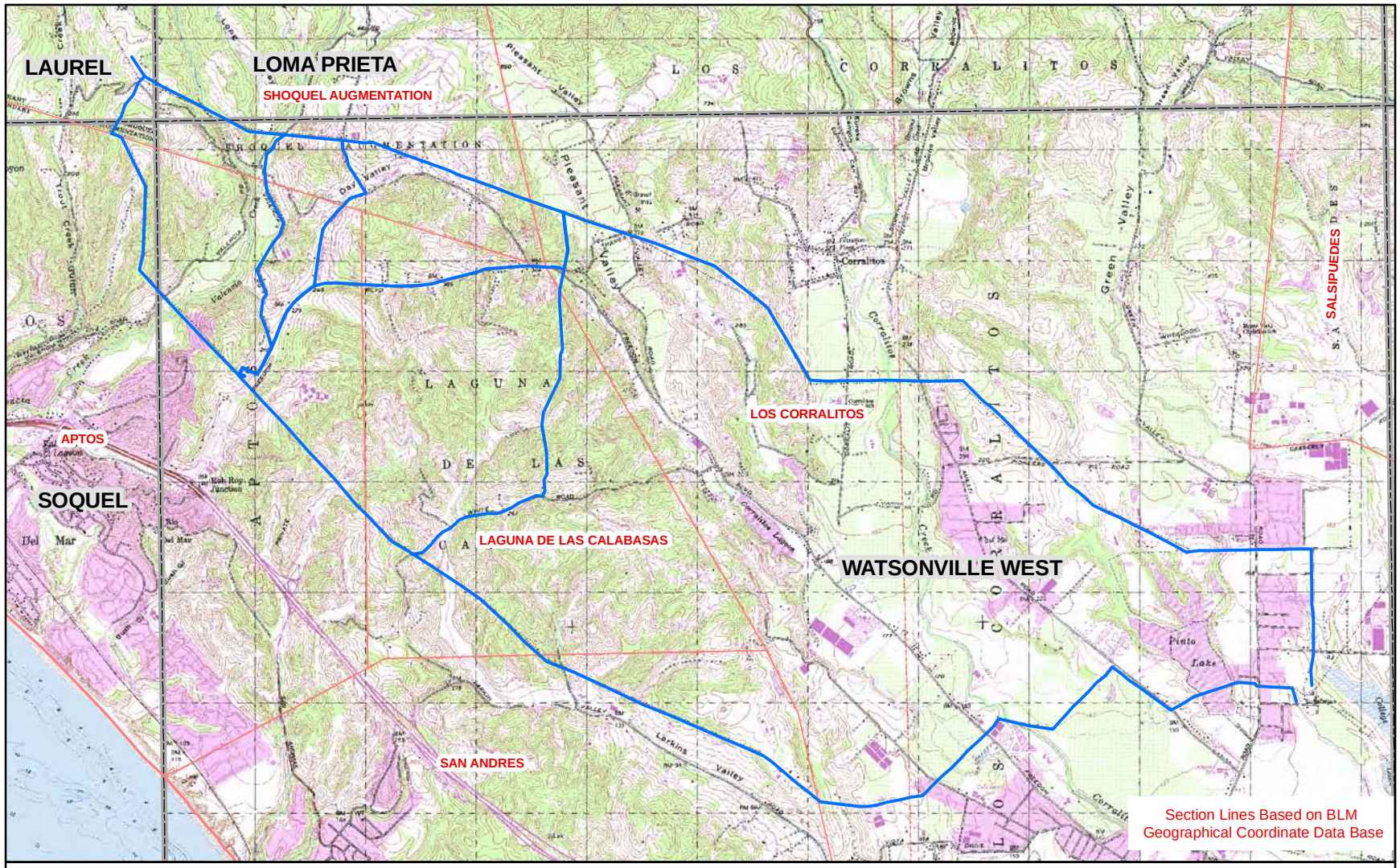


Figure 1. Project Location.



Portions of Laurel, Loma Prieta, Soquel, & Watsonville West 7.5' USGS Quadrangles
Aptos, Laguna de las Calabasas, Los Corralitos, San Andres, & Shoquel Augmentation Land Grants

Legend

Green Valley Transmission Line

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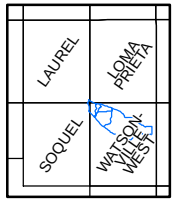
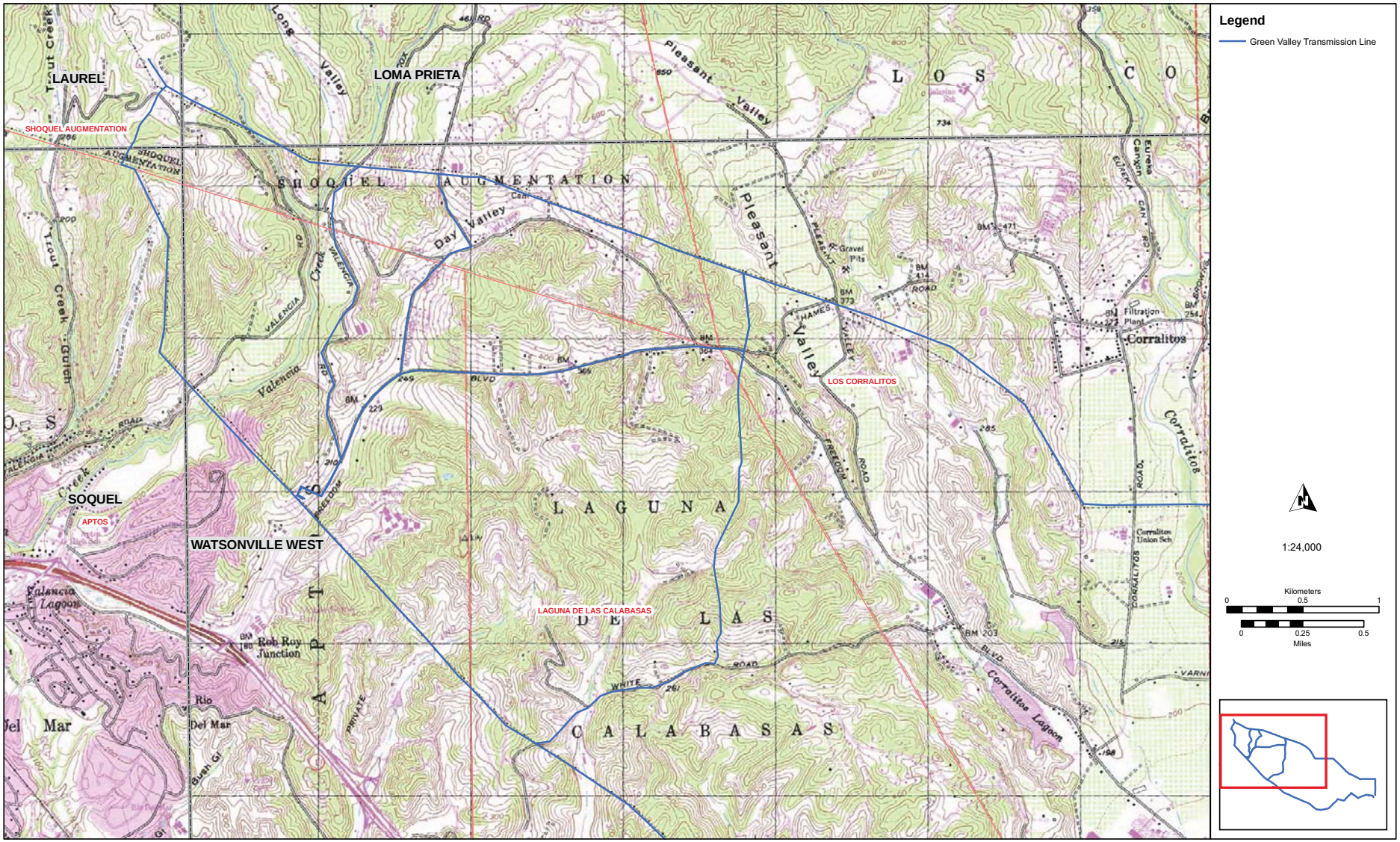
Kilometers

0 1 2
Miles

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LOMA PRIETA
SHOQUEL AUGMENTATION
SOQUEL
APTOS
WATSONVILLE WEST
LOS CORRALITOS
LAGUNA DE LAS CALABASAS
Corralitos
Rob Roy Junction
Rio Del Mar
Valencia Lagoon
Corralitos Lagoon
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Green Valley Transmission Line
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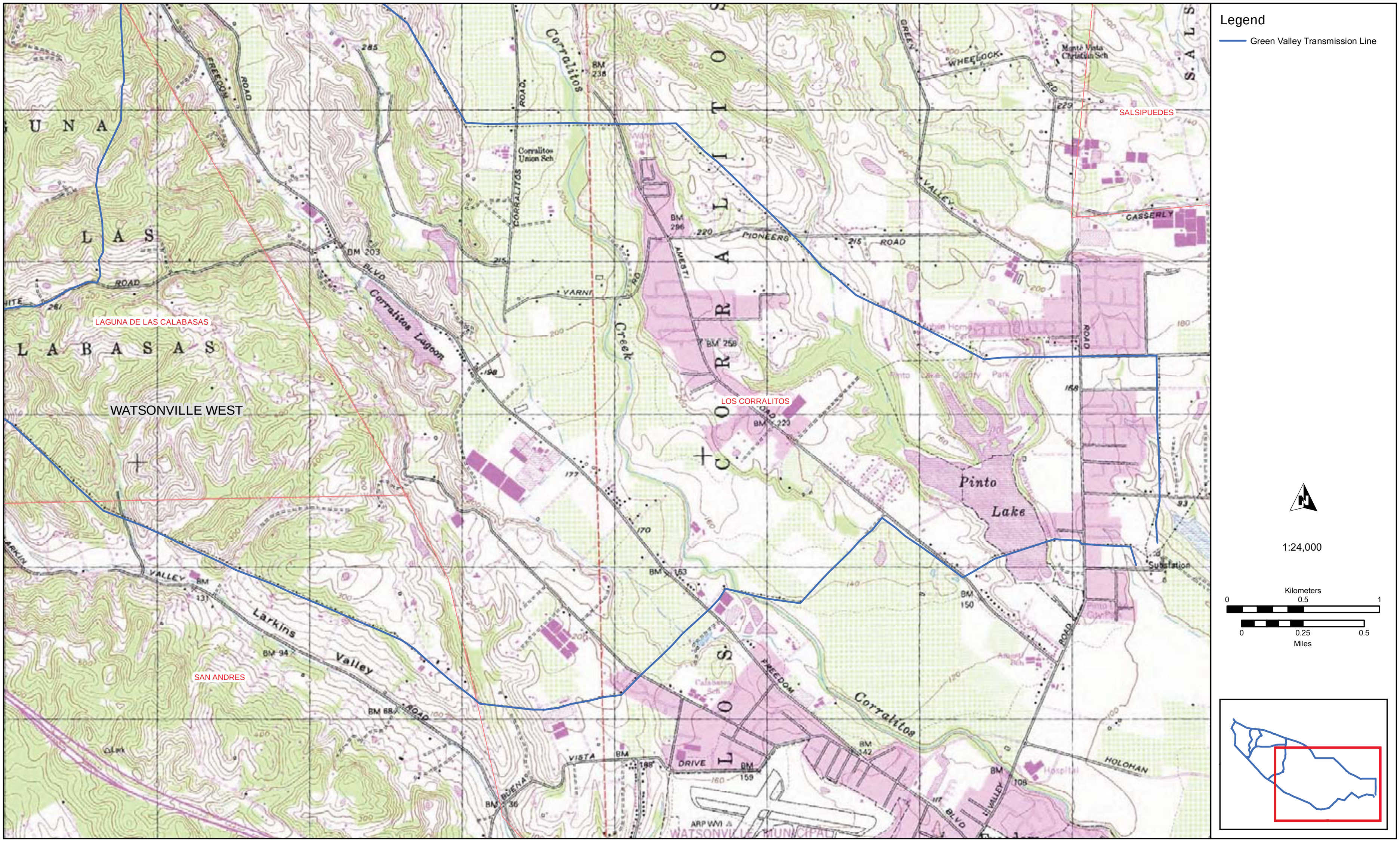
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Green Valley Transmission Line
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LAGUNA DE LAS CALABASAS
WATSONVILLE WEST
LOS CORRALITOS
SAN ANDRES
Pinto
Lake
Corralitos Lagoon
Larkins
Valley
Substation
WATSONVILLE MUNICIPAL

Table 1. Previously Recorded Resources within the Records Search Area.

Site Number	Site Type	Description	Relationship to APE	Eligibility	Most Recently Recorded By
CA-SCR-104/H	Prehist/Historic	Large, prolific site w/mixed historic. Possible human remains	Outside	Unevaluated	Edwards 1974
CA-SCR-113	Prehistoric	Light lithihc scatter, some shell	Outside	Unevaluated	Tyler and Dudek 1975
CA-SCR-146	Prehistoric	Seasonal/temporary camp	Outside	Unevaluated	Stafford 1976
CA-SCR-150	Prehistoric	Occupation with shell, debitage, groundstone	Outside	Unevaluated	Corey et al. 1994
CA-SCR-158	Prehistoric	Small occupation with shell, debitage	Outside	Unevaluated	Morris 1977
CA-SCR-209-H	Historic Building	Jose Joaquin Adobe (post 1830)	On Alternative 1 (north of 1C)	Listed on NRHP	Basin Research 1979
CA-SCR-226	Prehistoric	Seasonal/temporary camp	Outside	Unevaluated	Johnson 1979
CA-SCR-295	Prehistoric	Light lithihc scatter	Outside	Unevaluated	Hall and Jackson 1992
CA-SCR-44/H	Prehistoric	Habitation site with burials and other features	Outside	Eligible	Far Western 2002
CA-SCR-51	Prehistoric	Habitation site with burials and other features	Outside	Likely Eligible	Bolt and Grosscup 1953
CA-SCR-601	Historic Structure	Crawford Outhouse	Outside	Unevaluated	Webster and Associates 2007
P-44-000343	Historic Structure	Erosion control device (est. 1940s)	Outside	Unevaluated	Morgan 1998
P-44-000410	Historic Building	1880-1900	Outside	Recommended as not eligible	Kobza 1998
P-44-000458	Historic Building	Valencia Hall-1889	Adjacent to Alt 3	Listed on NRHP	Engle and Duval 2001
P-44-000459	Historic Building	Valencia General Store 1882-1909	Adjacent to Alt 3	Recommended eligible	Engle and Duval 2001
P-44-000599	Historic Building	Farm Equipment 1930s, 40s, 50s	Outside	Unevaluated	Roop 2006
Unrecorded Site		Unknown	Adjacent to Alternative 1	Unevaluated	
Unrecorded Site	Prehistoric	Mortars and Pestles	Outside	Unevaluated	

Notes: NRHP – National Register of Historic Places.

November 15, 2010

Jakki Kehl
720 North 2nd Street
Patterson, CA 95363

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Kehl:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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We are contacting you to ask if you know of any other cultural resources in or adjacent to the project area, or issues that you would like PG&E to consider in the selection of a project alternative. If you have any concerns about any area of the potential project area as outlined in the attached maps or would like more information about the project, please contact me at your earliest convenience at (530) 756-3941 x119, or by email at adie@farwestern.com.

Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Linda G. Yamane
1585 Mira Mar Ave.
Seaside, CA 93955

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Yamane:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Valentin Lopez, Chairperson
Amah Mutsun Tribal Band
3015 Eastern Ave, #40
Sacramento, CA 95821

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Mr. Lopez:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Edward Ketchum
Amah Mutsun Tribal Band
35867 Yosemite Ave.
Davis, CA 95616

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Mr. Ketchum:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Irene Zweirlein, Chairperson
Amah Mutsun Tribal Band
789 Canada Road
Woodside, CA 94062

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Zweirlein:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Jean-Marie Feyling
Amah Mutsun Tribal Band
19350 Hunter Court
Redding, CA 96003

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Feyling:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Patrick Orozco
Costanoan Ohlone Rumsen-Mutsen Tribe
644 Peartree Drive
Watsonville, CA 95075

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Mr. Orozco:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Sayers:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Rosemary Cambra
P.O. Box 360791
Milpitas, CA 95036

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Cambra:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

November 15, 2010

Ramona Garibay, Representitive
Trina Marine Ruano Family
30940 Watkins Street
Union City, CA 94587

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Garibay:

This letter is to let you know about an upcoming project and to ask if you have information or issues that you would like to share regarding the project and/or project area. Pacific Gas and Electric Company (PG&E) is planning to re-conductor and reroute an existing transmission line in Santa Cruz County. Impacts from the project area are expected to include moving equipment and landing helicopters in several spots, clearing of trees and brush, and excavation of guard areas along the route at its intersection with streets, highways, and railroad tracks.

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

December 3, 2010

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Sayers,
Per our conversation this afternoon, enclosed is the consultation letter that I sent last month. I have also included a figure which shows the location of known sites and a table which provides a brief description of each. If you think of anything of concern that you would like to pass along, please contact me at your convenience (530) 756-3941, adie@farwestern.com.

Also, as I said, I will update you on the results of our survey once an alternative has been selected and we have been in the field.

Sincerely,

Adie Whitaker,
Project Director

November 15, 2010

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

Adie Whitaker

From: Adie Whitaker [adie@farwestern.com]
Sent: Monday, December 20, 2010 8:24 AM
To: 'patrick orozco'
Subject: RE: Santa Cruz PG&E Project

Thanks for your response,

I realize the maps are a little vague. The project is still in the development stages and therefore the study areas are more general at this point. I could send you more detailed maps if you like (there would be several sheets) or I can make a note to get back in touch with you when PG&E has chosen a route and when we know exactly what areas the project will impact. I assume that any sites you recorded with Rob Edwards would have shown up on our records search. I would definitely be interested to know where the unrecorded sites are.

Please let me know if you would like yet-more-detailed maps, otherwise I will make sure to give you a call when we have a more definite sense of where the project will impact and before we head out to survey.

Adie

Adrian Whitaker, Ph.D.
Project Director/Co-P.I.

Far Western Anthropological Research Group
2727 Del Rio Pl., Suite A
Davis, CA 95618
Phone: (530) 756-3941
Fax: (530) 756-0811
adie@farwestern.com

From: patrick orozco [mailto:yanapvoic@earthlink.net]
Sent: Friday, December 10, 2010 2:22 PM
To: Adie Whitaker
Subject: Re: Santa Cruz PG&E Project

HELLO ADIE

ITS HARD TO READ YOUR MAPS TO SEE HOW CLOSE YOU WILL BE TO RECORDED SITES IN THOSE AREAS BESIDES THE SITES THAT HAVE NOT BEEN RECORDED. I AND MR ROBERT EDWARDS OF CABRILLO COLLEGE HAVE GONE OUT AND RECORDED SITES IN PAST YEARS AND I DO KNOW WHERE SOME OF THESE CULTURAL SITE ARE LOCATED. PATRICK OROZCO (831)728-8471

On Nov 29, 2010, at 9:40 AM, Adie Whitaker wrote:

Hi Mr. Orozco,

I received your message on Wednesday (I was in the field on another project) and wanted to get back to you regarding this project. To clarify, the project will only include the thin blue lines on the project map that I sent you. I attach the records search result map, which is hopefully a little clearer. The black lines labeled in black type are the project alternatives. The second page of the attached document is a summary of what

the resources are. Please note that the large “possible site” area is not actually that large, but is simply the rough location that someone in the 1950s said a site was located.

I’ll follow up tomorrow with a telephone call, but please feel free to give me a call if you have any questions.

Adie

Adrian Whitaker, Ph.D.
Project Director/Co-P.I.

Far Western Anthropological Research Group
2727 Del Rio Pl., Suite A
Davis, CA 95618
Phone: (530) 756-3941
Fax: (530) 756-0811
adie@farwestern.com

<Records Search Results.pdf>

December 3, 2010

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

Dear Ms. Sayers,
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Also, as I said, I will update you on the results of our survey once an alternative has been selected and we have been in the field.

Sincerely,

Adie Whitaker,
Project Director

November 15, 2010

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Proposed PG&E Santa Cruz 115kV Reconductoring Project

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Thank you very much for your time and effort.

Sincerely,

Adrian Whitaker, Ph.D.
Project Director

Attachment: Project Maps

Pacific Gas and Electric Company®

Santa Cruz 115 kV Reinforcement Project
Introductory Project Overview
April 2011

PROJECT OVERVIEW

In response to a request by the California Independent System Operator (CAISO) to increase electric reliability in the Santa Cruz County service area, Pacific Gas and Electric Company (PG&E) is proposing to construct the Santa Cruz 115 Kilovolt (kV) Reinforcement Project (project), a new 115 kV power line between Green Valley Substation located north of the City of Watsonville, and Rob Roy Substation located in the community of Aptos.

The entire project is located in unincorporated areas of southern Santa Cruz County, spanning approximately 9.6 miles and crossing through the communities of Amesti, Corralitos, Pleasant Valley, and Day Valley. In order to minimize potential environmental impacts, the new circuit is proposed to be located in existing utility corridors and co-located on shared poles with the existing, single-circuit Green Valley-Camp Evers 115 kV Power Line and with existing 12 kV distribution lines between Cox Road and Freedom Boulevard in Aptos.

POWER LINE ROUTE

The majority of the project (Green Valley-Camp Evers Segment) consists of rebuilding the existing single-circuit Green Valley-Camp Evers 115 kV Power Line into a double-circuit line from Green Valley Substation north for approximately 0.9 miles and then northwest roughly 7.8 miles through agricultural fields, open space, and rural residential developments to a point near the intersection of Cox Road and Leslie Lane in Aptos. The existing Green Valley-Camp Evers 115 kV Power Line continues on from Aptos to Scotts Valley, but no work is planned along this segment of the line. Rebuilding the existing power line to a double-circuit will require replacing the existing wood poles with stronger tubular steel poles (TSPs) to support the additional three conductors.

The remaining approximately 1.8 miles of the proposed project (Cox Road-Freedom Boulevard Segment) consists of overbuilding several existing distribution lines to support the addition of a new 115 kV power line circuit. The new line will be co-located with existing distribution lines on new TSPs, light-duty steel poles, and/or wood poles. The Cox Road-Freedom Boulevard Segment, all in the community of Aptos, runs south within unpaved road shoulders along Cox Road for approximately 0.4 mile, turns west onto Day Valley Road for approximately 0.1 mile, south on McDonald Road for approximately 0.6 mile, and southwest along Freedom Boulevard for approximately 0.7 mile until reaching Rob Roy Substation.

SUBSTATION WORK

The project will add new equipment at both Green Valley Substation and Rob Roy Substation to accommodate the additional 115 kV circuit. The modifications will be entirely on PG&E property, although fencing in both locations will be relocated around the new equipment.

SCHEDULE

Construction on the project must begin in May of 2013 to meet the operations target of November 30, 2013.

Figure 1: Project Overview Map

Santa Cruz 115 kV Reinforcement Project

Northern Alignment

Crossover Line

Existing Substation

Pacific Gas and Electric Company

INSIGNIA ENVIRONMENTAL

1:30,000

0 0.5 1 2 Miles

Privileged and Confidential—Attorney/Client Communication

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03/31/2011

FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

May 12, 2011

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Update on the Proposed PG&E Santa Cruz 115kV Reinforcement Project

Dear Ms. Sayers:

I wanted to update you on our progress regarding the proposed PG&E Santa Cruz 115kV Reinforcement Project located in Santa Cruz County. Last November, you received a letter from us which described three alternatives under review by PG&E, the results of our records search for the proposed alternatives, and a request for information or concerns you might consider relevant to the project. PG&E has since selected a preferred alternative which crosses through the communities of Amesti, Corralitos, Pleasant Valley, and Day Valley. I have enclosed a short description and map of this alternative that was prepared by PG&E. Your request that a monitor be present during field work was conveyed to PG&E.

No previously recorded sites are located along the preferred project alignment and no prehistoric or ethnohistoric resources were identified during our fieldwork. Our geoarchaeological sensitivity study indicates this alternative contains a moderately sensitive potential for buried prehistoric resources, which will be reflected in our recommendations.

If you have any additional information or concerns relating to this preferred alternative please contact me at your earliest convenience at (530) 756-3941 x111, or by email at allika@farwestern.com. We appreciate your interest and input in this project.

Sincerely,

Allika Ruby

Allika Ruby
Field Director

Attachment: Project Description and Map prepared by PG&E April 2011

FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

May 12, 2011

Ramona Garibay, Representative
Trina Marine Ruano Family
30940 Watkins Street
Union City, CA 94587

Re: Update on the Proposed PG&E Santa Cruz 115kV Reinforcement Project

Dear Ms. Garibay:

I wanted to update you on our progress regarding the proposed PG&E Santa Cruz 115kV Reinforcement Project located in Santa Cruz County. Last November, you received a letter from us which described three alternatives under review by PG&E, the results of our records search for the proposed alternatives, and a request for information or concerns you might consider relevant to the project. PG&E has since selected a preferred alternative which crosses through the communities of Amesti, Corralitos, Pleasant Valley, and Day Valley. I have enclosed a short description and map of this alternative that was prepared by PG&E.

No previously recorded sites are located along the preferred project alignment and no prehistoric or ethnohistoric resources were identified during our fieldwork. Our geoarchaeological sensitivity study indicates this alternative contains a moderately sensitive potential for buried prehistoric resources, which will be reflected in our recommendations.

If you have any additional information or concerns relating to this preferred alternative please contact me at your earliest convenience at (530) 756-3941 x111, or by email at allika@farwestern.com. We appreciate your interest and input in this project.

Sincerely,

Allika Ruby

Allika Ruby
Field Director

Attachment: Project Description and Map prepared by PG&E April 2011

FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

May 12, 2011

Patrick Orozco
Costanoan Ohlone Rumsen-Mutsen Tribe
644 Peartree Drive
Watsonville, CA 95075

Re: Update on the Proposed PG&E Santa Cruz 115kV Reinforcement Project

Dear Mr. Orozco:

I wanted to update you on our progress regarding the proposed PG&E Santa Cruz 115kV Reinforcement Project located in Santa Cruz County. Last November, you received a letter from us which described three alternatives under review by PG&E, the results of our records search for the proposed alternatives, and a request for information or concerns you might consider relevant to the project. PG&E has since selected a preferred alternative which crosses through the communities of Amesti, Corralitos, Pleasant Valley, and Day Valley. I have enclosed a short description and map of this alternative that was prepared by PG&E.

No previously recorded sites are located along the preferred project alignment and no prehistoric or ethnohistoric resources were identified during our fieldwork. Our geoarchaeological sensitivity study indicates this alternative contains a moderately sensitive potential for buried prehistoric resources, which will be reflected in our recommendations. I understand you might have some knowledge of sites acquired during your years of work with Rob Edwards of Cabrillo College; we are interested in knowing whether any are located along this alignment as none are mapped at the regional information center.

If you have any additional information or concerns relating to this preferred alternative please contact me at your earliest convenience at (530) 756-3941 x111, or by email at allika@farwestern.com. We appreciate your interest and input in this project.

Sincerely,

Allika Ruby

Allika Ruby
Field Director

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Geology and Soils				
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?[1]			✓	
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?			✓	

[1] References Divisions of Mines and Geology Special Publication #42

Would the project:	Potentially Significant Impact	Less than Significant 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?				✓
Mineral Resources				
f) 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?				✓
g) 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?				✓

3.6.1 Introduction

This section describes the existing geologic and pedogenic soil conditions in the project area. Topography and mineral resources are addressed, and potential geologic hazards are assessed, including those associated with strong seismic shaking and the manner in which these conditions and potential hazards could affect the project. With the implementation of PG&E's applicant-proposed measures (APMs), the construction and operation and maintenance (O&M) of the project will result in either less-than-significant or no impacts to geology and soils, and less-than-significant impacts to mineral resources.

3.6.2 Methodology

Information on the existing conditions and the potential impacts associated with geologic hazards was obtained from a review of geologic and mineral resource literature relevant to the project area. This material primarily included publications from the United States (U.S.) Geological Survey (USGS) and the California Geological Survey (CGS). Planning documents prepared by Santa Cruz County (County) were also reviewed, as was information from the U.S. Department of Agriculture (USDA) and the California Department of Conservation.

3.6.3 Existing Conditions

3.6.3.1 Regulatory Background

Federal

No federal plans or policies concerning geology, soils, or mineral resources apply to the project.

State

Alquist-Priolo Earthquake Fault Zoning Act of 1972

In response to the 1971 San Fernando earthquake, which damaged numerous homes, commercial buildings, and other structures, California passed the Alquist-Priolo Earthquake Fault Zoning Act. The act, formerly known as the Special Studies Zoning Act, regulates construction and development of buildings intended for human occupancy to avoid rupture hazards from surface faults. The act does not specifically regulate electric facilities, but it does assist in defining areas where fault rupture is likely to occur.

In accordance with the law, the CGS establishes regulatory zones around surface traces of active faults and issues corresponding maps for affected areas. Additionally, any project that involves the construction of buildings or structures for human occupancy is subject to review under this law. Structures for human occupancy must be constructed at least 50 feet (15 meters) from any active fault.

California Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act is designed to protect the public from the effects of strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations to identify hazards and formulate mitigation measures before permitting can be issued for most developments designed for human occupancy. The CGS has not yet developed any maps for the project area. However, Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California, provides additional guidelines for evaluating seismic hazards other than surface fault rupture and for recommending mitigation measures required by Public Resources Code Section 2695(a).

Surface Mining and Reclamation Act of 1975

Mineral resource zones are designated by the CGS where access to important mineral resources may be threatened, according to the provisions of the California Surface Mining and Reclamation Act of 1975 (SMARA). The SMARA requires that all jurisdictions incorporate mapped mineral resources approved by the State Mining and Geology Board (SMGB) into their general plans. The Department of Conservation's Office of Mine Reclamation (OMR) and the SMGB are jointly charged with ensuring proper administration of the act's requirements. The SMGB promulgates regulations to clarify and interpret the act's provisions and also serves as a policy and appeals board. The OMR provides an ongoing technical assistance program for lead agencies and operators, maintains a database of mine locations and operational information statewide, and is responsible for compliance-related matters.

California Building Code

The California Building Code (CBC) is codified in the California Code of Regulations (CCR) as Title 24, Part 2. Under state law, all building standards must be centralized in Title 24 to be enforceable, which is administered by the California Building Standards Commission. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2007 CBC is based on the 2006 International Building Code. Except for control enclosures, public utility equipment is exempt from the CBC.

The CBC contains necessary California amendments, which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC values range from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Once a project is categorized according to SCD, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures, throughout California.

California Public Utilities Commission General Order 95

California Public Utilities Commission General Order 95 Rules for Overhead Line Construction (GO 95) provides general standards for the design and construction of overhead electric transmission and distribution lines.

Institute of Electrical and Electronics Engineers 693

The Institute of Electrical and Electronics Engineers (IEEE) is an international professional organization and a widely recognized authority in the development of industry standards for electrical engineering and electric power generation and transmission. IEEE 693 Recommended Practices for Seismic Design of Substations contains guidelines for earthquake-resistant substation design and construction.

Local

Local authority over the project is limited to ministerial permitting per the California Public Utilities Commission (CPUC) General Order 131D Section III C. 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. The CPUC, having exclusive discretionary jurisdiction for this project, will also undertake the necessary CEQA compliant review. The following analysis of local regulations relating to geology, soils and minerals is provided for informational purposes and to assist with CEQA review.

Santa Cruz County

Several portions of the County Code and the County's General Plan relate to geology, soils, and other geologic hazards. Title 16 of the County Code addresses geological and mineral resources and erosion control. Policies regarding the conservation of geological and mineral resources are also included in Chapter 5 of the County's General Plan.

Title 16 of the County Code provides regulations related to geologic hazards, grading, erosion control, and mining of areas under the authorization and direction of the SMARA. This chapter was adopted to comply with the SMARA and fulfill the purposes of the act. This chapter also sets forth the means for controlling soil erosion, sedimentation, and increased rates of water runoff. Included are minimum standards for the use of fill material, excavations, clearing of vegetation, revegetation of cleared areas, drainage control, and protection of exposed soil surfaces in order to protect downstream waterways and wetlands and to promote the safety, public health, convenience, and general welfare of the community. The provisions provided in this chapter also apply to the unincorporated areas of the County in the vicinity of the project area.

Chapter 6 of the County's General Plan provides the policies related to public safety, including geologic conditions and hazards. While not applicable to this project, the policies are provided to assist with CEQA review in Attachment 3.2-A: Policies Consistency Analysis.

3.6.3.2 Environmental Setting

Geologic Setting

The project site is located just west of the southern Santa Cruz Mountains within the California Coast Ranges physiographic province. The region is characterized by northwest-southeast-oriented mountain ranges that are aligned generally parallel to the coastline. This area is bordered on the southwest by marine terraces flanking the Pacific Ocean and on the southeast by the broad floodplain of the Pajaro River Valley near Watsonville. The project corridor extends from Green Valley in the southeast to the hills above Aptos in the northwest. The foothills in this region are composed of a variety of Quaternary-age sediments, including those deposited in a marine environment, as well as terrestrial alluvial, colluvial, and eolian (sand dune) deposits. These sedimentary deposits have been tectonically uplifted due to seismic strain along the San Andreas Fault zone northeast of the project area and subsequently dissected by stream channel erosion.

The project area consists of a variety of uplifted Quaternary-age sedimentary deposits. Pleistocene-age landforms within and near the project area include alluvial deposits—particularly in the eastern and central portions of the Northern Alignment. Sand dunes that formed topographically higher rolling landscape are located near the point where the Northern Alignment and Cox-Freedom Segment converge and adjacently west of the length of the Cox-Freedom Segment. Channel incision has deeply eroded weakly consolidated sediments, creating narrow canyons that often contain relatively flat floodplains of Holocene-age alluvium in limited sections of the Northern Alignment. Many of these floodplains are too small and/or narrow for separate Holocene deposits to be identified. However, within the broad Corralitos Creek and lower Valencia Creek floodplains, the "older" Holocene alluvium that is located west of Corralitos Creek is distinguished from the "younger" inset Holocene alluvium, which is within

and immediately surrounding the creek. Within the upper reaches of many stream canyons are deposits of Holocene colluvium, which include slope wash and landslides that have often been reworked by stream channels. Much of the western portion of the Northern Alignment and nearly the entirety of the Cox-Freedom Segment are within an area composed of colluvium deposits. The sizable extent of this unit within and near the project area is likely due to the weakly consolidated and highly erodible nature of the underlying substrate.

The County has identified areas within its boundaries that may potentially contain geologic hazards. Those areas are discussed in more detailed in the sections that follow.

Faults, Seismicity, and Related Hazards

Faults

The County is located in the vicinity of major regional seismic fault systems, including the San Andreas, Zayante-Vergeles, Ben Lomond, San Gregorio, Butano, and Monterey Bay fault zones. According to information provided by the USGS and CGS, and based on the major earthquakes that have occurred along these regional faults, each is considered active or potentially active due to movement occurring within the past 200 years, with the exception of the Ben Lomond Fault, for which insufficient data is available to determine its activity. Table 3.6–1: Approximate Distances and Magnitudes of Nearest Known Faults lists the approximate distance of the nearest fault systems to the project area, as well as their known maximum value of magnitude (Mw_{max}) and slip rate, which is measured in millimeters per year (mm/yr).

Table 3.6–1: Approximate Distances and Magnitudes of Nearest Known Faults

Fault System	Approximate Distance to Nearest Segment of Fault from Project (miles)	Upper Bound Earthquake Magnitude[2] (Mw_{max})	Slip Rate (mm/yr)
Ben Lomond	7.0	--	--
Butano	4.0	6.4	--
Monterey Bay	7.0	7.3	0.1 to 0.9
San Gregorio	12.0	7.0	1.0 to 5.0
San Andreas (Santa Cruz Mountains section)	4.0	7.0	13.0 to 21.0
Zayante-Vergeles	0.0	7.0	0.0 to 0.21

Sources: USGS, 2011; CGS, 2011

According to geographic information system (GIS) data provided by the County and the USGS, the Zayante-Vergeles fault is the closest fault to the project area. The Zayante-Vergeles fault crosses the Northern Alignment approximately 0.15 mile north of the intersection of Harrison Way and Whiteman Avenue, and runs eastward, parallel to the Northern Alignment. The geometry of the Zayante-Vergeles fault is relative to the San Andreas fault system and is capable of producing major earthquakes of magnitude 7.0 on the Richter scale.

[2] Cao et al., 2003.

Fault Rupture

Ground surface rupture, or fault rupture in the San Francisco Bay Area, is associated with earthquakes of magnitude 5.8 and greater. The County General Plan provides that projects within its jurisdiction located within earthquake fault zones require geologic evaluation to determine if a potential hazard exists from any fault, whether or not it was previously recognized.

The project area is located within the Watsonville West quadrangle, as delineated by the CGS under the Alquist-Priolo Earthquake Fault Zoning Act. The San Andreas and San Gregorio faults are the most likely to experience a major earthquake that would affect the project site, as predicted by the USGS Working Group on California Earthquake Probabilities (USGS, 2011e). West of San Francisco Bay, the San Andreas and San Gregorio faults have a nearly 30 percent mean combined probability for a magnitude 6.7 earthquake to occur by the year 2031.

The most recent major movement along the San Andreas Fault in the County occurred during the Loma Prieta earthquake that occurred on October 17, 1989. The Loma Prieta earthquake was a magnitude 7.1 on the Richter scale and had a surface rupture of 2.5 centimeters. The City of Santa Cruz was one of the most impacted communities by the 1989 earthquake. Its epicenter was located approximately 10 miles east of the City of Santa Cruz, on the San Andreas Fault. In the downtown area, 34 commercial buildings were demolished and several more buildings were damaged. As previously mentioned, the Zayante-Vergeles fault, which is relative to the San Andreas fault system in its geometry, crosses the project area. However, the most recent prehistoric deformation of the Zayante-Vergeles fault occurred in the late Quaternary period. Table 3.6–1: Approximate Distances and Magnitudes of Nearest Known Faults lists each of the faults located in the vicinity of the project, and provides the distances from the project area, the known upper bound magnitudes, and the slip rates.

Strong Ground Motion

Strong ground motion or intensity of seismic shaking during an earthquake is dependent on the distance from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the area. Structures founded on thick, friable soil deposits are more likely to experience destructive shaking than those founded on bedrock.

An earthquake is commonly described by the amount of energy released, which has traditionally been quantified using the Richter magnitude scale. However, seismologists have recently begun using a “moment magnitude scale” because it provides a more accurate measurement of a major earthquake’s size. The moment magnitude and Richter magnitude scales are almost identical for earthquakes of less than magnitude 7.0. Moment magnitude scale readings are slightly greater than a corresponding Richter magnitude scale reading for earthquakes greater than magnitude 7.0. The maximum magnitude earthquake is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework. As previously described, the Loma Prieta Earthquake was measured at magnitude 7.1 and occurred along the San Andreas Fault in 1989. The epicenter of the quake was in the Forest of Nisene Marks State Park, approximately 2 to 3 miles north of the unincorporated community of Aptos. This appears to be the strongest earthquake recorded within the project vicinity in the recent past.

Soils

The soils underlying the project site consist of five different soil units, as shown in Table 3.6–2: Soil Unit Characteristics for the Project. Unclassified soil covers the majority of the project area (approximately 58 percent), including 100 percent of the Cox-Freedom Segment, Rob Roy Substation Modification, and Rob Roy Substation Connections, and approximately 48 percent of the Northern Alignment.

Watsonville loam, with 0- to 15-percent slopes, comprises approximately 37 percent of the Northern Alignment. In addition, less than 0.32 mile of the northern portion of the Northern Alignment (between Milepost [MP] 3.27 and 3.32) is located in an area with 15- to 30-percent slopes. Watsonville loam has a moderate capacity to hold water and is formed from alluvial parent material in the form of marine terraces. This soil unit has a low capacity to transmit water and is found in claypan ecological sites, which are situated in till plains, uplands, and terraces. Pinto loam, with slopes ranging between 0 and 15 percent, is found in approximately 14 percent of the Northern Alignment pole locations. This soil unit has a very high capacity to hold water and a moderate capacity to transmit water. It is found in claypan ecological sites and is formed from alluvial parent material and/or marine deposits.

In addition, approximately 0.4 percent of the project area is found on soils composed of Diablo clay with slopes between 9 and 15 percent, specifically between approximate MP 0.17 and 0.21. This soil type is well drained with a moderately low to moderately high ability to transmit water and a very high ability to hold water. It is found in clayey ecological sites, and is formed from material weathered from sandstone or shale.

Liquefaction

Liquefaction occurs when loose sands and silts that are saturated with water behave like liquids when strong ground shaking occurs. Seismic waves can cause the pore pressure in the soils to build until the soil grains lose contact, thereby causing the soil to lose tensile strength and move like a liquid. Higher pore pressure occurs as the soil attempts to compact in response to the shaking, resulting in less grain-to-grain soil contact and loss of strength. Typically, loose, fine-grained sands and silts below the water table are the most susceptible to liquefaction. Medium-density sands and silts below the water table may also liquefy if the shaking is of sufficient severity and duration. Structures supported by a liquefying soil may sustain damage due to loss of foundation support. According to GIS data provided by the County, the project is located in an area with mostly low to moderate liquefaction potential. However, there are a few areas that possess high and very high liquefaction potential along the Northern Alignment between the communities of Corralitos and Freedom.

Slope Instability

Strong ground motion can result in rockfall hazards and/or slope instability. The slopes most susceptible to earthquake-induced failure include those with highly weathered and unconsolidated materials on moderately steep to steep slopes (especially in areas of previously existing landslides).

Table 3.6–2: Soil Unit Characteristics for the Project

Approximate Milepost		Soil Unit	Slope	Drainage Capability	Ability of Most Limiting Layer to Transmit Water	Ability of Most Limiting Layer to Hold Water
Start	End					
0.00	0.01	Pinto Loam	0 to 2 percent	Moderately well	Moderately low to moderately high	Very high
0.01	0.07	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
0.07	0.17	Pinto Loam	0 to 2 percent	Moderately well	Moderately low to moderately high	Very high
0.17	0.17	Pinto Loam	9 to 15 percent	Moderately well	Moderately low to moderately high	Very high
0.17	0.21	Diablo Clay	9 to 15 percent	Well drained	Moderately low to moderately high	Very high
0.21	0.36	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
0.36	0.46	Pinto Loam	9 to 15 percent	Moderately well	Moderately low to moderately high	Very high
0.46	0.64	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
0.64	0.70	Pinto Loam	2 to 9 percent	Moderately well	Moderately low to moderately high	Very high
0.70	1.02	Pinto Loam	0 to 2 percent	Moderately well	Moderately low to moderately high	Very high
1.02	1.08	Pinto Loam	2 to 9 percent	Moderately well	Moderately low to moderately high	Very high
1.08	1.28	Pinto Loam	0 to 2 percent	Moderately well	Moderately low to moderately high	Very high

Approximate Milepost		Soil Unit	Slope	Drainage Capability	Ability of Most Limiting Layer to Transmit Water	Ability of Most Limiting Layer to Hold Water
Start	End					
1.28	1.38	Watsonville Loam Thick Surface	0 to 2 percent	Somewhat poorly drained	Very low to moderately low	Moderate
1.38	1.44	Unclassified	--	--	--	--
1.44	1.62	Watsonville Loam Thick Surface	0 to 2 percent	Somewhat poorly drained	Very low to moderately low	Moderate
1.62	1.67	Unclassified	--	--	--	--
1.67	1.79	Watsonville Loam Thick Surface	0 to 2 percent	Somewhat poorly drained	Very low to moderately low	Moderate
1.79	1.90	Pinto Loam	2 to 9 percent	Moderately well	Moderately low to moderately high	Very high
1.90	1.95	Watsonville Loam Thick Surface	0 to 2 percent	Somewhat poorly drained	Very low to moderately low	Moderate
1.95	2.03	Unclassified	--	--	--	--
2.03	2.12	Watsonville Loam Thick Surface	0 to 2 percent	Somewhat poorly drained	Very low to moderately low	Moderate
2.12	2.51	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
2.51	2.60	Watsonville Loam Thick Surface	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
2.60	2.93	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
2.93	3.00	Pinto Loam	2 to 9 percent	Moderately well	Moderately low to moderately high	Very high
3.00	3.27	Watsonville Loam Thick Surface	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
3.27	3.32	Watsonville Loam Thick Surface	15 to 30 percent	Somewhat poorly drained	Very low to moderately low	Moderate
3.32	3.39	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate

Approximate Milepost		Soil Unit	Slope	Drainage Capability	Ability of Most Limiting Layer to Transmit Water	Ability of Most Limiting Layer to Hold Water
Start	End					
3.39	3.45	Unclassified	--	--	--	--
3.45	3.54	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
3.54	4.08	Unclassified	--	--	--	--
4.08	4.33	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
4.33	4.65	Unclassified	--	--	--	--
4.65	4.71	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
4.71	4.86	Unclassified	--	--	--	--
4.86	4.97	Watsonville Loam	2 to 15 percent	Somewhat poorly drained	Very low to moderately low	Moderate
4.97	7.13	Unclassified	--	--	--	--
7.13	8.88	Unclassified	--	--	--	--

Source: USDA, 2011

Landslides occur when masses of rock, earth, or debris move down a slope, including rock falls, deep failure of slopes, and shallow debris flows. The actuators of landslides can be both natural events (e.g., earthquakes, rainfall, erosion) and human activities. Those induced by humans are most commonly related to large grading activities that can potentially cause new slides or reactivate old ones when compacted fill is placed on potentially unstable slopes.

Excavation operations can also contribute to landslides when lateral support near the base of unstable hillside areas is removed. Conditions to be considered in regard to slope instability include slope inclination, characteristics of the soil materials, presence of groundwater, and degree of soil saturation.

The majority of the soil units that have been mapped in the project area have slopes between 0 and 15 percent. In the Northern Alignment, the classified soil units within the area are composed of either Watsonville loam with 0- to 15-percent slopes, or Pinto loam with 0- to 15-percent slopes, with the exception of the area between approximate MP 0.17 to 0.21, which is composed of Diablo clay with 9- to 15-percent slopes.

According to the USGS, landslide incidence in the project area is low. The project area contains few, if any, large mapped landslides. The project area is neither located in a principal debris-flow source area, nor has it been identified as being likely to produce debris flows by the USGS. In addition, the GIS data provided by the County does not indicate any known landslide hazard areas within the project site. The nearest landslide hazard areas are located northwest of the Northern Alignment, in the vicinity of the Forest of Nisene Marks State Park.

Topsoil

Soils are created through physical and chemical weathering of rocks that are exposed at or near the earth's surface. Soil is formed through a complex combination of physical, chemical, and biological processes, typically resulting in the uppermost portion (horizon) of the soil being the most fertile and productive for agricultural, silviculture, and other plant-related processes. Soil surveys by the USDA Natural Resources Conservation Service in the project area have classified soils by distinct soil types, and this information is compiled into reports and soil survey maps. The majority of soils in the project area are classified as Class 3 and Class 4 in terms of agricultural land capability, indicating that they have severe limitations that restrict the choice of plants and/or that require very careful management and conservation practices, with the main hazard being the risk of erosion. This indicates that the topsoil for the soils in the project area is generally shallow and unproductive for agricultural use. However, the Northern Alignment will cross approximately 0.94 mile of Prime Farmland, 0.65 mile of Farmland of Statewide Importance, and 0.18 mile of Unique Farmland, as discussed in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources.

Erosion

Soil erosion is the wearing away of the land surface by physical forces, such as rainfall, flowing water, wind, or other anthropogenic agents, that abrade or remove soil. Urban development, as well as construction activities, can expedite the erosion process by increasing runoff, decreasing infiltration rates, and exposing soils to the effects of wind and water. Erosion potential is

generally higher in areas with steep slopes and on sandy or high clay content soils, but also increases when vegetation is removed and soils are compacted.

Subsidence

Subsidence occurs most often when fluids are withdrawn from the ground, removing partial support for previously saturated soils. Natural soil subsidence can be caused by consolidation, hydrocompaction, and oxidation or dewatering of organic-rich soils. More rarely, subsidence occurs due to tectonic down-warping during earthquakes.

Expansive or Collapsible Soils

Expansive soils contain shrink-swell clays, such as smectite clays, that are capable of absorbing water. As these clays absorb water, they increase in volume, and these changes in volume are capable of exerting enough force on buildings and other structures to damage foundations and basement walls. Damage from expansive soils also occurs when the soils dry out and contract, causing subsidence and earth fissuring.

According to the Expansive Soils overlay provided by the County GIS Department, much of the Northern Alignment from Green Valley Substation to Corralitos is located within areas containing expansive soils. Between Green Valley Substation to approximately 850 feet northeast of the intersection of Whiteman Avenue and Harrison Way, between approximately 1,300 feet to 2,000 feet northwest of the intersection of Corralitos Road and Skylark Lane, and between approximately 1,650 feet to 1,950 feet southwest of the intersection of Hames Hollow and Hames Road are areas composed of expansive soils.

Mineral Resources

Within the County, the extraction of oil takes place in the San Ardo area; sand mining is conducted in Watsonville, Hollister, Marina, Scotts Valley, and the North County coast; and asbestos mining occurs in portions of San Benito County. The Octatillo/Simenez and Metz Facility (part of the Granite Construction Company) and the Granite Rock Company's Santa Cruz Sand Plant sites are located in the City of Watsonville, approximately 3 to 3.25 miles south of Green Valley Substation. No active mining operations are present in the project area. In addition, no significant economic mineral resources have been discovered within the limits of the project site.

3.6.4 Potential Impacts and Applicant-Proposed Measures

3.6.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act Guidelines. The standards for geology and soil and mineral resources are summarized separately in the sections that follow.

Geology and Soils

Impacts to geology and soils would be considered significant if the project:

- exposes people or structures to potential substantial adverse effects involving strong seismic ground shaking, fault rupture, liquefaction, or landslides
- results in substantial soil erosion or the loss of topsoil
- is 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
- is located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risks to life or property
- is located on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater

Mineral Resources

Impacts to mineral resources would be considered significant if the project:

- results in the loss of availability of a known mineral resource that may be of value to the region and the residents of the state
- results in the loss of availability of a locally important mineral resource recovery site that is delineated on a local general plan, specific plan, or other land use plan

3.6.4.2 Applicant-Proposed Measures

PG&E will implement APM HYD-01, which involves preparation and implementation of a project Storm Water Pollution Prevention Plan (SWPPP) and is more fully described in Section 3.8 Hydrology and Water Quality, as well as implement APM GEO-01 to ensure that construction of the project will result in a less-than-significant impact to geology, soils, and mineral resources.

APM GEO-01. Geotechnical Report.

PG&E will contract a professional geotechnical engineer to conduct a geotechnical investigation in areas that are suspected to have unstable soils or that could be subject to strong ground shaking. PG&E will consider the recommendations and findings in the geotechnical report in the project's final design to minimize the effects of expansive soils, differential settling, and strong ground shaking. When necessary, design features, such as engineered subgrades and reinforced foundations, will be incorporated into the project's design. In addition, PG&E will comply with all applicable codes and seismic standards.

3.6.4.3 Question 3.6a – Human Safety and Structural Integrity

Question 3.6a(i) – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? – Less-than-Significant Impact

As described in Section 3.6.3 Existing Conditions, at least six major regional seismic fault systems are located in the vicinity of the project. One of these faults—the Zayante-Vergeles fault—crosses the Northern Alignment of the project approximately 0.15 mile north of the intersection of Harrison Way and Whiteman Avenue. Although this fault has not been active in the past approximately 15,000 years, Pleistocene and possibly Holocene vertical displacement along the fault has occurred; seismic records strongly suggest that a section of the Zayante-Vergeles fault approximately 3 miles long underwent sympathetic movement in the 1989 earthquake, which could indicate that the Zayante-Vergeles fault is potentially still active. However, according to the Working Group on Northern California Earthquake Potential, fault rupture along the Zayante-Vergeles fault is capable of recurrence every 10,000 years; therefore, the potential for fault rupture of this fault in the project area is unlikely. The power lines and poles that will be installed for the project will be designed in accordance with the CPUC's GO 95 and the IEEE 693, and after considering the recommendations of the project-specific geotechnical report addressing certain areas of the project. Because there is a low likelihood of fault rupture in the project area and because the structures will be designed in accordance with GO 95 and IEEE 693, and will consider the results of the geotechnical investigation (as provided in APM GEO-01), impacts will be less than significant.

Question 3.6a(ii) – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking? – Less-than-Significant Impact

As discussed in Section 3.6.3 Existing Conditions, the project area is located near several major active faults and will likely experience strong to violent seismic ground shaking at some point during its operational lifetime. However, the new power poles and Rob Roy Substation Modification will typically be constructed within an existing PG&E parcel and corridors. Likewise, most poles will be placed at approximately the same or similar locations as the existing structures according to modern seismic design. In addition, any recommendations from the geotechnical report will be considered prior to final design. Thus, the project will not increase the potential for risks associated with strong seismic shaking and impacts will be less than significant.

Question 3.6a(iii) – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction? – Less-than-Significant Impact

As previously discussed, the majority of the Northern Alignment is located within areas considered to have a low potential for liquefaction, while the Cox-Freedom Segment, Rob Roy Substation Modification, and Rob Roy Substation Connections are located in an area considered to have a moderate potential for liquefaction. Eight pole locations within the Northern Alignment are located within areas considered to have either a high or very high liquefaction potential. In

addition, the majority of the eastern portion of the Northern Alignment is located in areas composed of expansive soils. The new power poles will generally be placed in close proximity to existing structures. In general, each tubular steel pole (TSP) will be bolted onto a concrete foundation with a maximum excavation depth of approximately 33 feet below ground surface. The new wood poles will be direct buried with setting depths of approximately 10 percent of the installed pole height plus 2 feet. Stub poles will be installed at an approximate depth of 5 feet.

If soils were to shrink or swell, this design would prevent catastrophic failure. Similarly, if liquefaction were to occur, it would not likely affect the overall safety of the line given that adjacent structures could support the line for short periods. Furthermore, the equipment in the modified Rob Roy Substation will be constructed according to CPUC requirements and will be contained within a relatively small area—approximately 50 feet north and east of the existing fence line. For these reasons, impacts from seismic-related ground failure (liquefaction and differential settlement) will be less than significant.

Question 3.6a(iv) – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides? – Less-than-Significant Impact

Portions of the project that are located in areas containing steep slopes could be subject to landslide hazards, including seismically induced landslides. As described in Section 3.6.3 Existing Conditions, the potential for fault rupture and strong to violent seismic shaking exists in the project area. Certain activities, such as grading and excavation activities associated with the Rob Roy Substation Modification and new pole locations, as well as the grading associated with new access roads and construction laydown areas, could increase the susceptibility of the terrain to slope failures. A total of approximately 30 acres of temporary work areas and access roads will be graded or mowed to reduce vegetative fuel during construction of the project. This includes approximately 118 pole work areas (78 that are approximately 140 by 100 feet, 37 with an approximate 20-foot diameter, and 3 with a diameter between 10 and 100 feet); approximately 15 temporary crossing structure work areas, averaging approximately 75 by 70 feet; approximately 5 pull sites that are approximately 460 by 210 feet and 4 pull sites that are approximately 115 by 70 feet; an approximately 565- by 20-foot work area associated with the Rob Roy Substation Modification; and approximately 12,260 feet of access road improvements and clearing spread throughout the project area. Thus, project activities will generally not result in large areas of ground disturbance within one contiguous area, and the majority of poles will be placed in the same or similar location as the existing structures. Additionally, according to GIS information provided by the County, the project area is not located in an area of potential landslides. Therefore, the project area is unlikely to experience an increase in exposure to seismically induced landslide hazards, and project impacts will be less than significant.

3.6.4.4 Question 3.6b – Would the project result in substantial soil erosion or the loss of topsoil?

Construction – Less-than-Significant Impact

As previously described, erosion potential is generally higher in areas with steep slopes and on sandy or high clay content soils, but also increases when vegetation is removed and soils are compacted. Clearing of vegetation, grading, paving, and excavation activities will be required during the construction of the project. As noted previously, a maximum of approximately

30 acres of land disturbance—primarily consisting of vegetation mowing and minor grading—is anticipated to be required during project construction. These activities will expose soil to erosion by compacting or mowing the vegetative cover and compromising the soil structure.

Rain and wind may further detach soil particles and transport them off site. Heavy rains and runoff can cause erosion, particularly in areas with exposed soil. The majority of the project area contains slopes between 0 and 15 percent. However, limited areas within the western portion of the Northern Alignment and Cox-Freedom Segment contain slopes between 15 and 50 percent. Steep slopes in the project area increase the potential for erosion, which could temporarily increase to high during construction.

As previously described in Section 3.6.3 Existing Conditions, the soils in the area are generally classified as Class 3 and Class 4 in terms of agricultural land capability, indicating that they have severe limitations restricting the choice of plants and/or requiring very careful management and conservation practices, with the main hazard being the risk of erosion. Two of the pole locations—one approximately 0.15 mile north of the intersection of Harrison Way and Whiteman Avenue and the other approximately 0.25 mile northwest of the intersection of Hames Road and Pleasant Valley Road—will be located on steep slopes. The Northern Alignment crosses some areas of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland in the eastern portion of the line. Construction of the project will not result in the permanent loss of productive agricultural fields because the majority of work will occur within existing utility corridors, where the existing poles will be replaced within the immediate proximity of their existing locations.

The soils within the project area consist primarily of loams and loamy sands, which are moderately erosive without consideration of other factors. However, standard erosion control procedures are expected to be adequate to control erosion during construction activities, as the work areas are spread across the project and are each relatively small in size (as described in Chapter 2 – Project Description). Thus, substantial loss of topsoil is not anticipated. With the implementation of the project's SWPPP, soil erosion will be minimized and impacts will be reduced to a less-than-significant level (refer to Section 3.8 Hydrology and Water Quality for more details regarding the requirements and implementation of the SWPPP). Work areas will be relatively small and ground disturbance will be minimized. As a result, any amount of erosion resulting from construction of the project will not be substantial, and impacts will be less than significant.

Operation and Maintenance – No Impact

Maintenance activities primarily occur and will continue to occur on above-grade structures. In addition, excavation activities are not expected to occur outside of the ROW during O&M activities. Should excavation activities be required during O&M of the project, they will most likely be in areas that were disturbed during construction or during previous O&M activities. Project-related O&M activities will not significantly change from currently existing conditions and no new impacts are anticipated. Therefore, the potential for soil erosion and topsoil loss to occur during O&M of the project is unlikely, and no impact will occur.

3.6.4.5 Question 3.6c – 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?

Construction – Less-than-Significant Impact

As previously described, portions of the project that are located in areas containing steep slopes could be subject to landslide hazards, including seismically induced landslides. As described in Section 3.6.3 Existing Conditions, the potential for fault rupture and strong to violent seismic shaking exists in the project area. Furthermore, ground disturbance, including grading and vegetation clearing and structure foundation installation, could create unstable conditions or worsen existing landslide risks. In addition, the underlying geologic deposit throughout the project area is composed of alluvium and the soils primarily include loams in the eastern portion of the Northern Alignment and loamy sands in the western portion of the Northern Alignment and Cox-Freedom Segment. Project activities will generally occur within PG&E's ROW and the majority of poles will be placed in the same or similar location as the existing structures. According to GIS information provided by the County, the project area is not located in an area of potential landslides. For these reasons and through implementation of the structural design provided by the project-specific geotechnical report that will be prepared for certain poles, impacts associated with construction of the project will be less than significant.

Operation and Maintenance – No Impact

Maintenance activities primarily occur and will continue to occur on above-grade structures. In addition, excavation activities are not expected to occur outside of the ROW during O&M activities. Should excavation activities be required during O&M of the project, they will most likely be required in areas that were disturbed during construction or during previous O&M activities. Project-related O&M activities will not significantly change from currently existing conditions and no new impacts are anticipated. Therefore, the potential for landslides to occur as the result of O&M of the project is unlikely, and no impact is anticipated.

3.6.4.6 Question 3.6d – Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Construction – Less-than-Significant Impact

As described in Section 3.6.3 Existing Conditions, expansive soils are found in the majority of the eastern portion of the Northern Alignment. No expansive soils are located in the other portions of the project area. Extremely expansive soils may damage project structures. However, the TSPs along the Northern Alignment will be installed onto a concrete foundation with a maximum excavation depth of approximately 33 feet below ground surface. In addition, as specified in APM GEO-01, PG&E will consider any further recommendations regarding the foundation design that are provided in the geotechnical report for certain project poles. Thus, the poles will be stabilized, and soil movement is not likely to cause an adverse impact to project structures. Consequently, impacts related to expansive soils will be less than significant.

Operation and Maintenance – No Impact

Maintenance activities primarily occur and will continue to occur on above-grade structures Project-related O&M activities will not significantly change from currently existing conditions and no new impacts are anticipated. Therefore, the potential for impacts resulting from expansive soils to occur as the result of O&M of the project is unlikely, and no impact is anticipated.

3.6.4.7 Question 3.6e – 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 the construction of any septic tanks or other wastewater disposal systems into soils. Accordingly, there will be no impact to soils in the project area from wastewater disposal.

3.6.4.8 Question 3.6f – Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? – No Impact

As previously discussed, no active mining operations are present in the project area and no significant economic mineral resources have been discovered within the limits of the project site. Therefore, the project will not result in the loss of any regional- or state-valued mineral resources; thus, no impact will occur.

3.6.4.9 Question 3.6g – 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? – No Impact

No active mining operations are present in the project area and no significant economic mineral resources have been discovered within the limits of the project site. Therefore, the project will not result in the loss of any locally important mineral resources, and no impact will occur.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.7 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less than Significant 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 that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?				✓
e) For a project within an airport land use plan or within two miles of a public airport or public use airport for which such a plan has not been adopted, result in a safety hazard for people residing or working in the project area?				✓

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fire, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

3.7.1 Introduction

This section discusses potential hazards to public health and safety associated with construction and operation and maintenance (O&M) of the project. This analysis addresses existing hazardous materials contamination, fire potential, hazards to public and worker health and safety, and physical hazards. As described in this section, the impacts associated with hazards will be less than significant with the implementation of the applicant-proposed measures (APMs) described in Section 3.7.4 Potential Impacts and Applicant-Proposed Measures.

3.7.2 Methodology

Information for this section was obtained by conducting a thorough review of state and federal databases that identify hazardous materials sites registered on one or more environmental oversight agency database lists within 0.25 mile of the project components. The reviewed databases include:

- California Department of Toxic Substances Control (DTSC) Cortese List (Envirostor Database)
- Toxic Alert for California Superfund sites
- United States (U.S.) Environmental Protection Agency (EPA) National Priorities List
- Comprehensive Environmental Response, Compensation, and Liability Information System
- Leaking Underground Storage Tank/Statewide Spills, Leaks, Investigations, and Cleanups sites (GeoTracker database)

The Emergency Preparedness Guide provided by the Office of Emergency Services (OES) for Santa Cruz County (County), the OES website, and the County's General Plan were reviewed for relevant hazards and hazardous materials policies, plans, and programs. Online research was also performed to identify the nearest public airports, public-use airports, and private airstrips to the project. In addition, the Santa Cruz County and San Mateo County Community Wildfire Protection Plan (CWPP) and the Watsonville Municipal Airport Master Plan were reviewed for further information related to potential fire and airport safety hazards in the project area.

3.7.3 Existing Conditions

3.7.3.1 Regulatory Background

Federal

United States Environmental Protection Agency

The EPA has deemed specific wastes as hazardous; these wastes are organized into the following three categories:

- F-List: Non-specific source wastes common in manufacturing and industrial processes. Wastes from the F-list are published under Title 40 of the Code of Federal Regulations (CFR) Section 261.31.

- K-List: Source-specific wastes from specific industries, including pesticide manufacturing and petroleum refining. K-list wastes are published under 40 CFR Section 261.32.

- P-List and U-List: Discarded commercial chemical products in an unused form. Wastes from the P- and U-lists are published under 40 CFR Section 261.33.

Wastes that have not been previously listed may still be considered hazardous if they exhibit one of the four characteristics stated in 40 CFR 261 Subpart C—i.e., ignitibility, corrosivity, reactivity, or toxicity.

Resource Conservation and Recovery Act

Developed by the EPA, the Resource Conservation and Recovery Act (RCRA) regulates hazardous and non-hazardous waste in an effort to reduce potential health and environmental issues associated with exposure to such materials. This law is implemented through Subtitle C, 42 U.S. Code (U.S.C.) Section 6921, et seq. and its implementing regulations, 40 CFR Section 260, et seq. Subtitle C of RCRA controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a "cradle-to-grave" system of hazardous waste management techniques and requirements. Subtitle C applies to all states and to all hazardous waste generators. This law also specifies the quantity of waste that is governed under this regulation.

Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) (an amendment to CERCLA)

identify the requirements for planning, reporting, and notification concerning hazardous materials and hazardous material releases into the environment. SARA and CERCLA regulations are presented in 40 CFR Sections 302 through 355.

Part 302 mandates immediate notification to the Local Emergency Planning Committee (LEPC) when a hazardous material above its reportable quantities (RQ) is released into the environment. Notification must also be provided to the National Response Center in Washington, D.C. if CERCLA hazardous materials above RQ are released. These CERCLA-regulated materials are listed in the table in 40 CFR Section 302.4.

Part 311 requires a facility to develop a list of and/or provide material safety data sheets of any hazardous materials stored, handled, or used at the facility. A copy of this information must be provided to the State Emergency Response Center, LEPC, and local fire departments.

U.S.C., Title 42, Section 11023 and 40 CFR Section 372.30 identify annual reporting requirements associated with hazardous material released into the environment. Reporting requirements include both routine discharges and spill releases. Title III of SARA (identified as the Emergency Planning and Community Right-To-Know Act of 1986) mandates that states develop local chemical emergency preparedness programs as well as provide information on hazardous materials used at facilities in local communities. Additionally, SARA identifies the requirements for planning, reporting, and notification concerning hazardous materials.

Clean Air Act

National ambient air quality standards were established by the Clean Air Act (CAA) in 1970 for six pollutants: carbon monoxide, ozone, particulate matter (including those less than 10 microns in diameter and those less than 2.5 microns in diameter), nitrogen dioxide, sulfur dioxide, and lead. 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. The CAA required states exceeding the standards to prepare air quality plans showing how the standards were to be met by December 1987. The CAA Amendments of 1990 directed the EPA to set standards for toxic air contaminants and required facilities to sharply reduce emissions. Hazardous materials emission regulations under the CAA provisions are provided in 40 CFR Part 68 and are designed to prevent accidental releases of hazardous materials into the atmosphere. CAA requirements concerning the project are addressed in Section 3.3 Air Quality.

Clean Water Act

The Clean Water Act (CWA) provisions address accidental releases of hazardous materials to surface waters. Requirements for Spill, Prevention, Control, and Countermeasure (SPCC) Plans were developed as one of the regulations under the CWA. Requirements of SPCC Plans are provided in 40 CFR Part 112 (Oil Spill Prevention).

SPCC Plans are intended to reduce the threat of hydrocarbon spills to “navigable waters” of the U.S. The site-specific plan must identify the design, control, training, and response requirements of a facility. An SPCC Plan is required for all facilities that store hydrocarbons and oils (e.g., gasoline, diesel, asphalt, transformer liquids) exceeding 1,320 gallons in one or more containers. Recent changes to this regulation include all containers storing 55 gallons or more.

Occupational Safety and Health Act

The hazardous materials regulations of the Occupational Safety and Health Administration (OSHA), created by the Occupational Safety and Health Act of 1970, govern worker safety. Separate OSHA standards have been developed for construction and industrial workers. Generally, 29 CFR Part 1926 governs construction worker safety. 29 CFR Part 1926.55(a) specifies that exposure of employees to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists shall be avoided.

United States Department of Transportation

U.S. Department of Transportation regulations govern the interstate transport of hazardous materials and wastes through the implementation of the Hazardous Materials Transportation Act (HMTA). The provisions of the HMTA contain requirements for hazardous materials shipments and packaging, and guidelines for marking, manifesting, labeling, packaging, placarding, and spill reporting. Specific regulations dealing with hazardous materials are covered under 49 CFR Section 173, et seq. (Hazardous Material Regulations, Shippers – General Requirements for Shipping and Packaging) and 49 CFR Part 397 (Transportation of Hazardous Materials; Driving and Parking Rules).

State

Division of Occupational Safety and Health

Construction and industrial worker safety issues are covered under the California Occupational Safety and Health Act of 1973. Most of these regulations are provided in Title 8 of the California Code of Regulations (CCR) and enforced by the Division of Occupational Safety and Health (also known as Cal/OSHA). While OSHA regulates hazards and hazardous materials in the workplace at the federal level, Cal/OSHA regulates them at the state level.

Department of Toxic Substances Control

The DTSC is responsible for regulating hazardous waste, cleaning up existing contamination, and identifying ways to reduce hazardous waste within California. The DTSC is also responsible for enforcing these regulations under RCRA and the California Health and Safety Code.

Regional Water Quality Control Board

The Regional Water Quality Control Boards (RWQCBs) develop and enforce water quality objectives and implementation plans to protect beneficial uses of the state's waters (Water Code Section 13000, et seq.). The project is located within the jurisdiction of the Central Coast RWQCB. The RWQCBs have been delegated authority by the State Water Resource Control Board to enforce regulations pertaining to stormwater discharges, as well as activities that have the potential to impact the quality of surface water or groundwater.

California Hazardous Materials and Waste Codes

California laws and regulations associated with the storage, handling, use, and/or disposal of hazardous materials are provided in various sections of California's Health and Safety Code (H&SC) and CCR. While RCRA allows individual states to develop their own programs to regulate hazardous waste discharges, the state programs must be at least as stringent as RCRA requirements.

California has developed its own hazardous waste control program through the passage of the California Hazardous Waste Control Law (HWCL). It should be noted, however, that the HWCL includes hydrocarbon wastes (e.g., oils, lubricants, and greases) that are not classified as hazardous waste under the federal RCRA regulations. California also regulates universal wastes (e.g., batteries, mercury control devices, dental amalgams, aerosol cans, and lamps/cathode ray tubes), which are not specified in federal regulations. The HWCL is found in Section 25100, et seq. of the H&SC. Administration and enforcement of the HWCL is the responsibility of the DTSC.

H&SC Section 25500, et seq., known as the Hazardous Materials Release Response Plans and Inventory Act, and the regulations in Title 19 CCR Section 2620, et seq., require that local governments be responsible for the regulation of facilities that store, handle, or use hazardous materials above threshold quantities (TQs). The TQs for identified hazardous materials are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases measured at standard temperature and pressure. The law mandates that facilities storing these hazardous materials in excess of their TQs prepare a hazardous material business plan (HMBP). The HMBP must identify the facility's internal response requirements to accidental spills, such as emergency contacts, hazardous material inventory and quantities, control methods, emergency response, and training. The law also requires that the HMBP be submitted to the local administering agency (usually the local fire department or public health agency). All spills from a facility must be reported to both the local administrative agency and the California Governor's OES.

California H&SC, Section 25249.5, et seq., the Safe Drinking Water and Toxics Enforcement Act (Proposition 65), regulates cancer-causing and reproduction-impairing chemicals. Users of regulated chemicals identified under this law are responsible for informing the public regarding potential exposure to such materials. The law is intended to prevent discharges or releases of specified hazardous materials into a "source of drinking water" and provides a periodically updated listing of chemicals of concern. Proposition 65 is administered through California's Office of Environmental Health Hazard Assessment.

The California Unified Hazardous Waste and Hazardous Material Management Regulatory Program Act is located in California H&SC, Section 25404, et seq. This act established requirements for dealing with hazardous waste locally by creating a Certified Unified Program Agency. This responsibility is delegated through a memorandum of understanding between the California EPA and the local agency. The County's Environmental Health Services Department is the Certified Unified Program Agency for all cities and unincorporated areas within the County.

Public Resource Code

Several regulations have been adopted in the Public Resource Code (PRC) that cover safety aspects of electrical transmission lines. The most notable examples of these regulations include:

- PRC Section 4292, which requires clearing of flammable vegetation to reduce fire hazards around specific structures that support certain connectors or types of electrical apparatus. This cleared area (10-foot radius) is required to be kept clear of flammable vegetation during the entire fire season.

- PRC Section 4293, which requires specific clearance between conductors and vegetation. The clearance required increases as the line voltage increases. This code also requires the removal of trees adjacent to electrical transmission lines that may present a hazard if they fall on the line.

California Public Utilities Commission - General Order 95

California Public Utilities Commission (CPUC) is a state organization that regulates privately owned energy facilities, including natural gas, water, and electrical facilities, as well as railroad and passenger transportation facilities. General Order 95, originally adopted by the CPUC in December 23, 1941 and amended through 2011, contains requirements and specifications for overhead electrical line construction. These requirements are intended to ensure safety to persons engaged in the construction, maintenance, operation, and use of electrical facilities. The regulations are also intended to ensure the general reliability of the state's utility infrastructure and services.

Local

Santa Cruz County

The County's Environmental Health Services Department is the designated Certified Unified Program Agency for all cities and unincorporated areas within the County. The Certified Unified Program Agency provides regulatory oversight for the Hazardous Materials Business/Management Plan (HMMP) Program, Hazardous Material Release Response Plans and Inventories, Hazardous Waste Treatment Program, and the California Accidental Release Prevention Program. The Certified Unified Program Agency also conducts the permitting and inspection of underground storage tanks (USTs) that store hazardous materials and conducts inspections of all facilities that store petroleum or petroleum products in 55-gallon containers or greater, including aboveground storage tanks, with a total aggregate quantity of at least 10,000 gallons.

The Hazardous Materials/Wastes Division of the Environmental Health Services, the Certified Unified Program Agency, in consultation with response agencies and the OES, prepares and maintains the Santa Cruz County Hazardous Materials Area Plan. The Santa Cruz County Hazardous Materials Area Plan represents a portion of the County Operational Area Plan, which describes how County resources will be utilized to deal with various kinds of emergencies. The role of the Environmental Health Services during emergency responses involving hazardous materials is to provide technical assistance to the incident commander and the County's Interagency Hazardous Materials Team. The Environmental Health Services, along with the

Santa Cruz Hazardous Materials Interagency Team, provides regulatory oversight of the cleanup and disposal of hazardous material/waste spills.

Santa Cruz County/San Mateo County Community Wildfire Protection Plan

The Santa Cruz County and San Mateo County CWPP was prepared in May 2010 by the California Department of Forestry and Fire Protection (CAL FIRE), in association with the Santa Cruz and San Mateo Resource Conservation Districts. The CWPP provides recommendations for preventing and reducing damage to both infrastructure and the ecosystem associated with wildland fires. The plan identifies areas within the County that are part of the wildland-urban interface, as well as community-identified hazards, assets at risk, and high-priority areas in need of fuel reduction. Although the CWPP is not a legal document and does not satisfy any regulatory permitting processes, it provides critical planning information to reduce fire hazards in Santa Cruz and San Mateo counties.

3.7.3.2 Environmental Setting

Existing Hazardous Sites

The project area, which is located in the southern portion of the County, crosses both populated communities and undeveloped areas. According to the DTSC, the County contains one federal superfund site and eight state response sites. Of these, two state response sites—the Berman Steel site and the Camp McQuaide Military Reservation site—are also within the southern portion of the County. The Berman Steel site is located in Watsonville, approximately 2.7 miles south of intersection of Agate Drive and Lapis Drive, and previously required cleanup of soil that was contaminated by lead, polychlorinated biphenyls, copper (and copper compounds), and zinc; the cleanup activities were completed in May 1981. The Camp McQuaide Military Reservation site is located approximately 6 miles west of Watsonville and requires cleanup of soil contaminated by lead (due to explosives and munitions debris from its former use as a firing range).

Based on a review of the Cortese list and the NPL and on internet searches of federal, state, and local hazardous materials databases, there are no active hazardous materials cases within 0.25 mile of the project area. However, one current record of a leaking UST was identified outside of the project area within 0.25 mile of the Northern Alignment, approximately 0.2 mile northeast of the intersection of Day Valley Road and Ridge Road. According to the State Water Resources Control Board’s GeoTracker database, the site (number T0608790827) is described as a private residence located along Hames Road in Corralitos, California.

Fire Hazards

According to information provided in the San Mateo County and Santa Cruz County CWPP, both the Northern Alignment and the Cox-Freedom Segment lie within the wildland-urban interface. The CWPP also provides the different levels of fuel rank hazard zones within the two counties, according to CAL FIRE. Ranks are assigned based on the expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (wind speed, humidity, and temperature) for an assigned fuel model and slope. The vast majority of the project area spans land described in the CWPP as having a moderate fuel rank hazard. However, a few very small pockets of land found primarily in the Cox-Freedom Segment area,

which are regarded as having both high and very high fuel rank hazards, are interspersed throughout the project vicinity, as shown in Figure 3.7-1: Fire Hazard Severity Map.

The area around the town of Corralitos is considered the highest priority area within the project vicinity according to the CWPP. This designation denotes that this location is considered a priority area for fuel reduction projects by stakeholders.

According to data provided by the County and CAL FIRE, the areas with the highest generalized critical fire hazards in the County are concentrated in three general locations: the southern half of the Santa Cruz County/Santa Clara County border; the top northern quarter of the Santa Cruz County/Santa Clara County border; and from the northwest corner of the County down the coast to approximately 1 mile west of the City of Santa Cruz. The third zone typically ranges from several feet to 3 miles inland. Additionally, scattered areas of critical fire hazards are dispersed throughout the central portion of the County, particularly in the vicinity of the town of Soquel and generally west/northwest of the project area between the towns of Aptos and Corralitos. Critical areas were determined based on slope, vegetation, ability for fire agencies to respond, and specific weather conditions.

According to CAL FIRE, the Northern Alignment crosses areas of moderate and high fire severity zones, as well as areas that are classified as urban unzoned or non-wildland/non-urban in the eastern portion of the line. The Cox-Freedom Segment lies entirely within a moderate fire hazard severity zone. Figure 3.7-1: Fire Hazard Severity Map shows the locations within either a state or local resource area and the associated fire hazard severity levels. As shown in Figure 3.7-1: Fire Hazard Severity Map, the majority of the project area—approximately 5.27 miles of the 8.8-mile-long project alignment—is located within a moderate fire hazard severity zone, while approximately1.78 miles of the project alignment are within a high fire hazard severity zone. Additionally, approximately 0.87 mile of the project alignment is located in a local resource area that is classified as urban unzoned, while approximately 0.96 mile is within an area classified as non-wildland/non-urban.

Schools

A total of 10 separate school districts are located within the County. The project area is located within the Pajaro Valley Unified School District (District 10). District 10 contains 16 elementary schools, 9 secondary schools, 7 charter schools, and 3 alternative education schools.

The nearest schools to the project include Corralitos Union School and Bradley Elementary School, which are located approximately 675 feet south of the Northern Alignment near the intersection of Corralitos Road and Skylark Lane; and Aptos High School, which is approximately 0.25 mile southeast of Rob Roy Substation. Other schools in the project vicinity include Amesti Elementary School, which is located approximately 0.6 mile southwest of Green Valley Substation, and Aptos Junior High School, which is located approximately 0.8 mile southwest of Rob Roy Substation. Section 3.10 Population and Housing, Public Services, and Utilities and Service Systems provides further details on schools in the project area.

Airports

The nearest major airport in the region is Mineta San José International Airport, located approximately 25 miles north/northwest of the project area. Within the County, the Watsonville Municipal Airport is located approximately 1.7 miles southwest of Green Valley Substation. There are also three private airstrips within the County: Monterey Bay Academy Airport, approximately 5 miles south of the project area; Bonny Doon Village Airport, approximately 15 miles northwest of the project area; and La Trancas Airport, approximately 23 miles north west of the project area. The closest helipad is located at the Watsonville Community Hospital, approximately 2.4 miles southwest of the project area.

The Watsonville Municipal Airport is the only public-use airport in the County, and is situated approximately 1.7 miles from Green Valley Substation, the nearest project component. According to the Watsonville Municipal Airport Master Plan, the airport is located approximately 3 miles from the city center, and is a well-constructed, general aviation facility occupying 291 acres with two runways serving single- and twin-engine aircraft and helicopters, as well as turboprops and turbine-powered business jets. The airport has an additional 53 non-contiguous acres of land for clear-zone protection.

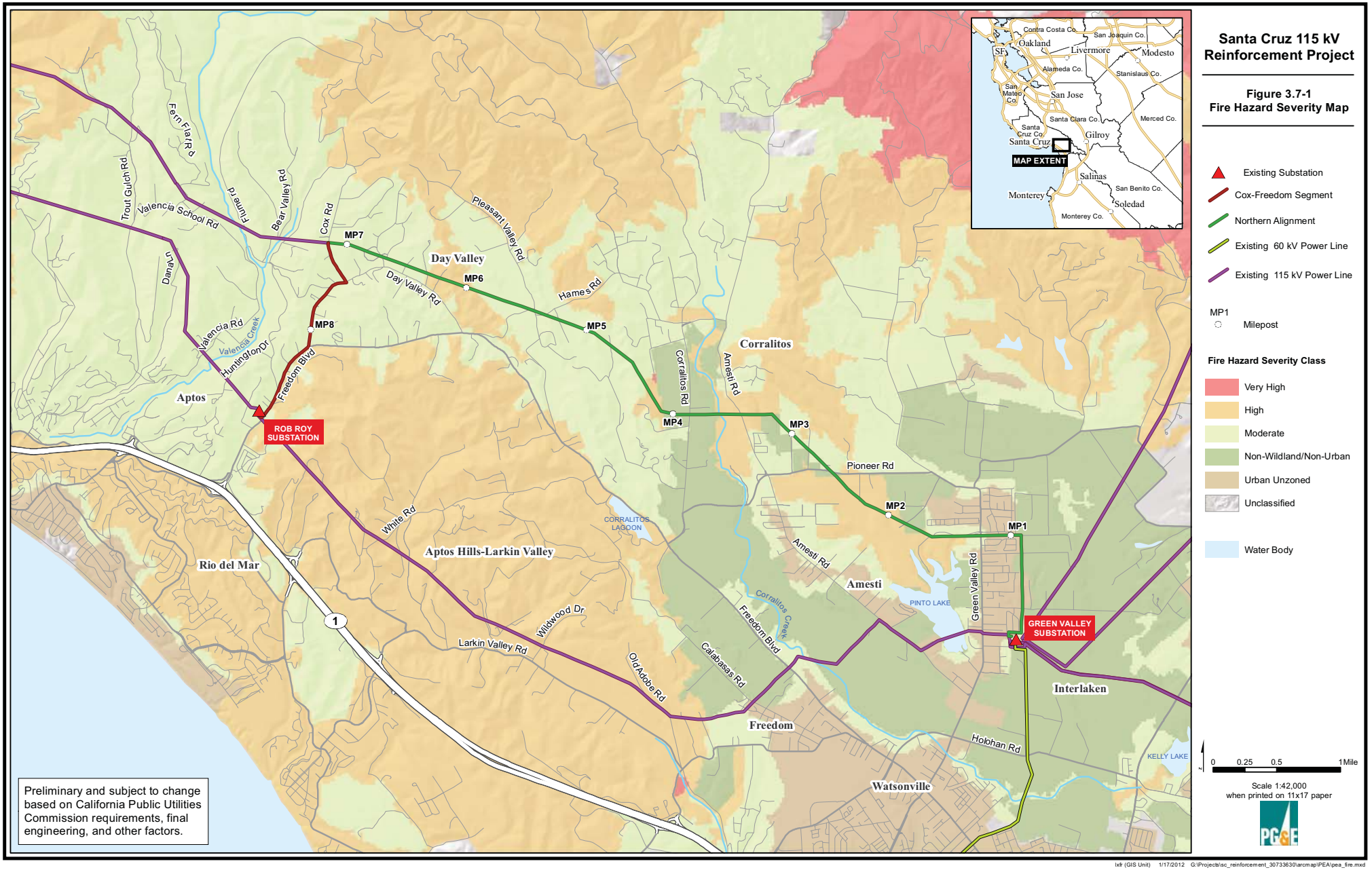
The Monterey Bay Academy Airport is a private-use airport located approximately 4 miles west of the town of Watsonville and approximately 5 miles south of the project site. The airport has two runways and is accessible to private planes and charter jets with prior approval. Section 3.11 Transportation and Traffic provides additional information regarding airports and air traffic in the project area.

Emergency/Evacuation Plans

The OES is responsible for emergency planning and preparation on a countywide basis. The OES assesses major emergency threats to the community, including wildland fires, floods, earthquakes, tsunami, and civil disturbances. The OES is responsible for making all necessary notifications to County departments and personnel, the Santa Cruz Operational Area member jurisdictions, and the Coastal Region of the California Governor's Office of Emergency Services. Additionally, the OES disseminates warnings, emergency public information, and instructions to the citizens of the County, as well as conducts evacuations and/or rescue operations. Emergency medical, fire protection, and hazardous materials services for the project area are provided by fire protection districts, which are further discussed in Section 3.10 Population and Housing, Public Services, and Utilities.

The nearest state highways to the project area for use during an evacuation include California State Route (SR-) 1, SR-152, SR-129, and SR-17. SR-1 is located approximately 2.8 miles southwest of Green Valley Substation and should not be used if there is a tsunami warning, as some of the highway south of the unincorporated community of Aptos is located within the potential tsunami inundation zone. SR-152 is located approximately 1.3 miles southeast of Green Valley Substation. SR-129 is located approximately 2.9 miles southeast of Green Valley Substation. SR-17 is located approximately 8.4 miles west of Rob Roy Substation. The nearest interstate highway is U.S. 101, which is located approximately 11 miles southeast of the project area.

Figure 3.7-1: Fire Hazard Severity Map


Santa Cruz 115 kV Reinforcement Project
Figure 3.7-1
Fire Hazard Severity Map
MAP EXTENT
Contra Costa Co.
San Joaquin Co.
Oakland
SF
Livermore
Modesto
Alameda Co.
Stanislaus Co.
San Mateo Co.
San Jose
Santa Clara Co.
Merced Co.
Santa Cruz Co.
Santa Cruz
Gilroy
Salinas
San Benito Co.
Monterey
Soledad
Monterey Co.
Existing Substation
Cox-Freedom Segment
Northern Alignment
Existing 60 kV Power Line
Existing 115 kV Power Line
MP1
Milepost
Fire Hazard Severity Class
Very High
High
Moderate
Non-Wildland/Non-Urban
Urban Unzoned
Unclassified
Water Body
ROB ROY SUBSTATION
GREEN VALLEY SUBSTATION
MP1
MP2
MP3
MP4
MP5
MP6
MP7
MP8
Day Valley
Corralitos
Aptos
Aptos Hills-Larkin Valley
Rio del Mar
Amesti
Freedom
Interlaken
Watsonville
Pleasant Valley Rd
Day Valley Rd
Hames Rd
Corralitos Rd
Amesti Rd
Pioneer Rd
Green Valley Rd
Freedom Blvd
Valencia School Rd
Trout Gulch Rd
Fern Flat Rd
Bear Valley Rd
Cox Rd
Valencia Rd
Huntington Dr
Valencia Creek
White Rd
Wildwood Dr
Larkin Valley Rd
Old Adobe Rd
Calabasas Rd
Holohan Rd
Corralitos Creek
CORRALITOS LAGOON
PINTO LAKE
KELLY LAKE
1
0 0.25 0.5 1 Mile
Scale 1:42,000
when printed on 11x17 paper
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.
lxlr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_fire.mxd

3.7.4 Potential Impacts and Applicant-Proposed Measures

3.7.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Project impacts will be considered significant if they:

- Create a hazard to public health or the environment by the routine transport, use, or disposal of hazardous materials
- Create a hazard to the public or the environment by reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Are located at a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, will create a hazard to the public or the environment
- Are located within an airport land use plan or within 2 miles of a public or private airport and will result in a safety hazard for people residing or working in the project area
- Impair implementation of, or physically interfere with, an adopted emergency response or evacuation plan
- Expose people or structures to a risk of loss, injury, or death related to wildland fire, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

3.7.4.2 Applicant-Proposed Measures

APM HAZ-01. Personnel Training.

Prior to construction, all PG&E, contractor, and subcontractor project personnel will receive training in the applicable environmental laws and regulations associated with hazardous materials, the use and storage of hazardous materials used on the project, and spill response and cleanup best management practices (BMPs) in the event of an unanticipated release.

APM HAZ-02. Spill Prevention Control and Countermeasure Plan Update.

PG&E will update the existing SPCC Plan for Rob Roy Substation and ensure compliance with applicable standards by incorporating the design, control, training, containment, and response requirements for the increased amounts of hydrocarbon and oil storage that will be located at the modified substation, so that hazardous materials will not encounter the soil.

APM HAZ-03. Smoking and Fire Rules.

Smoking will not be permitted during fire season, except in a barren area that is cleared to mineral soil at least 10 feet in diameter or within vehicles or enclosed equipment cabs. Under no

circumstances will smoking be permitted during fire season while employees are operating light or heavy equipment, or while walking or working in grass and woodlands.

APM HAZ-04. Carry Emergency Fire Suppression Equipment.

PG&E construction crew trucks and equipment will have at a minimum a standard round point shovel and a fire extinguisher. If construction activities likely to cause sparks—e.g., welding, grinding, or grading in rocky terrain—are conducted, emergency fire tool boxes will be readily available to crews. The tool boxes will contain fire-fighting items such as shovels, axes, and water.

3.7.4.3 Question 3.7a – Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction – Less-than-Significant Impact

A general list of the products anticipated to be used during construction is provided in Table 3.7-1: Hazardous Materials Typically Used for Construction. The routine transport, use, and disposal of hazardous materials—such as fuels, lubricating oil, and hydraulic fluid—during construction could result in inadvertent releases of these materials. Any release of hazardous materials will most likely result from accidental spills or other unauthorized releases during vegetation clearing, grading, and access road construction; pole removal and installation; or conductor pulling, splicing, and tensioning. An inadvertent release could also occur from the use of hazardous materials during construction within temporary storage sites, while transporting hazardous materials to and from work areas, or during refueling and servicing of equipment.

Table 3.7-1: Hazardous Materials Typically Used for Construction

Hazardous Materials	
2-Cycle Oil	Lubricating Grease
ABC Dry Chemical Fire Extinguisher	Mastic Coating
Acetylene Gas	Methyl Alcohol
Air Tool Oil	Oxygen
Antifreeze	Paint
Automatic Transmission Fluid	Paint Thinner
Battery Acid	Petroleum Products
Canned Spray Paint	Puncture Seal Tire Inflator
Connector Grease	Safety Fuses
Contact Cleaner 2000	Safety Solvent
Diesel Fuel and Gasoline	Starter Fluid
Gas Treatment	Wagner Brake Fluid
Jet A Fuel	WD-40
Insulating Oil	

If an inadvertent release of hazardous materials occurs during project construction, soils could become contaminated, water quality could be affected, and adverse impacts to human health and safety could result. However, with the exception of the fuel truck required for helicopter refueling, the quantities of hazardous materials to be used during construction typically will be small. As provided in Section 3.7.3 Existing Conditions, if hazardous materials in excess of the TQs provided by H&SC Section 25500 (55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases) are stored within project work areas, PG&E will develop a HMBP for the project. In addition, by implementing the BMPs outlined in the SWPPP, any accidental releases will be properly controlled and promptly cleaned up. Only PG&E general construction crews or licensed contractors that have been trained in the proper use, storage, and handling of hazardous materials will be approved to work with hazardous materials. However, if an inadvertent release does occur, proper handling will ensure that impacts are less than significant. Therefore, potential impacts associated with the transport, use, and disposal of hazardous materials are anticipated to be less than significant.

Operation and Maintenance – No Impact

PG&E routinely transports, uses, and disposes of hazardous materials as a result of routine O&M of its substations and the existing lines in the area. The amount of material present during O&M of the project will typically be small and easily contained. In addition, the hazardous materials handling and disposal procedures PG&E will follow once the project has been constructed will not change from existing practices, and no new materials will be required. Therefore, no new impacts will occur as a result of the project.

Question 3.7b – 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?

Construction – Less-than-Significant Impact

There is a potential for hazardous materials used in construction vehicles and equipment to inadvertently be released through spills or leaks. In addition, helicopter refueling at the helicopter landing zones could cause a fuel release. However, with the exception of the fuel truck required for helicopter refueling, the quantities of hazardous materials to be used during construction will typically be small. As provided in Section 3.7.3 Existing Conditions, if hazardous materials in excess of the TQs provided by H&SC Section 25500 (55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases) are stored within project work areas, PG&E will develop a HMBP for the project. In addition, any accidental release sites will be properly controlled and promptly cleaned up through implementation of the BMPs provided in the SWPPP. As a result, impacts will be less than significant.

Operation and Maintenance – No Impact

As stated previously under Question 3.7a, PG&E regularly handles hazardous materials associated with operation of its facilities. PG&E currently implements and will continue to implement an SPCC Plan for Rob Roy Substation to ensure that any foreseeable upsets or accidents are appropriately addressed. PG&E will update the current SPCC Plan in accordance with APM HAZ-02 to account for the increased volume of hydrocarbons and oil that will be stored at Rob Roy Substation as a result of the addition of new substation components. These

procedures will remain the same as those prior to construction of the project. Therefore, no new impacts related to the release of hazardous materials will occur as a result of the project.

3.7.4.4 Question 3.7c – 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?

Construction – Less-than-Significant Impact

As previously described in Section 3.7.3 Existing Conditions, three schools are located within 0.25 mile of the project. Project construction will not involve the use of large quantities of volatile hazardous materials on site, with the exception of the fuel truck that will be required during helicopter use. No helicopter landing zones will be located within 0.25 mile of a school; therefore, no refueling will occur within 0.25 mile of a school. However, if hazardous materials are released or encountered during construction, they will be contained and managed through implementation of the BMPs provided in the SWPPP. In addition, the project will comply with local air quality emissions regulations, as discussed in Section 3.3 Air Quality and Greenhouse Gas Emissions. Due to the temporary and short-term nature of construction, the relatively small quantity of hazardous materials to be used during construction, and the distance between schools and the project site, impacts to schools from potential hazardous substance emissions will be less than significant.

Operation and Maintenance – No Impact

As previously discussed, PG&E routinely transports, uses, and disposes of hazardous materials associated with the O&M of the substation and existing line. The procedures PG&E follows to safely handle and dispose of these materials once the project has been constructed will not change from existing practices. As a result, no new impacts to schools will occur due to O&M of the project.

3.7.4.5 Question 3.7d – 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?

Construction – No Impact

The project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No Superfund or state response sites are known to exist within 0.25 mile of the project area. However, there is one current record of a leaking UST located within 0.25 mile of the project. That site is located approximately 0.20 mile northeast of the intersection of Day Valley Road and Ridge Road along Hames Road. Cleanup of the site has continued since 2003 for potential benzene, diesel, and gasoline contamination of non-potable groundwater. As the project is not located within close proximity to the UST site, no impact will occur.

Operation and Maintenance – No Impact

Maintenance activities primarily occur and will continue to occur on above-grade structures. In addition, excavation activities will not occur outside of the right-of-way (ROW) during O&M

activities. Should excavation activities be required during O&M of the project, they will most likely be in areas that were disturbed during construction or during previous O&M activities. Project-related O&M activities will not significantly change from existing conditions and no new impacts are anticipated. Therefore, the potential for uncovering existing hazardous materials sites during O&M of the project is unlikely, and no impact will occur.

3.7.4.6 Question 3.7e – For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? – No Impact

As described previously, Watsonville Municipal Airport is the nearest airport to the project. Between Green Valley Substation and where the Northern Alignment spans Pioneer View Road (approximately 800 feet north of Pioneers Road), the project is located within the geographical boundaries covered by the Watsonville Municipal Airport Airspace Protection Plan, although the Plan itself is not applicable to this utility project. In any event, the project will not create a safety hazard nor conflict with provisions of the Plan. When a maximum pole height of 100 feet is considered, none of these poles will penetrate the horizontal, conical, or any other protection surface specified in the Watsonville Municipal Airport Airspace Protection Plan.

CFR Title 14, Part 77 states that FAA notification is necessary for construction projects greater than 200 feet in height or those located within 20,000 feet of a public use airport that exceeds a 100-to-1 surface ratio from any point on the runway with its longest runway more than 3,200 feet. The eastern portion of the Northern Alignment—between Green Valley Substation and near the intersection Hames Hollow and Hames Road—is located within 20,000 feet of Watsonville Municipal Airport. However, as the height of the tallest pole installed for the project is 100 feet, no point of the project will exceed a 100-to-1 surface ratio. Therefore, FAA notification will not be necessary and there will be no impact. Potential impacts to public airports are discussed in more detail in Section 3.11 Transportation and Traffic.

3.7.4.7 Question 3.7f – 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? – No Impact

As previously discussed, the nearest private airstrip is Monterey Bay Academy in La Selva Beach, which is located approximately 4 miles southwest of Green Valley Substation. Because the new TSPs that will be constructed in both the Northern Alignment and Cox-Freedom Segment will be similar in height to the existing poles, and because the project is not located within 2 miles of a private airstrip, the new TSPs will not create an air traffic hazard. Thus, no impact will occur.

3.7.4.8 Question 3.7g – Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction – Less-than-Significant Impact

The project will not necessitate any permanent modifications to existing public roadways. As discussed in Section 3.11 Transportation and Traffic, temporary road or lane closures may be

required to ensure safety to the public and workers during certain activities, particularly during work on road shoulders. Road closures and encroachment into public roadways could increase hazards if appropriate safety measures—such as proper signage, orange cones, and flaggers—are not in place. An increase in hazards could also result from increased vehicular traffic at the intersections of temporary access roads and public roadways. However, impacts will be minimized through the implementation of requirements contained in the project's ministerial encroachment permit. Temporary access roads will also be designed to allow safe ingress and egress from any public roadways and to accommodate large construction equipment safely. In addition, in the event of an evacuation, project construction will cease and the roads will be opened to allow proper ingress and egress. Furthermore, construction of the project will not impact potential emergency routes and will be short in duration, as described in Section 3.10 Population and Housing, Public Services, and Utilities. Because the location of the poles and project access roads will not substantially change from their existing locations as a result of the project, any necessary road closures will be short term, and construction will cease and roads will be opened in the event of an evacuation, impacts to emergency evacuation or response plans will be less than significant.

Operation and Maintenance – No Impact

O&M activities occur and will continue to occur within PG&E ROWs. If maintenance activity extends into roadways, those roadways will remain open to emergency vehicles at all times. In addition, in the event of an emergency requiring evacuation, PG&E personnel will ensure that all potential routes are open and accessible for public use. Thus, no impact will occur.

3.7.4.9 Question 3.7h – 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?

Construction – Less-than-Significant Impact

The majority of the project is located within a CAL FIRE moderate fire hazard severity zone, as shown in Figure 3.7-1: Fire Hazard Severity Map. However, as previously described, approximately 1.78 miles of the 8.8-mile-long project alignment are located in a high fire severity zone. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. However, project activities are generally confined to areas that have been cleared of vegetation, including access roads and work areas. Vehicles and equipment will primarily use existing roads to access the transmission structure sites, all of which will be cleared of brush to reduce fire potential. New access roads will be cleared of vegetation when constructed. In addition, as described in APM HAZ-03 and APM HAZ-04, PG&E will require construction personnel to adhere to fire prevention practices, such as only smoking in designated areas and keeping appropriate fire-fighting equipment on site. As a result, the potential for fire from construction of the project will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

The project will be installed in substantially the same location as the existing poles and primarily within an existing transmission corridor. O&M work, which includes regular vegetation clearing to minimize the potential for fire, will continue in the same manner as it did prior to construction

of the project. In addition, vehicles will use existing roads and roads installed during construction to access the project area during O&M activities, which will reduce the potential for vehicle heat to ignite dry vegetation and start fires. Furthermore, the new TSPs are not flammable and will provide greater durability and strength compared to the existing wood poles in the Northern Alignment. Both TSPs and wood poles will be installed in the Cox-Freedom Segment. Along the Cox-Freedom Segment, a 115 kV circuit will be constructed above the existing local 21 kV distribution circuit. The existing circuit has been maintained and cleared of vegetation during current O&M activities. Some additional vegetation clearing will be necessary along the Cox-Freedom Segment due to the increased width of the ROW for the overbuild, which will meet all state and CPUC clearance requirements. Since Cox-Freedom Segment will be constructed along the shoulder of existing County roads, no increase in fire hazards is anticipated. PG&E will maintain CPUC General Order-95 clearances between the power line and vegetation within the ROW, so that no increase in fire potential will occur. Therefore, impacts resulting from O&M associated with the project will be less than significant.

3.7.5 References

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.8 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less than Significant 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?			✓	

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
f) Otherwise substantially degrade water quality?			✓	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures that 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?				✓

3.8.1 Introduction

This section describes the existing surface and groundwater hydrology, use, and quality, as well as the potential for erosion and flooding in the project area. It also describes the potential impacts to hydrology and water quality from construction, operation, and maintenance of the project. With the implementation of the project's Storm Water Pollution Prevention Plan (SWPPP), the project will have less-than-significant impacts to hydrology and water quality.

3.8.2 Methodology

Water resources and potential impacts to 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. These included the Santa Cruz County (County) General Plan and County Municipal Code, as well as the Central Coast Regional Water Quality Control Board (RWQCB) Basin Plan and the Pajaro Valley Water Management Agency Basin Management Plan. Federal Emergency

Management Agency (FEMA) maps were referenced to identify flood zones in proximity to the project area, and local plans, such as the Aptos Creek Watershed Assessment and Enhancement Plan, were reviewed for relevant policies regarding water quality and protection. United States (U.S.) Geological Survey (USGS) 7.5-minute series quadrangle maps, aerial photography, and National Wetland Inventory maps of the project area were also examined to identify major water features, wetlands, and drainage patterns. Information regarding local groundwater formations was also researched through the California Department of Water Resources website, as groundwater is the primary source of domestic water in the area.

General reconnaissance-level surveys were conducted by Insignia Environmental (Insignia) biologists DJ Allison and Kevin Kilpatrick between September 20 and September 29, 2010 and March 8 and 11, 2011 to document potentially jurisdictional wetlands and drainages. All areas within 250 feet (a 500-foot-wide corridor) of the Northern Alignment and Cox-Freedom Segment were surveyed in September of 2010. In March of 2011, all previously unsurveyed areas within 150 feet (a 300-foot-wide corridor) of the Northern Alignment, associated work areas, and most access roads were surveyed. In addition, all unsurveyed areas within 150 feet (a 300-foot-wide corridor) of the Cox-Freedom Segment were surveyed. An area extending approximately 100 feet from the existing fence line at Rob Roy Substation was also surveyed in March of 2011. Fields with row crops were excluded from the survey because they were not accessible.

Insignia biologists recorded the presence of bed and bank, ordinary high water mark (OHWM), width of OHWM, width from top of bank to top of bank, flow characteristics, and surrounding vegetation type. The biologists mapped all of the drainage features with a sub-meter Geo-XT Trimble global positioning system (GPS) unit. Once the fieldwork was completed, the GPS data were processed and maps of the survey area were created.

Along the power lines, access roads, overland routes, and areas surrounding the substations, dominant habitat and general hydrological characteristics were recorded. Drainage areas and other hydrologic features were identified and assessed for their potential to be considered jurisdictional by the California Department of Fish and Game (CDFG) or U.S. Army Corps of Engineers (USACE).

3.8.3 Existing Conditions

3.8.3.1 Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code [USC] Section 1251 *et seq*.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

CWA Section 404

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material to waters of the U.S., including wetlands (33 USC Section 1344). The USACE issues site-specific individual or general (Nationwide) permits for such discharges.

Clean Water Act Section 401

All discharges to surface waters or groundwater within the state of California, which generally encompasses waters of the U.S. (as defined by the USACE), are currently subject to RWQCB regulatory jurisdiction. Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a certification that the discharge will comply with the applicable CWA provisions (33 USC Section 1341). If a federal permit is required, such as a USACE permit for dredge and fill discharges, the project proponent must also obtain a Water Quality Certification.

Clean Water Act Section 402

The National Pollutant Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 USC Section 1342). The program originally focused on industrial-process wastewater and Publicly Owned Treatment Works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of storm water discharges, known as Phase I facilities.

The U.S. Environmental Protection Agency (EPA) issued a final rule for Phase II discharges in August 1995. Phase II storm water discharges include light industrial facilities, small construction sites (less than 5 acres), and small municipalities (less than 100,000 population).

In California, NPDES permitting authority is delegated to the State Water Resources Control Board (SWRCB) and administered by the nine RWQCBs. The County is under the jurisdiction of the Central Coast RWQCB (Region 3). Dischargers whose projects disturb 1 or more acres of soil are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) (Water Quality Order 99-08-DWQ). On August 19, 1999, the SWRCB reissued the General Permit and later that year amended the permit to apply to sites as small as 1 acre. On September 2, 2009, the SWRCB adopted Order No. 2009-0009-DWQ (General Permit), which reissued the Order 99-08-DWQ for projects disturbing 1 or more acre of land, or that are part of a common plan of development or sale that disturbs more than 1 acre of land. The new permit became effective July 1, 2010, and all existing dischargers and new dischargers are required to obtain coverage under the new permit by submitting Permit Registration Documents, which includes a SWPPP.

Clean Water Act Sections 303 and 304

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the U.S. (33 USC Section 1313). Section 304(a) requires the U.S. EPA to publish water quality criteria that accurately reflects the latest scientific knowledge on the kind and extent of effects that pollutants in water may have on health and welfare (33 USC Section 1314(a)). Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality

standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed when numerical standards cannot be established or when they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which the U.S. EPA has published water quality criteria and that could reasonably be expected to interfere with designated uses in a waterbody.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of waterbodies with poor water quality. The waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water segments on the lists and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality.

On November 12, 2010, the U.S. EPA approved California's 2008-2010 Section 303(d) list of impaired waters and disapproved the omission of several waterbodies and associated pollutants that meet federal listing requirements. The SWRCB approved the 2010 Integrated Report on August 4, 2010. However, until the 2010 Integrated Report is approved by U.S. EPA, the 2006 303(d) List of Impaired Waterbodies is the current and active list.

National Flood Insurance Program

The FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. The FEMA is also responsible for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. The FEMA allows non-residential development in floodplains; however, residential construction activities are restricted within flood hazard areas depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations, 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.

State

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 (Water Code Section 13000, *et seq.*) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect waters of the state. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Individual water quality control plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. NPDES permits, waste discharge requirements, and waivers are mechanisms used by the RWQCBs to control discharges and protect water quality. Because the project is located within the Central Coast RWQCB, the criteria for the project area are contained within the Water Quality Control Plan for the Central Coast Region (Basin Plan) (updated in 2009). The Central

Coast RWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources in the Central Coast Region of California.

One of the primary waterbodies in the project area is Pinto Lake, which is located within Pinto Lake County Park. Identified uses in the Basin Plan for Pinto Lake include municipal and domestic supply; agricultural supply; ground water recharge; water contact recreation (such as swimming); non-contact water recreation (such as boating); wildlife habitat; warm fresh water habitat (support of warm water ecosystems); spawning, reproduction, and/or early development of fish; and commercial and sport fishing. Objectives for inland surface waters include having a sediment load that would not be altered in such a manner as to cause nuisance or adversely affect beneficial uses of the water. There are no objectives for groundwater that apply to the project.

Local

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. The following analysis of local regulations relating to hydrological resources is provided for informational purposes and to assist with CEQA review.

Santa Cruz County

The Conservation and Open Space Element of the Santa Cruz County General Plan outlines policies towards the conservation and preservation of natural and cultural resources including open space. Specifically, focus is given to the protection of "sensitive habitats," which are defined by Policy 5.1.2 and include the following applicable habitats:

a) All lakes, wetlands, estuaries, lagoons, streams and rivers
b) Riparian corridors

Sensitive habitats are protected under the Santa Cruz County Sensitive Habitat Protection Ordinance; however, projects otherwise subject to County jurisdiction may be exempt from this ordinance if sensitive habitats have been addressed in an Environmental Impact Report under the California Environmental Quality Act (CEQA).

Impacts to riparian corridors are addressed in the Santa Cruz County Riparian Corridor Protection Ordinance, which regulates impacts to areas within 100 feet of riparian corridors. Continuation of pre-existing uses is exempt from the Riparian Corridor Protection Ordinance. This local ordinance is not applicable to the project.

3.8.3.2 Environmental Setting

Regional

The Central Coast RWQCB has jurisdiction over a 300-mile-long by 40-mile-wide section of the central coast of California. The Central Coast Region encompasses the entire County and contains 2,360 miles of streams, 25,040 acres of lakes, 3,559 square miles of groundwater basins, and 8,387 acres of wetlands and estuaries. The Central Coast Region receives approximately 12 million acre-feet of precipitation per year, which averages to about 9.9 acre-feet per person per year. Adequate quality water for many domestic uses in the Central Coast Region is in short supply. Water quality problems most frequently encountered in the Central Coast Region are

associated with excessive salinity or hardness of (highly mineralized) local groundwater. The project is located within the Pajaro River Hydrologic Unit of the Central Coast RWQCB.

The Northern Alignment and a portion of the Cox-Freedom Segment are located within the Pajaro watershed. The majority of the Cox-Freedom Segment, Rob Roy Substation, and Rob Roy Substation Connections are located within the San Lorenzo-Soquel watershed. Major tributaries within the San Lorenzo-Soquel watershed include Branciforte Creek, Zayante Creek, and Boulder Creek. Principal resource concerns in the San Lorenzo-Soquel watershed include sedimentation, nutrients, pathogens, and impairment of fish habitat. Land use in the watershed includes urban development, rural residential development, agriculture, parks and recreation, and mining and timber harvesting. Major tributaries within the Pajaro watershed include Corralitos Creek and Salsipuedes Creek. The Pajaro River and several tributary streams are considered to be water-quality impaired due to sedimentation. Land use practices in the Pajaro watershed include irrigated croplands, rangelands, timberlands, urbanization, and rural residential development.

Section 303(d)-listed waterbodies in the project area are included in Table 3.8-1: Section 303(d)-Listed Waterbodies in the Project Area. The two nearest features to the project alignment, Corralitos Creek and Valencia Creek, are shown on Figure 3.8-1: Hydrologic Features Map. The portion of the project located from approximately 850 feet northeast of the intersection of Whiteman Avenue and Harrison Way to approximately 1,150 feet southwest of the intersection of Aldridge Lane and Blake Avenue is located within a watershed that drains to Corralitos Creek, which is a 303(d)-listed water. In addition, the portion of the project from Green Valley Substation to approximately 250 feet east of the intersection of Oso Mesa and Niguel drains to College Lake, which has connectivity to Corralitos Creek, and thus drains indirectly to Corralitos Creek as well.

Table 3.8-1: Section 303(d)-Listed Waterbodies in the Project Area

Name	Approximate Distance from Project (miles)	Pollutant/Stressor	Proposed TMDL Completion Date
Corralitos Creek	Spanned	Fecal coliform	2006
Pajaro River	0.03	Boron	2019
		Fecal coliform	2011
Valencia Creek	0.4	Pathogens	2019
		Sedimentation/Siltation	2008
Aptos Creek	1.4	Pathogens	2019
		Sedimentation/Siltation	2008
Watsonville Slough	1.6	Pathogens	2007
		Pesticides	2006

Source: Central Coast RWQCB, 2006

There are eight groundwater basins located within the County. The project area is located within the Pajaro Valley groundwater basin. Six separate water management districts exist within the County. The project falls within two separate water management districts—the Pajaro Valley Water Management Agency and the Central Water District. Approximately 7.0 miles of the eastern portion of the Northern Alignment lie within the jurisdiction of the Pajaro Valley Water Management Agency. The remaining 1.8 miles of the project alignment, consisting of approximately 0.1 mile of the western portion of the Northern Alignment, the approximately 1.7-mile-long Cox-Freedom Segment, Rob Roy Substation, and Rob Roy Substation Connections, lie within the Central Water District.

Local

Several hydrologic features have been identified in the vicinity of proposed temporary work areas for pull sites, staging areas, landing zones, access roads, substation work, and pole installation activities. A more detailed description of these hydrological features is provided in the sections that follow.

Surface Waters and Wetlands

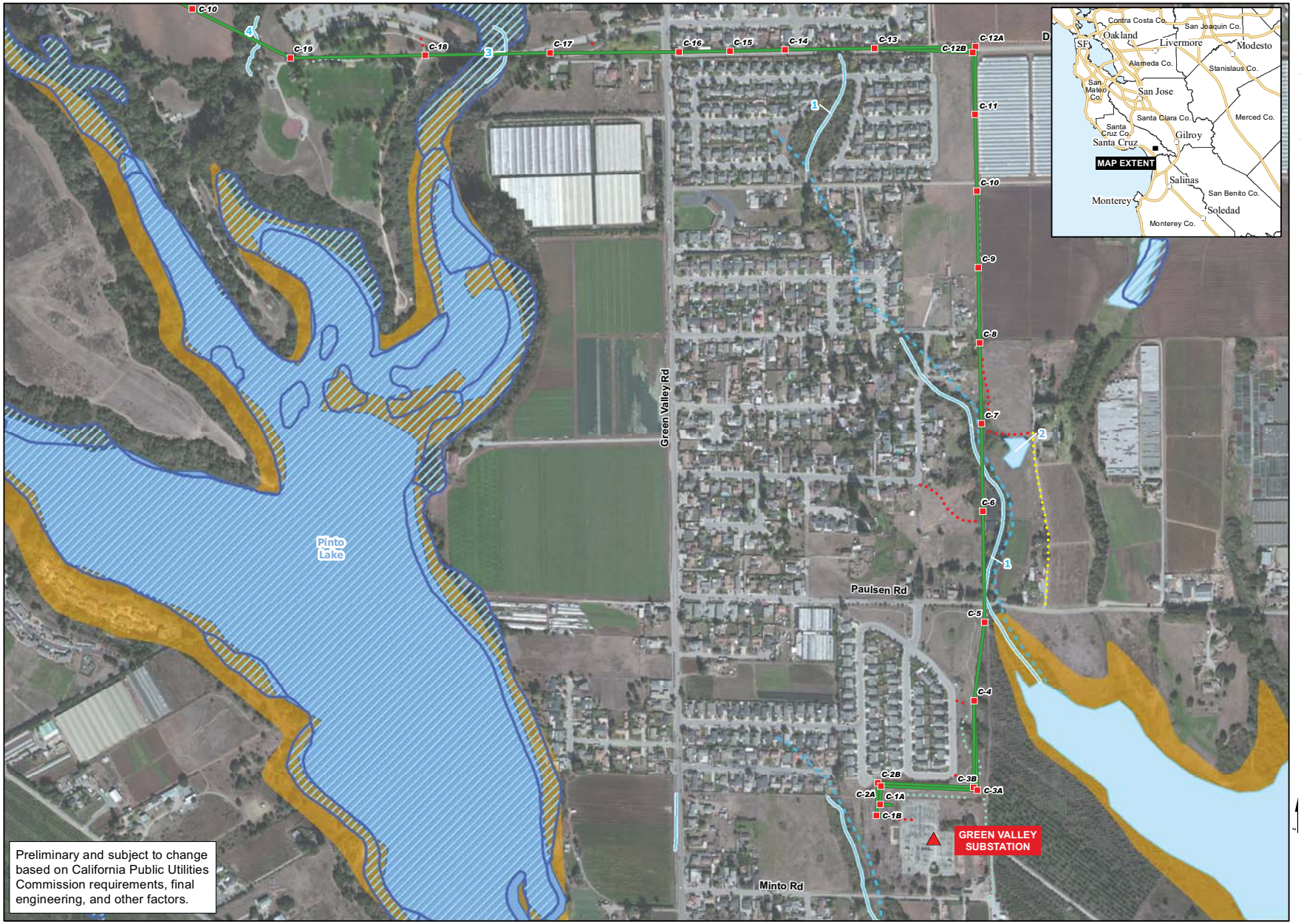
Surface waters within the project area include seeps, drainages, ponds, lakes, streams, and seasonally flooded areas. These aquatic features are generally characterized as riparian, wet meadow, and fresh emergent wetland habitat types. Where these features exist within the project ROW or proposed work areas, they were reviewed for their potential to be USACE-, RWQCB-, or CDFG-jurisdictional waters. Hydrologic features located within 100 feet of the project alignment and Rob Roy Substation are listed in Table 3.8-2: Hydrologic Resources Inventory and shown in Figure 3.8-1: Hydrologic Features Map. Primary waterbodies include Pinto Lake, Corralitos Creek, and College Lake, which is a County-protected reservoir. Additional aquatic features consist of smaller unnamed creeks and drainages and other seasonally wet areas. There are no wetlands located within the project area.

Surface Water Quality

Local surface waters, such as streams and reservoirs, contribute approximately 20 percent of the County's domestic water supply. Local surface waters are fed entirely by precipitation and do not transport imported water. Surface waters within the project area are listed in Table 3.8-2: Hydrologic Resources Inventory and shown in Figure 3.8-1: Hydrologic Features Map.

Water quality in the County is impacted most by runoff from urban, rural and agricultural areas. Primary pollutants include sediment, nutrients and pathogens. Herbicides, pesticides and metals are also detected in streams draining developed watersheds and scattered occurrences of pesticides have been found in streams and sloughs in the southern portion of the County. These pollutants result in a variety of impacts, including damaged riparian systems, toxicity to aquatic organisms, increased treatment costs for potable water supply, flooding, fisheries decline, and public health impacts.

Figure 3.8-1: Hydrologic Features Map



Santa Cruz 115 kV Reinforcement Project

Figure 3.8-1
Hydrologic Features Map
Map 1 of 6

- Existing Substation
- New TSP
- New Wood Pole
- New Distribution Pole
- New Stub Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road
- Stream/Drainage
- National Hydrography Dataset Stream

Vegetation Community

- Lacustrine
- Fresh Emergent Wetland
- NWI Wetlands
- FEMA Flood Zone

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Scale 1:6,000
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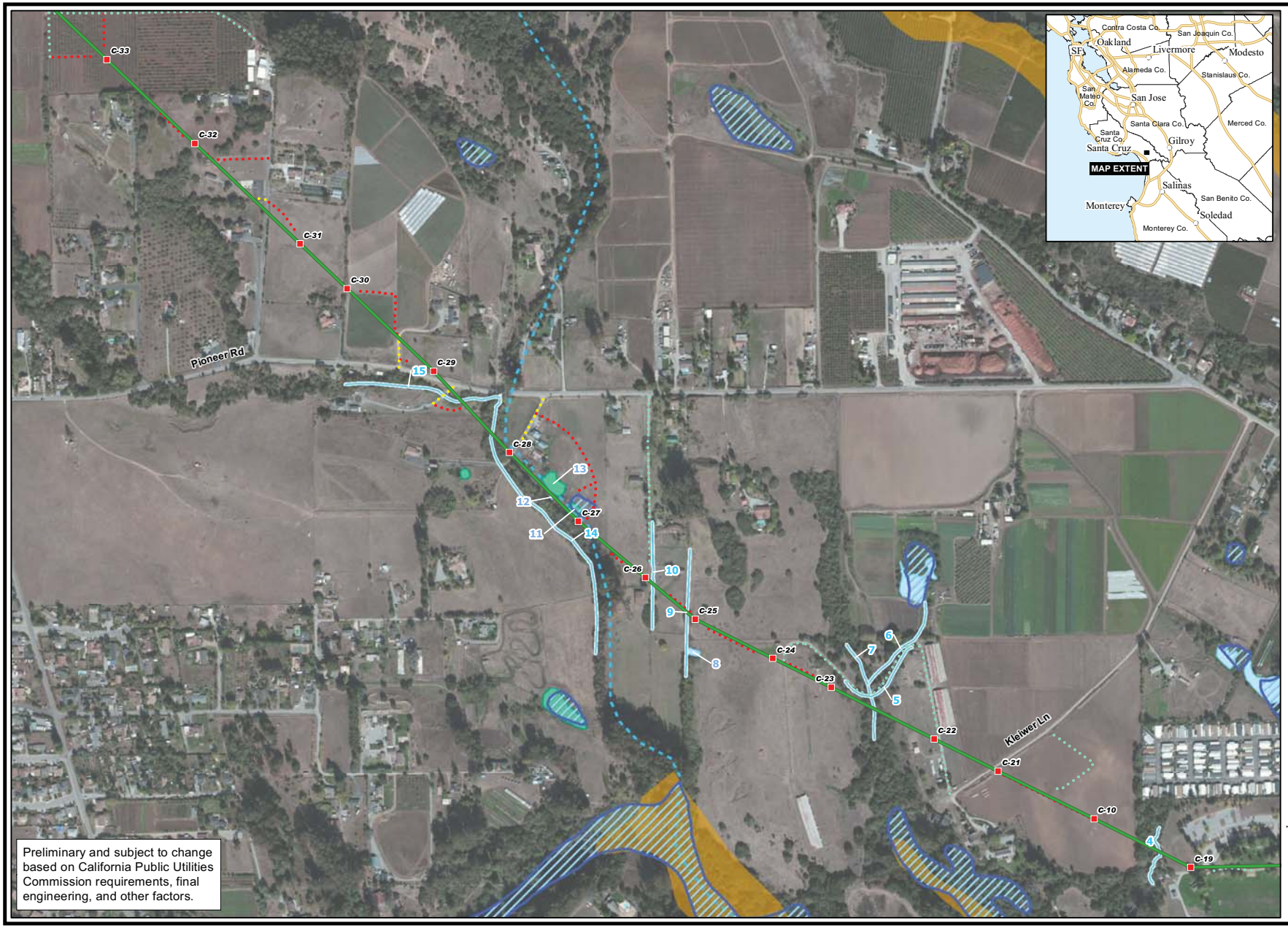

Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 3.8-1
Hydrologic Features Map
Map 2 of 6

- Existing Substation
- New TSP
- New Wood Pole
- New Distribution Pole
- New Stub Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road
- Stream/Drainage
- National Hydrography Dataset Stream

Vegetation Community

- Lacustrine
- Fresh Emergent Wetland
- NWI Wetlands
- FEMA Flood Zone

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Santa Cruz 115 kV Reinforcement Project

Figure 3.8-1
Hydrologic Features Map
Map 3 of 6

- Existing Substation
- New TSP
- New Wood Pole
- New Distribution Pole
- New Stub Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road
- Stream/Drainage
- National Hydrography Dataset Stream

Vegetation Community

- Lacustrine
- Fresh Emergent Wetland
- NWI Wetlands
- FEMA Flood Zone

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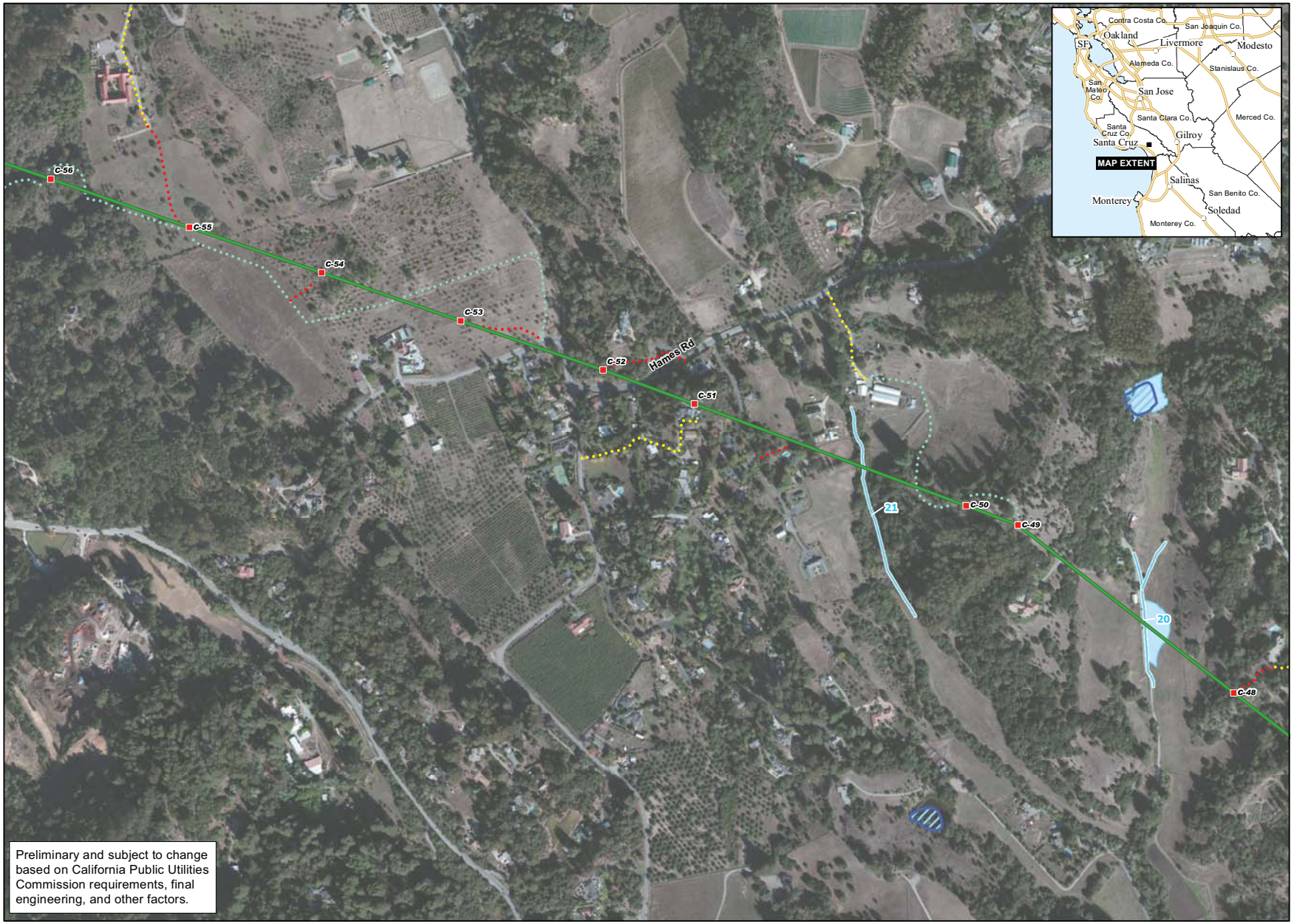

Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 3.8-1
Hydrologic Features Map
Map 4 of 6

- Existing Substation
- New TSP
- New Wood Pole
- New Distribution Pole
- New Stub Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road
- Stream/Drainage
- National Hydrography Dataset Stream

Vegetation Community

- Lacustrine
- Fresh Emergent Wetland
- NWI Wetlands
- FEMA Flood Zone

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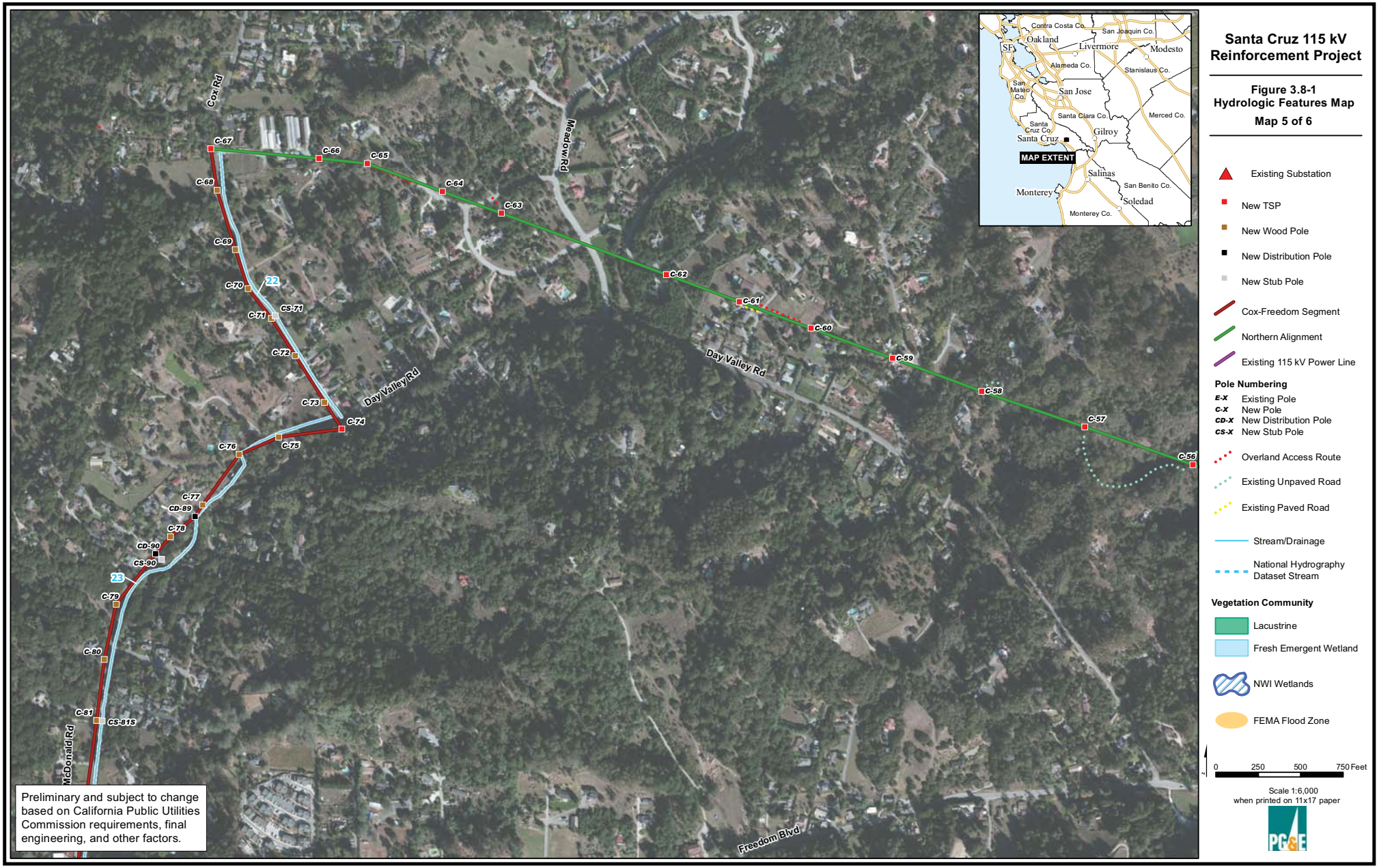

Santa Cruz 115 kV Reinforcement Project

Figure 3.8-1
Hydrologic Features Map
Map 5 of 6

- Existing Substation
- New TSP
- New Wood Pole
- New Distribution Pole
- New Stub Pole
- Cox-Freedom Segment
- Northern Alignment
- Existing 115 kV Power Line

Pole Numbering

- E-X Existing Pole
- C-X New Pole
- CD-X New Distribution Pole
- CS-X New Stub Pole

- Overland Access Route
- Existing Unpaved Road
- Existing Paved Road
- Stream/Drainage
- National Hydrography Dataset Stream

Vegetation Community

- Lacustrine
- Fresh Emergent Wetland
- NWI Wetlands
- FEMA Flood Zone

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Table 3.8-2: Hydrologic Resources Inventory

Resource Number	Feature Type	Within Project Work Area?	USACE-Jurisdictional Feature?[1]	CDFG-Jurisdictional Feature?	Vegetation Community Type
1	Drainage	No	Yes	Yes	Coastal Riparian
2	Seep	No	Yes	No	Freshwater Emergent Wetland
3	Drainage	No	Yes	Yes	Coast Oak Woodland
4	Drainage	No	Yes	Yes	Coast Oak Woodland
5	Ditch	No	Yes	Yes	Coastal Riparian
6	Drainage	No	Yes	Yes	Coastal Riparian
7	Drainage	No	Yes	Yes	Coastal Riparian
8	Seep	No	Yes	Yes	Freshwater Emergent Wetland
9	Drainage	No	Yes	Yes	Freshwater Emergent Wetland
10	Drainage	No	Yes	Yes	Freshwater Emergent Wetland
11	Pond	No	Yes	Yes	Lacustrine
12	Pothole pond	No	Yes	Yes	Lacustrine
13	Pond	No	Yes	Yes	Lacustrine
14	Drainage	No	Yes	Yes	Coastal Riparian
15	Drainage	No	Yes	Yes	Coastal Riparian
16	Drainage	No	Yes	Yes	Nonnative Woodland
17	Ditch	No	Yes	Yes	Disturbed Developed
18	Creek (Corralitos Creek)	No	Yes	Yes	Coastal Riparian
19	Drainage	No	Yes	Yes	Disturbed Developed and Mixed Chaparral
20	Ditch	No	Yes	Yes	Disturbed Developed
21	Drainage	No	Yes	Yes	Coastal Riparian
22	Ditch	Yes	Yes	Yes	Disturbed Developed
23	Ditch	Yes	Yes	Yes	Disturbed Developed
24	Ditch	No	Yes	Yes	Disturbed Developed
25	Ditch	Yes	Yes	Yes	Disturbed Developed
26	Ditch	No	Yes	Yes	Disturbed Developed
27	Ditch	No	Yes	Yes	Disturbed Developed

[1] This assessment is based on preliminary field observations; a wetland delineation has not yet been conducted.

Surface water quality within the project area generally varies according to land use in the surrounding watershed. For example, in areas where agricultural uses are adjacent to a stream, runoff into the stream can contain sediment and contaminants from fertilizers, pesticides, and livestock. In areas characterized by urban development (residential, commercial, and industrial uses, roadways, parking lots, and landscape areas), runoff is more prone to contain elevated levels of oil, grease, nutrients, sediments, and heavy metals. Chemicals found in agricultural runoff vary during a storm event, from event to event at a given site, and from site to site within a given area. Variances in chemical levels can be the result of differences in rainfall intensity and occurrence, geographic features, and the land use of a site. Runoff from disturbed lands can contribute sediment, pesticides, fertilizers, and other pollutants to receiving waters. Within the project area, sources of pollutants to surface waters include urban runoff from the unincorporated communities of Corralitos and Amesti.

Groundwater Quality

Groundwater contributes approximately 80 percent of the County's domestic water supply. The groundwater in the County is recharged entirely by precipitation. In most areas of the County, groundwater levels rise significantly during the rainy season, often coming within 1 to 6 feet of the ground surface. Water tables can fluctuate by as much as 10 to 20 feet during the year.

Groundwater in the project area is derived from the Pajaro Valley Groundwater Basin. The Pajaro Valley Groundwater Basin covers approximately 120 square miles of the County, Monterey County, and a small portion of northwestern San Benito County. The Pajaro River and its tributaries including Corralitos Creek drain the Pajaro Valley Groundwater Basin. Basin recharge occurs through rainfall and streamflow seepage from the Pajaro River and its tributaries and percolation of irrigation water. In the project area, the basin is recharged through surface runoff and infiltration. In 2009, the groundwater in the project area was determined to range from mean sea level (MSL) to 15 feet below MSL. Pajaro Valley groundwater levels have been in a decreasing trend due to pumping in excess of recharge. In 2009, the sustainable yield of the basin was calculated to be 24,000 acre-feet per year under current pumping conditions.

In general, groundwater in the Pajaro Valley is of high quality and suitable for agricultural and municipal use, with some degradation resulting from agricultural activities, landfills, and septic tanks, as well as seawater intrusion caused by groundwater overdraft. The Central Water District lies within a groundwater recharge area with low-density housing, which, in addition to the filtering ability of the sandy soil present in the area, attributes to the high quality of the groundwater within the Central Water District.

Floodplains

The project spans or is located adjacent to areas that are subject to flooding. According to the FEMA Flood Hazard Boundary Maps, there are no poles located within flood zones. However, the Northern Alignment, between the pole located approximately 1,500 feet south of the intersection of Amesti Lane and Poppy Hills Road and the pole located approximately 1,050 feet north of the intersection of Corralitos Road and Skylark Lane (approximately 160 feet) spans the 100-year flood zone of Corralitos Creek. In addition, approximately 76 feet of the Northern Alignment between the pole located approximately 1,500 feet south of the intersection of Amesti

Lane and Poppy Hills Road and the pole located approximately 1,050 feet north of the intersection of Corralitos Road and Skylark Lane spans the 200-year flood zone for Corralitos Creek. Approximately 700 feet of the Northern Alignment near the intersection of Green Valley Road and Rancho Todos Santo Road is located adjacent to the 100-year flood zone for Pinto Lake. In addition, approximately 400 feet of the Northern Alignment near the intersection of Lapus Drive and Agate Drive is adjacent to the 100-year flood zone for College Lake.

Dam or Levee Failure Inundation Areas

There are no dams or levees located within the project area. The nearest levee flood gate is located in the City of Watsonville on Corralitos Creek, approximately 1.6 miles southeast downstream of Green Valley Substation. The project alignment is not located within the Corralitos Creek levee failure inundation area.

Tsunamis, Seiches, and Mudflows

The County is located on Monterey Bay. Several active and potentially active earthquake faults are located within or near the County. An earthquake occurring in the Pacific Ocean could cause tsunamis offshore of the County. Within the County, tsunamis historically have been only a few meters in height. There has been minimal damage or loss of life in the County from tsunamis during recorded history. The County has identified tsunami inundation areas within the County; however, the project is not located within a tsunami inundation area. Based upon recent history (the past 200 years), the County has indicated it is at major risk for a tsunami, particularly in coastal areas, but the probability of one occurring is low. In the event of a tsunami, the potential for loss of life and property could be high in low-lying coastal areas. An earthquake occurring in or near any of the nearby faults could also result in seiches within impounded waters.

The project is not located within and does not span any lakes, pools, or other bounded waterbodies. The nearest lakes to the project include the following:

- Freedom Lake, located approximately 0.7 mile southwest of the intersection of Corralitos Road and Skylark Lane;
- Merk Lake, located approximately 0.4 mile southwest of the intersection of Corralitos Road and Skylark Lane;
- Pinto Lake, located approximately 0.2 mile southwest of the intersection of Green Valley Road and Rancho Todos Santo Road; and
- College Lake, located approximately 700 feet east of Green Valley Substation.

Because slopes in the project area generally do not have high inclinations, there is a low potential for landslides or mudflows in the area. Most of the soil units that have been mapped in the project area have slopes of 0 to 15 percent. In the Northern Alignment, the majority of the area is composed of Watsonville loam with 0- to 15-percent slopes. The majority of the Cox-Freedom Segment—approximately 64 percent—is composed of Baywood loamy sand with 2- to 15-percent slopes. Approximately 27 percent of the Cox-Freedom Segment is composed of Baywood loamy sand with 15- to 30-percent slopes. According to the U.S. Geological Survey (USGS), landslide incidence in the project area is low. The project area contains few, if any, large mapped landslides. The project area is also not located in a principal debris-flow source area, and has not been identified as being likely to produce debris flows by the USGS. In

addition, the County Geographic Information System (GIS) Map Gallery Landslide Hazard Areas Map does not indicate any known landslide hazard areas within the project area. The nearest landslide hazard areas are located approximately 3.5 miles northwest of the Northern Alignment, in the vicinity of the Forest of Nisene Marks State Park.

3.8.4 Potential Impacts and Applicant-Proposed Measures

3.8.4.1 Significance Criteria

According to Appendix G of the CEQA Guidelines, the project would have a significant impact on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level
- 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 that would result in substantial erosion or siltation on- or off-site
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site
- Create or contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff
- Otherwise substantially degrade water quality
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map
- Place structures that would impede or redirect flood flows within a 100-year flood hazard area
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
- Cause inundation by seiche, tsunami, or mudflow

3.8.4.2 Applicant-Proposed Measures

With implementation of the following APM, which involves preparation and implementation of the project's SWPPP, potentially significant impacts to hydrology and/or water quality will be less than significant:

APM HYD-01. Implementation of a SWPPP.

PG&E will file a Notice of Intent with the State Water Resources Control Board for coverage under the General Construction Storm Water Permit and will prepare and implement a SWPPP in accordance with General Order No. 99-08-DWQ. Implementation of the SWPPP will help stabilize graded areas and waterways and reduce erosion and sedimentation. The following measures are generally drawn from that permit and PG&E's standard practices, and will be included in the SWPPP prepared for the construction of the project:

- All Best Management Practices (BMPs) will be on-site and ready for installation before the start of construction activities.

- BMPs will be developed to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed APMs are followed throughout project construction. Examples of BMPs include the following measures:

  - straw wattles, water bars, covers, silt fences, sensitive area access restrictions (e.g., flagging), or other sediment containment methods placed around and/or down slope of work areas prior to earth disturbing activities and before the onset of winter rains or any anticipated storm events;

  - mulching, seeding, or other suitable measures to protect exposed areas during construction activities as necessary;

  - installation of additional silt fencing prior to construction to address unforeseen runoff into nearby wetlands and drainages;

  - use of brooms and shovels (as opposed to water) when possible to maintain a clean site;

  - construction of a stabilized construction entrance/exit to prevent tracking of dirt onto public roadways;

  - establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids;

  - no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or drainages; and

  - positioning stationary equipment (e.g., pumps, generators, etc.) used or stored within 100 feet of wetlands, culverts, or drainages within secondary containment.

- All BMPs will be inspected before and after each storm event. BMPs will be maintained on a regular basis, and replaced as necessary throughout the course of construction.

- A Qualified SWPPP Practitioner will supervise placement of silt fencing to limit the area of disturbance. The silt fence will be monitored regularly to ensure effectiveness.

3.8.4.3 Question 3.8a – Would the project violate any water quality standards or waste discharge requirements?

Construction – Less-than-Significant Impact

Construction-related impacts to water quality could result from several different sources, including contamination from construction chemicals, fuels, or other hazardous materials, or increased erosion due to grading or vegetation clearing that leads to increased sedimentation. In order to establish access roads and routes, and clear staging areas/landing zones and work areas for construction activities, up to 30 acres of existing vegetation may need to be cleared or mowed. The project could have the potential to impact water quality as a result of erosion and subsequent sedimentation that can result from earth-disturbing activities. Accidental releases of hazardous materials used during construction, such as diesel fuel, hydraulic fluid, oils and grease, and concrete, have the potential to occur. These potential impacts are also discussed in Section 3.7 Hazards and Hazardous Materials.

PG&E will assess the risk to water quality based site-specific soil characteristics, slope, and construction schedule and develop a SWPPP that addresses potential water quality concerns, as described in APM HYD-01. PG&E will also route access roads and overland routes around waterbodies and flag hydrologic features for avoidance during construction work. Best management practices (BMPs) will be developed for each activity that has the potential to degrade surrounding water quality through erosion, sediment run-off, and other pollutants. These BMPs will be included in the project's SWPPP and will be implemented and monitored throughout the project by a Qualified SWPPP Practitioner. Hydrologic features 8, 9, 24, 25, and 27 cross temporary work areas, as shown in Table 3.8-2: Hydrologic Resources Inventory. Temporary indirect impacts to water quality could occur as a result of erosion and sedimentation caused by construction activities occurring within the vicinity of these features. However, all pole construction will occur during the dry season, when no water will be present in the majority of the hydrologic features in the project area. In addition, with implementation of the SWPPP described in APM HYD-01, impacts to water quality within these hydrologic features will be minimized or avoided.

The portion of the project from approximately 850 feet northeast of the intersection of Whiteman Avenue and Harrison Way to approximately 1,150 feet southwest of the intersection of Aldridge Lane and Blake Avenue is located within a watershed that drains to Corralitos Creek, which is a 303(d)-listed water. In addition, the portion of the project between Green Valley Substation and approximately 250 feet east of the intersection of Oso Mesa and Niguel drains to College Lake, which has connectivity to Corralitos Creek. The SWPPP will consider the sensitivity of these waters in the development of appropriate BMPs and include a sampling and monitoring plan. Implementation of site-specific erosion and sediment control devices and proper handling of potentially hazardous materials during will ensure that the project does not contribute to the

pollutant load for 303(d)-listed water resources located within the vicinity of work areas. As a result, less-than-significant impacts to water quality are anticipated.

Operation and Maintenance – No Impact

Operation and maintenance activities will typically occur in previously disturbed areas and will not generally require water usage. Daily operation and maintenance of the project primarily consists of patrols and will not impact water quality or result in discharges to waters. In addition, operation and maintenance activities will not significantly differ from activities currently being performed on the existing lines and substation facilities. Therefore, no new impacts to hydrology or water quality are anticipated as a result of operation and maintenance of the project.

3.8.4.4 Question 3.8b – Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Construction – Less-than-Significant Impact

Approximately 0.74 acre-feet of water will be required during project construction for dust control. Based on the elevation of the project (approximately 100 to 400 feet above MSL) and the depth to groundwater being approximately 15 feet below MSL, no dewatering activities are anticipated to be required. The water will be obtained from a local municipal water utility. Approximately 80 percent of the County's domestic water supply comes from groundwater. However, as the sustainable yield of the basin in which the project is anticipated to obtain water from is approximately 24,000 acre-feet per year and the project will only utilize less than 0.01 percent of that amount, construction of the project will have a negligible effect on the available water in the area.

Groundwater in the project area is recharged through surface runoff. The installation of new tubular steel poles, wood, stub, and distribution poles, and the addition of equipment at Rob Roy Substation will create approximately 0.18 acre of new impermeable surface. In addition, approximately 91 wood, stub, distribution, and cable poles will be removed from the project alignment, which will result in the removal of approximately 0.02 acre of impermeable surface from the project area. Therefore, a total of 0.16 acre of new impermeable surfaces will be added to the project area, which will not significantly affect groundwater depletion nor will it affect infiltration. Therefore, the introduction of small areas of impervious surfaces will have a negligible effect on groundwater recharge.

According to the Pajaro Valley Water Management Agency, groundwater depth in the project area ranges from sea level to approximately 15 feet below MSL. The maximum excavation depth of the poles to be installed for the project is approximately 33 feet below grade. As the elevation of the project area ranges from approximately 100 feet to 400 feet above MSL, excavation activities will not reach the depth of the groundwater basin. Therefore, impacts will be less than significant.

Operation and Maintenance – No Impact

Water will be used during operation and maintenance activities to wash the insulators and conductors. A negligible amount of additional water will be needed to wash the new insulators and conductor; no significant amounts of additional groundwater will be utilized beyond what is currently required. The small amount of additional groundwater needed will not substantially deplete groundwater supplies or interfere with groundwater recharge. Operation and maintenance activities will not result in the increase of impermeable surfaces in the project area. Therefore, no impact to groundwater supplies will occur.

3.8.4.5 Question 3.8c – Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Construction – Less-than-Significant Impact

Construction of the project will require grading along access roads, pull sites, pole work areas, staging areas, and portions of Rob Roy Substation. During grading, soils will be disturbed and redistributed within the site to establish a safe, level work area. In certain areas, existing vegetation will be removed during grading activities and soils will be disturbed, making the sites more susceptible to wind and water erosion. Vehicles and equipment are prone to tracking soil and/or spoil from work areas to paved roadways, which is another form of erosion. Water trucks, used during construction to assist with soil compaction and abate fugitive dust, will also have the potential to cause erosion and discharges. In addition, soil compaction, whether intentional or as a result of heavy vehicle and equipment use, can increase surface runoff, which in turn increases the erosion potential.

After grading work has been completed, road-base or gravel will be temporarily used at Rob Roy Substation to stabilize the surface to minimize wind and water erosion and reduce tracking. Consistent with the County Code, the road-base or gravel will later be replaced with secondary containment areas within the substation, as discussed in Section 3.7 Hazards and Hazardous Materials. Secondary containment may consist of the installation of concrete foundations in the substation, which, along with the installation of new tubular steel poles and the removal of existing wood poles, will result in a total permanent addition of approximately 0.16 acre of impermeable surface to the project area. However, this small amount of impermeable surface is not expected to increase erosion or siltation in the project area. All temporarily disturbed areas within and around Rob Roy Substation will be restored to the extent necessary for safe operation. Project-wide, the amount of temporary ground disturbance will be up to 30.0 acres. Each pole location will be stabilized according to the project's SWPPP. In addition, after the pole or structure has been installed, all areas that were temporarily disturbed will be restored to preconstruction conditions, to the extent practicable. This will include returning areas to their original contours and allowing natural regrowth or reseeding in accordance with prearranged landowner agreements, where applicable. Construction of the project is not expected to result in discharges other than storm water. Because discharges will be managed in accordance with the project's SWPPP, runoff is expected to be similar to pre-construction conditions and an increase in erosion and/or sedimentation is not anticipated. Thus, impacts will be less than significant with the implementation of the APM.

There are no poles located within drainages that will be removed or replaced as a result of the project. In addition, no poles will be placed within drainages during project construction. Therefore, no erosion or flow alteration resulting from impacts to drainages will occur. As previously discussed and detailed in APM HYD-01, PG&E will obtain and implement a SWPPP for construction of the project, which will provide BMPs to minimize sediment transport to adjacent drainages. Given that ground disturbing activities will not directly impact drainages and disturbance is relatively small, storm water runoff is not expected to cause substantial erosion or siltation within drainages and impacts will be less than significant.

Operation and Maintenance – No Impact

Drainage patterns will be returned to near pre-construction conditions upon completion of construction. Flow characteristics will remain the same during operation and maintenance of the project and will not create long-term impacts. Therefore, no impact will occur.

3.8.4.6 Question 3.8d – 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?

Construction – Less-than-Significant Impact

As previously discussed in Question 3.8c, no new poles will be placed in drainages as a result of the project. In addition, no removal or replacement of existing poles within drainages will occur. Grading will be required to establish work area and access, but the drainage patterns will be maintained and no change to downstream flows is expected. Approximately 0.16 acre of impermeable surface will be added to the project area as a result of the installation of new poles, removal of existing poles, and modifications of Rob Roy Substation. However, because the areas of new impermeable surface would not be contiguous and would be relatively small at each location—approximately 0.07 acre (3,000 square feet) at the pole sites and approximately 0.1 acre at Rob Roy Substation—drainage at each location would occur within the same general area as before. Minimal increases in impermeable surface would not substantially increase the existing velocity or volume of stormwater flows or elevation either on site or in off-site areas. As such, flow rates and volumes would not be substantially altered. Therefore, existing drainage patterns on site would not change significantly from pre-construction conditions. No flooding is anticipated to occur as a result of the project. Construction of the project will not directly impact drainages in the project area; therefore, drainages will not be altered and drainage patterns will remain unchanged. As a result, impacts will be less than significant.

Operation and Maintenance – No Impact

Operation and maintenance activities will primarily occur in previously disturbed areas of the ROW. Alteration of drainages will not occur during operation and maintenance of the project. Therefore, the project will not result in the potential for increased runoff volumes and there will be no impact on water runoff or flooding.

3.8.4.7 Question 3.8e – Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Construction – Less-than-Significant Impact

As previously discussed, construction of the project could create polluted runoff from several different sources, including contamination from construction chemicals, fuels, or other hazardous materials, or increased erosion that leads to sedimentation. However, PG&E will prevent the transport of hazardous material in storm water by properly storing hazardous materials and preventing contact with rainwater in accordance with the SWPPP.

The only storm water drainage system in the project area consists of an open system of roadside ditches and culverts along the eastern side of Freedom Boulevard. There are no municipal storm water drainage facilities located in the project area that could be impacted by construction of the project. Increased storm water runoff could occur due to the removal of vegetation, compaction of soil, or creation of impermeable surfaces. The majority of the project work areas consist of pole work areas along the Northern Alignment and the Cox-Freedom Segment. The pole work areas will typically be 140 feet by 100 feet along the Northern Alignment and approximately 20 feet by 20 feet along the Cox-Freedom Segment, and will have minimal effects on storm water runoff within a basin. Approximately 110 new poles will be installed and modifications will be made to Rob Roy Substation. A total of approximately 91 wood, stub, distribution, and cable poles will be removed, resulting in the addition of approximately 0.02 acre of permeable surface to the project area. The total increase in impermeable surface—approximately 0.16 acre—will be negligible, particularly since the new surfaces are not contiguous. Because the addition of impermeable surface will be minimal, runoff from the project area is not expected to change substantially from pre-construction conditions and impacts will be less than significant.

Operation and Maintenance – No Impact

No increase in storm water runoff or polluted runoff will occur when compared to pre-construction conditions. Operation and maintenance activities will not introduce new impermeable surfaces or increase runoff. Therefore, there will be no impact.

3.8.4.8 Question 3.8f – Would the project otherwise substantially degrade water quality? – Less-than-Significant Impact

Potential sources of pollutants and activities that can contribute to water quality degradation are discussed in detail in the response to Question 3.8a and Question 3.8e. Impacts to water quality will be minimized through the implementation of the project's SWPPP, which is described in APM HYD-01. No other foreseeable sources of pollution are anticipated to be associated with construction of the project. As a result, impacts to water quality will be less than significant.

3.8.4.9 Question 3.8g – Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? – No Impact

No housing will be constructed as part of the project. Therefore, no housing will be placed in flood hazard areas, and no impact will occur.

3.8.4.10 Question 3.8h – Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows? – No Impact

According to the FEMA Flood Hazard Boundary Maps, no poles are located within flood zones. Portions of the project span or are adjacent to flood zones. The portion of the project—the Northern Alignment—that spans or is adjacent to flood hazard areas will be rebuilt from a single-circuit line to a double-circuit line by replacing the existing wood power poles with tubular steel poles. No structures will be constructed within flood zones as part of the project. The tubular steel poles will replace the existing wood poles at a ratio of approximately one-to-one, and will typically be placed in line with the existing conductor and within 20 feet of the existing wood poles. The new tubular steel poles will not redirect flood flows and will not create any new impediments or obstructions within the flood hazard areas. Therefore, no impact will occur as an impediment or redirection of flood flows within a 100-year flood hazard area is not possible with construction and operation and maintenance of the project.

3.8.4.11 Question 3.8i – 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

There are no dams or levees located within the project area. The project is not located within the Corralitos Creek levee failure inundation area. No structures would be constructed within the levee failure inundation area. Construction of the project will not impact any levees or dams or result in flooding as a result of the failure of a levee or dam. Similarly, the project does not have the potential to result in a flood. Therefore, no impact will occur.

3.8.4.12 Question 3.8j – Would the project result in inundation by seiche, tsunami, or mudflow? – No Impact

The project is not located within a tsunami inundation area. In addition, the project is not located within and does not span any lakes, pools, or other bounded waterbodies. The nearest lakes to the project alignment are Pinto Lake, located approximately 0.2 mile southwest of the intersection of Green Valley Road and Rancho Todos Santo Road, and College Lake, located approximately 700 feet east of Green Valley Substation. If a seiche were to occur within these lakes, the project will likely not be affected as it is not located within and does not span the lakes. Because slopes in the project area generally do not have high inclinations and there are no known landslide hazard areas within the project site, there is a low potential for landslides or mudflows. The project area is also not located in a principal debris-flow source area, and has not been identified as being likely to produce debris flows by the USGS. In addition, project activities will generally occur within PG&E's ROW and the majority of poles will be placed in the same or similar location as the existing structures. Therefore, the project will not cause or be impacted by inundation due to seiche, tsunami, or mudflow and post construction conditions will be similar to pre-construction conditions. As a result, no impact will occur.

3.8.5 References

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.9 NOISE

Would the Project Result In:	Potentially Significant Impact	Less than Significant 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?				✓

3.9.1 Introduction

This section assesses the potential noise and vibration impacts associated with the construction and operation and maintenance (O&M) of the project. Construction noise has the potential to temporarily impact noise-sensitive receptors in the area; however, these impacts will be less than significant with implementation of the applicant-proposed measures (APMs) provided in Section 3.9.4 Potential Impacts and Applicant-Proposed Measures. There will be no impacts due to operational noise.

3.9.2 Methodology

To establish noise standards for the project, information on existing noise sources and regulatory standards was obtained from local, regional, state, and federal literature. The evaluation of potential noise impacts involved measuring existing noise levels at the project site and in the vicinity, characterizing the existing noise environment, calculating noise generation from the project facilities based on the performance of similar equipment at other locations, and examining typical noise levels resulting from construction and operation activities. This noise analysis focuses on the construction activities associated with the Northern Alignment, Cox-Freedom Segment, Rob Roy Substation Connections, and Rob Roy Substation, for which grading of the site and use of heavy equipment will occur. Because maintenance activities will be similar to current activities, no further analysis of these activities was required.

3.9.3 Existing Conditions

3.9.3.1 Regulatory Background

Federal

There are no federal noise standards that specifically regulate environmental noise related to electrical transmission lines and substation facilities. However, in 1974, the United States (U.S.) Environmental Protection Agency (EPA) established general guidelines for noise levels. Although these guidelines are not standards, criteria, regulations, or goals, they are defined to protect public health and welfare with an adequate margin of safety, and to guide the implementation of local noise standards. The EPA guidelines are as follows:

- Equivalent sound pressure level (L_{eq}) over a 24-hour period (24) of less than or equal to 70 A-weighted decibels (dBA)[1] to protect against hearing loss

- Day-night equivalent level (L_{dn})[2] of less than or equal to 55 dBA to protect against activity interference and annoyance in residential areas, farms, and other outdoor areas where quiet is a basis for use

[1] The human ear is not uniformly sensitive to all sound frequencies; therefore, the A-weighting scale was devised to correspond with human ear sensitivity. The A-weighting scale uses the specific weighting of sound pressure levels from about 31.5 hertz to 16 kilohertz to determine the human response to sound.

[2] L_{dn} is the A-weighted average of sound levels gathered over a 24-hour period. Measurements taken during the nighttime periods are weighted upward by 10 decibels, recognizing that humans are more sensitive to noise at night than during the day.

- $L_{eq}(24)$ of less than or equal to 55 dBA to protect against outdoor activity interference where limited time is spent, such as in school yards and playgrounds

- L_{dn} of less than or equal to 45 dBA to protect against indoor activity interference and annoyance in residences

- $L_{eq}(24)$ of less than or equal to 45 dBA to protect against indoor activity interference in school yards

The federal government has passed various general laws to regulate and limit noise levels in the U.S. These are discussed in the following subsections.

Noise Pollution and Abatement Act of 1970

The Noise Pollution and Abatement Act of 1970 established the Office of Noise Abatement and Control within the EPA. This office was authorized to conduct a full and complete investigation of noise and its effect on public health and welfare. The investigation was to include an identification of noise sources, projected noise levels, and effects of noise on persons, animals, and property.

In 1981, the Administration concluded that noise issues were best handled at the state or local government level. As a result, in 1982, the EPA phased out funding for the Office of Noise Abatement and Control as a means of transferring the primary responsibility of regulating noise to state and local governments. However, the Noise Control Act of 1972 and the Quiet Communities Act of 1978 were not rescinded by Congress and remain in effect today.

Noise Control Act of 1972

The Noise Control Act of 1972 was the first comprehensive statement of national noise policy. It states that "It is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."

Quiet Communities Act of 1978

The Noise Control Act of 1972 was amended by the Quiet Communities Act of 1978, to promote the development of effective state and local noise control programs, provide funds for noise research, and produce and disseminate educational materials to the public on the harmful effects of noise and ways to effectively control it.

Agencies including the U.S. Department of Transportation (USDOT), U.S. Department of Labor, Federal Railroad Administration, and Federal Aviation Administration developed their own noise control programs, with each agency setting its own criteria.

Occupational Health and Safety Act of 1970

This act covers all employers and their employees in the 50 states, the District of Columbia, Puerto Rico, and other U.S. territories. Administered by the Occupational Health and Safety Administration (OSHA), the act assigns OSHA two regulatory functions—setting standards and conducting inspections to ensure that employers are providing safe and healthful workplaces.

OSHA standards may require that employers adopt certain practices, means, methods, or processes reasonably necessary and appropriate to protect workers on the job. Employers must become familiar with the standards applicable to their establishments and eliminate hazards. Included in this act is a regulation for worker noise exposures to remain below 90 dBA over an 8-hour work shift. Additionally, in any area where noise exposure exceeds 85 dBA, hearing protection is required and a sign labeled "High Noise Level Area" must be posted.

Federal Aviation Administration

The Federal Aviation Administration (FAA) establishes 65 decibels (dB) L_{dn} as the noise standard associated with aircraft noise measured at exterior locations in noise-sensitive land uses. This standard is also generally applied to railroad noise.

U.S. Department of Transportation

Recognizing that local noise ordinances do not always provide guidelines on assessing the impacts of construction noise, the USDOT recommends the development of project-specific criteria when local ordinances do not provide specific noise thresholds. In developing project-specific criteria, the existing noise environment, absolute noise levels during construction activities, duration of construction, and adjacent land uses should be taken into consideration. The USDOT guidelines are provided in Table 3.9-1: USDOT Construction Noise Guidelines. If these guidelines are exceeded, there may be an adverse reaction from the community.

Table 3.9-1: USDOT Construction Noise Guidelines

Land Use	8-hour L_{eq} (dBA)	
	Day	Night
Residential	80	70
Commercial	85	85
Industrial	90	90

Source: USDOT, 2006

State

California Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. The act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.

California Noise Insulation Standards

The California Noise Insulation Standards, adopted in 1974 by the California Commission on Housing and Community Development, apply to multi-family residential buildings. These

standards regulate interior room noise attributable to outside noise sources. They also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior community noise equivalent level (CNEL)[3] (which is roughly equivalent to L_{dn}) of 60 dB or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dB.

Caltrans Transportation- and Construction-Induced Vibration Guidance

This document provides practical guidance to California Department of Transportation (Caltrans) engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. Continuous or frequent intermittent vibration sources, such as impact pile drivers, are significant when their peak particle velocity (PPV) exceeds 0.1 inch per second. More specific criteria for structures and potential annoyance have been developed by Caltrans and will be used to evaluate potential project continuous or transient sources. Table 3.9-2: Vibration Damage Threshold Guidance lists the maximum levels of vibration allowed by Caltrans, and Table 3.9-3: Human Response to Transient Vibration lists the Caltrans thresholds of perception for human response.

Table 3.9-2: Vibration Damage Threshold Guidance

Structure Type/Condition	Maximum Peak Particle Velocity[4] (inches per second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, and ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans, 2006

[3] CNEL measurements are A-weighted averages of sound levels gathered over a 24-hour period. Measurements taken during the evening are weighted upward by 5 decibels and those taken during nighttime periods are weighted upward by 10 decibels, recognizing that humans are most sensitive to noise during late night hours and are more sensitive to noise during the evening than during the day. CNEL and L_{dn} sound level measurements provide similar results and are often used interchangeably.

[4] Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3.9-3: Human Response to Transient Vibration

Human Response	Peak Particle Velocity (inches per second)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035

Source: Caltrans, 2006

Local

Each local government outlines requirements for noise abatement and control in its general plan and municipal code. The general plan typically sets overall goals and objectives, and the municipal codes sets specific sound limits.

Santa Cruz County General Plan

The Santa Cruz County General Plan contains Land Use Compatibility Guidelines for new developments and limits noise levels from stationary sources. For all new commercial and industrial developments that would increase noise levels above the maximum allowable standards of the Land Use Compatibility Guidelines in Table 3.9-4: Land Use Compatibility Guidelines, the best available control technologies are to be used to minimize noise levels. In no case are the noise levels to exceed the standards presented in Table 3.9-5: Maximum Allowable Noise Exposure Stationary Noise Sources. These limits would be applicable to the noise from the substations. Significant degradation of the noise environment includes:

- Causing the L_{dn} in existing residential areas to increase by 5 dB or more and remain below 60 dB
- Causing the L_{dn} in existing residential areas to increase by 3 dB or more, thereby exceeding an L_{dn} of 60 dB
- Causing the L_{dn} in existing residential areas to increase by 3 dB or more if the L_{dn} currently exceeds 60 dB

The Santa Cruz County General Plan requires mitigation of construction noise as a condition of approvals of projects within County jurisdiction.

3.9.3.2 Environmental Setting

Noise Monitoring Results

Sound levels in most communities fluctuate depending on the activity of nearby and distant noise sources, time of the day, or season of the year. Within an hour, a sound level can fluctuate between the lowest and highest levels.

Table 3.9-4: Land Use Compatibility Guidelines

Land Use Category	Community Noise Exposure (Ldn or CNEL [dBA])		
	Normally Acceptable	Conditionally Acceptable	Unacceptable
Residential, Hotels, and Motels	50 to 60	60 to 75	75+
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	50 to 65	65 to 80	80+
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	50 to 60	60 to 75	75+
Office Buildings, Business Commercial, Business Professional	50 to 60	60 to 80	80+
Auditoriums, Concert Halls, Amphitheaters	–	50 to 70	70+
Industrial, Manufacturing, Utilities, Agriculture	50 to 70	70+	–

Note: These guidelines are in terms of L_{dn} or CNEL, with measurements in dBA.
Source: Santa Cruz County, 1994

Table 3.9-5: Maximum Allowable Noise Exposure Stationary Noise Sources

	Daytime[5] (7:00 p.m. to 10:00 p.m.)	Nighttime[2, 5] (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}-average hourly noise level, dB[3]	50	45
Maximum Level, dB[3]	70	65
Maximum Level dB – Impulsive Noise[4]	65	60

Notes:
1. Noise thresholds in this table refer to those determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers (or other property line noise mitigation measures).
2. Applies only where the receiving land use operates or is occupied during nighttime hours.
3. Sound level measurements shall be made with "slow" meter response.
4. Sound level measurements shall be made with "fast" meter response.
5. The allowable level shall be raised to the ambient noise level where the ambient level exceeds the allowable level. The allowable level shall be reduced by 5 dB if the ambient hourly L_{eq} is at least 10 dB lower than the allowable level.

Source: Santa Cruz County, 1994

For a 15-hour period (7:00 a.m. to 10:00 p.m.) on April 19, 2011 through April 20, 2011, ambient sound measurements were taken at six locations at the project site to characterize the existing environment. These sound measurements included:

- L_{eq} (measured for each hour)
- L_{10}, the level that is exceeded 10 percent of the time period
- L_{90}, the level that is exceeded 90 percent of the time (often utilized as a descriptor of background noise)

For 80 percent of the monitoring period, the ambient sound levels were between the L_{90} and the L_{10}. Table 3.9-6: Noise Monitoring Results presents the average daytime level at each monitoring location for the 15-hour monitoring period. The monitoring results indicate that ambient noise levels in the project area are generally low.

Table 3.9-6: Noise Monitoring Results

Measurement Location	L_{eq}(day)	L_{dn}
West of Rob Roy Substation	51	52
West of McDonald Road, approximately 250 feet north of Ramada Lane	61	61
Rear of the side yard of 1750 Hames Road	42	42
Approximately 1,200 feet northwest of the intersection of Corralitos Road and Skylark Lane	51	50
Backyard of 250 Arroyo Drive	43	49
80 feet northwest of the Green Valley Substation Fence Line	46	51

Note: All measurements are reported in dBA.
Source: Acentech, Inc., 2011

Existing Noise Sources

The project is located in a region with a mix of rural residential development, undeveloped natural habitats, and agricultural areas. The existing noise environment in the project area includes contributions from local traffic, transformers at substations, activities by local residences, agricultural activities, and natural sounds. The project area is approximately 1.7 miles northeast of the Watsonville Municipal Airport, the nearest airport to the project site. The project area is outside of the airport's 60 dBA CNEL contour (line of equal sound level). In addition, the Monterey Bay Academy Airport, a private airstrip, is located approximately 5.5 miles south of the project area, and the Watsonville Community Hospital helipad is located approximately 2.4 miles southwest of the project area.

Existing Noise-Sensitive Receptors

The nearest noise-sensitive receptors to the project area are the approximately 557 residences located within 500 feet of the project facilities. The majority of these residences (approximately 302) are located between approximate Mileposts 0.0 and 2.0. No hospitals are located within 1 mile of the project site.

The nearest schools to the project include Corralitos Union School and Bradley Elementary School, which are located approximately 675 feet south of the Northern Alignment near the intersection of Corralitos Road and Skylark Lane; and Aptos High School, which is approximately 0.25 mile southeast of Rob Roy Substation.

Several parks are located within 1 mile of the project area. Pinto Lake County Park is spanned by the project beginning approximately 0.25 mile east of the intersection of Rancho Todos Santos Road and Green Valley Road; Mesa Village Park is approximately 0.2 mile north of where the alignment spans Green Valley Road; Scott County Park is approximately 0.8 mile southwest of project near the intersection of Freedom Boulevard and Quail Way; and Polo Grounds County Park is approximately 0.8 mile west of Rob Roy Substation.

In addition, two public facilities located within 1 mile of the project area could be classified as sensitive receptors—the Freedom Branch of the Watsonville Public Library, approximately 1 mile south of the nearest pole in the Northern Alignment; and the Corralitos Cultural Center, an art gallery and performing arts venue, approximately 0.4 mile northeast of the Northern Alignment.

3.9.4 Potential Impacts and Applicant-Proposed Measures

3.9.4.1 Significance Criteria

Noise

Standards of significance were derived from Appendix G of the CEQA Guidelines, which considers noise impacts to be significant if they would:

- 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
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- Result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Lie 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, and, as a result, expose people residing or working in the project area to excessive noise levels
- Lie in the vicinity of a private airstrip, and, as a result, expose people residing or working in the project area to excessive noise levels

The construction and operation noise and vibration thresholds of significance for the project components were derived from the regulatory documents discussed in Section 3.9.3.1 Regulatory Background. In general, any noise that exceeds the local jurisdiction's adopted standards is considered potentially significant. These thresholds are discussed in detail in the sections that follow.

Construction

Based on the previous discussion, Santa Cruz County (County) has not established explicit thresholds of significance for temporary or periodic increases in noise from construction. Therefore, the guidelines provided in Table 3.9-1: USDOT Construction Noise Guidelines were used in evaluating impacts at noise-sensitive receptors.

Operation and Maintenance

Based on the previous discussion, the following thresholds of significance for operational noise and maintenance noise have been developed for project-related increases at residential locations:

- An L_{dn} increase of less than 5 dB is considered not significant if L_{dn} remains below 60 dBA.
- An L_{dn} increase of 5 dB or more is considered significant.
- An L_{dn} increase of 3 dB or more that causes the L_{dn} to exceed 60 dBA is considered significant.
- An L_{dn} increase of 3 dB or more is considered significant if existing noise levels exceed 60 dBA.

Vibration

Based on the previous discussion, thresholds of significance were developed for project-related vibration at sensitive receptor locations. These are provided in Table 3.9-2: Vibration Damage Threshold Guidance and Table 3.9-3: Human Response to Transient Vibration.

Vibration amplitude decreases with distance from the source, as presented in Figure 3.9-1: Construction Vibration Amplitudes. Perceptibility of vibrations from construction equipment can be estimated by comparing the vibration thresholds provided in Table 3.9-3: Human Response to Transient Vibration to Figure 3.9-1: Construction Vibration Amplitudes. Vibration amplitudes with a PPV above 0.24 inch/second are considered potentially significant. This amplitude corresponds with a distance of approximately 10 feet from construction activities.

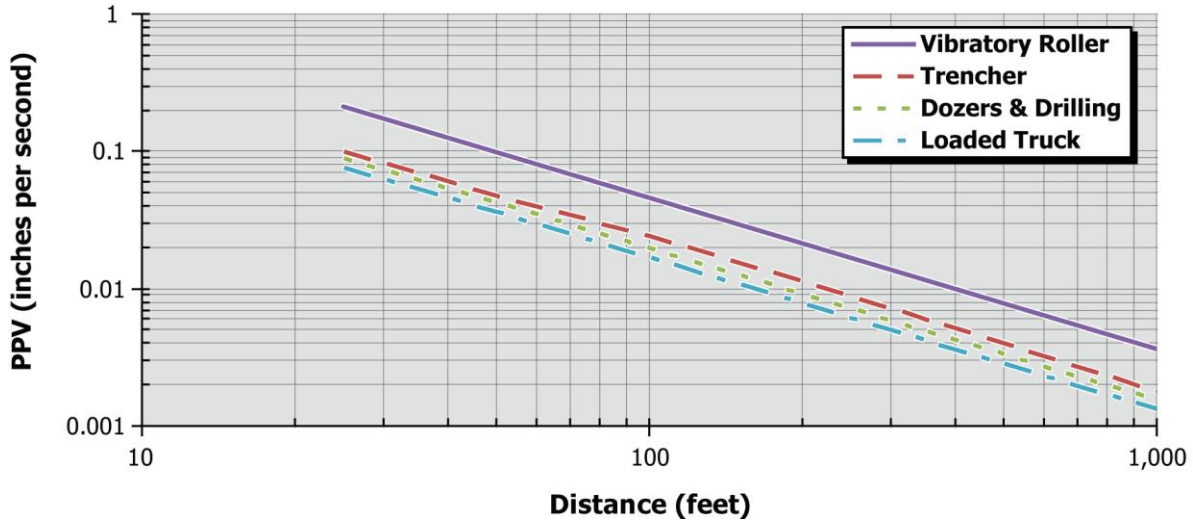
3.9.4.2 Applicant-Proposed Measures

With implementation of the following seven applicant-proposed measures (APMs), potentially significant impacts to noise will be reduced to a less-than-significant level.

APM NOI-01. Equipment Location and Orientation

Equipment will be positioned to maximize the distance from residences and to maintain safe and effective operation.

Figure 3.9-1: Construction Vibration Amplitudes



APM NOI-02. Equipment Maintenance and Mufflers

All internal combustion engine-driven equipment will be equipped with exhaust mufflers that are in good condition and that meet or exceed the manufacturers' specifications. All equipment will be maintained and tuned according to manufacturers' recommendations.

APM NOI-03. Backup Alarm Setting

When backup alarms have more than one volume setting, they will be set to the lowest volume setting that meets OSHA safety requirements.

APM NOI-04. Temporary Noise Barrier Use

When construction activities are located within 50 feet of residences, an approximately 3-foot-tall temporary noise barrier will be placed between the residences and any noise-generating equipment that cannot move under its own power while in use.

APM NOI-05. Restrict Helicopter Flight Paths

Helicopters will maintain a height of at least 500 feet when passing above residential areas, except when they are at temporary construction areas or actively assisting with the stringing of conductor or other project activities. Helicopters will maintain a lateral distance of at least 500 feet from schools when in session.

3.9.4.3 Question 3.9a – 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?

Construction – No Impact

As described in Section 3.9.3.1 Regulatory Background, Santa Cruz County does not have a quantitative noise standard related to the use of construction equipment; therefore, no relevant standards will be exceeded and there will be no impact.

Operation and Maintenance – No Impact

Power Lines

Corona is a phenomenon associated with all energized electric power lines. Modern power lines are designed, constructed, and maintained so that, during dry conditions, they operate below the corona-inception voltage and generate a minimum of corona-related noise. In inclement weather conditions, water droplets and fog can produce corona discharges from high-voltage lines that can be 5 to 20 dBA higher than usual. Corona levels (and audible noise levels) are highest during heavy rain, when the conductors are wet, but the noise generated by the rain will likely be greater than the noise generated by corona; thus, corona-related noise will not generally be noticeable. Corona noise is not usually an issue for lines rated at 230 kV and lower voltages.

The addition of a new 115 kV circuit will cause a small increase in the audible corona noise; however, this noise will be intermittent, generally masked by other noise sources such as vehicular traffic and weather events, and will be in compliance with the noise regulations presented in Table 3.9-5: Maximum Allowable Noise Exposure Stationary Noise Sources.

Additional noise sources associated with O&M of the power lines will include vegetation clearance, as needed, and annual inspections and maintenance procedures to maintain service continuity. Because O&M activities will change little from the existing practices, there will be no change in noise levels and therefore no impact.

Rob Roy Substation

New equipment will be installed at Rob Roy Substation to facilitate the connection of the new 115 kV circuit. The newly installed equipment will include:

- Four new 115 kV circuit breakers
- Twelve new 115 kV air break switches
- Nine new 115 kV coupling capacitor-type voltage transformers
- Two new approximate 35-foot-tall dead-end take-off structures
- A control enclosure

None of these new components are sources of significant continuous operational noise. Thus, the operating noise levels from the substation are not anticipated to change following construction of the project. In addition, the substation is currently maintained and operated by PG&E staff and these activities will not change as a result of the project. Because no new sources of continuous noise will be installed and the existing O&M activities will not change, there will be no impact.

3.9.4.4 Question 3.9b – Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction – Less-than-Significant Impact

Construction activities can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site

often varies depending on soil type, ground strata, and construction characteristics of the receiving buildings.

Table 3.9-3: Human Response to Transient Vibration indicates that vibration from construction activities would become distinctly perceptible at a level of 0.24 PPV. When compared to Figure 3.9-1: Construction Vibration Amplitudes, a PPV of 0.24 is generated at a distance of approximately 10 feet by typical construction activities. Table 3.9-2: Vibration Damage Threshold Guidance states that intermittent vibration sources with amplitudes greater than 0.5 PPV and 1.0 PPV have the potential to significantly affect older residential structures and newer residential structures, respectively. When compared to Figure 3.9-1: Construction Vibration Amplitudes, typical construction activities will generate less than 0.5 PPV at a distance of 10 feet. Because no residences are located within 10 feet of any of the proposed pole locations, the project will not generate significant groundborne vibrations. Therefore, impacts will be less than significant.

Operation and Maintenance – No Impact

Vibration and groundborne sources associated with O&M of the project will include vegetation-clearing activities and annual inspections and maintenance procedures to maintain service continuity. Because the project involves reinforcing existing facilities, the total length of power line within the project area will not change after construction. Both the Northern Alignment and Cox-Freedom Segment will be rebuilt within existing utility alignments; therefore, O&M activities required for the upgraded lines will change little from existing practices. In addition, none of the project facilities will generate vibration as a result of their operation. Thus, no impact due to vibration from O&M will occur.

3.9.4.5 Question 3.9c – Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction – No Impact

Construction activities will occur over a finite period; therefore, no permanent increase in noise will occur, and there will be no impact.

Operation and Maintenance – No Impact

As described previously in response to Question 3.9a, the additional 115 kV circuit will not cause a perceptible increase in corona hum and no new sources of continuous operational noise will be installed at Rob Roy Substation. In addition, the existing O&M activities will not increase in frequency or duration following construction. As a result, no permanent ambient noise increases will occur and there will be no impact.

3.9.4.6 Question 3.9d – Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction – Less-than-Significant Impact

Construction activities will require the temporary use of various types of noise-generating equipment, including graders, backhoes, augers, flatbed boom trucks, rigging and mechanic trucks, air compressors and generators, mobile cranes, concrete trucks, man lifts, and impact equipment. Wire stringing operations will require pullers, tensioners, and cable reel trailers. Helicopters will be used to remove and install poles, as well as to deliver materials to and from the right-of-way. Typical noise levels from construction equipment are listed in Table 3.9-7: Noise Levels Generated by Typical Construction Equipment.

The inventory of equipment that will be utilized during project construction was used to determine average 8-hour noise emissions (L_{eq}[day]), based on estimated average hours of operation per day and typical usage at maximum noise level. The total L_{eq}(day) was computed for each scheduled activity category for each crew (some activities may include up to three crews working simultaneously at different locations within the project area). Helicopters are assumed to operate at a height of approximately 50 feet when delivering equipment and materials, and when assisting with the installation and removal of poles and conductor, except for when landing and taking off.

Potential impact zones were developed by determining the distance from each construction activity where the USDOT guidelines were surpassed. These zones are summarized in Table 3.9-8: Potential Zones of Adverse Public Reaction. Potential impacts, by project component, are described in the subsections that follow.

Northern Alignment, Cox-Freedom Segment, and Rob Roy Connections

As shown in Table 3.9-8: Potential Zones of Adverse Public Reaction, any residences located within approximately 50 feet of pole work areas may be exposed to 8-hour average noise levels in excess of 80 dBA during pole installation and removal activities. In addition, any residences located within approximately 110 feet of pull sites along the Northern Alignment and Cox-Freedom Segment may be exposed to 8-hour average noise levels in excess of 80 dBA during pulling activities.

Because the existing line spans multiple residential locations, there are some residences located within these potential impact zones that may be temporarily exposed to noise levels in excess of 80 dBA. To reduce the noise exposure to residents located within these zones, PG&E will implement APMs NOI-01 through NOI-03. These APMs include locating construction equipment as far from sensitive receptors as possible, and maintaining all construction equipment in good condition. In addition, APM AIR-03 limits vehicle idling time to a maximum of 5 minutes for vehicles and construction equipment, except when idling is required for the equipment to perform its task.

Table 3.9-7: Noise Levels Generated by Typical Construction Equipment

Equipment	Noise Level Range at Approximately 50 Feet (dBA)
Earth-Moving	
Front loader	79 – 80
Backhoe	78 – 80
Tractor, dozer	82 – 85
Scraper, grader	84 – 85
Paver	77 – 85
Truck	74 – 84
Material-Handling	
Concrete mixer truck	79 – 85
Concrete pump	81 – 82
Crane (movable)	81– 85
Stationary	
Pump	77 – 81
Generator	70 – 82
Compressor	78 – 80
Impact	
Pneumatic tools	83 – 85
Jackhammers and rock drills	81 – 89
Compactors	80 – 83

Source: USDOT, 2006

Table 3.9-8: Potential Zones of Adverse Public Reaction

Project Activity	Distance to a Potential Adverse Public Reaction by Noise Receiving Land Use (feet)		
	Residential	**Commercial**	**Agricultural**
Northern Alignment			
Foundation Installation	40	< 25	< 25
Tubular Steel Pole Installation	50	30	< 25
Pole Removal	40	< 25	< 25
Pulling and Stringing	70	40	< 25
Cox-Freedom Segment and Rob Roy Connections			
Foundation Installation	40	< 25	< 25
Tubular Steel Pole Installation	50	30	< 25
Direct-Bury Installation	50	30	< 25
Pole Removal	40	< 25	< 25
Pulling and Stringing	100	60	30
Rob Roy Substation Modification			
Fence Removal/Construction	40	< 25	< 25
Rough Grading	60	30	< 25
Compaction	50	30	< 25
Foundation/Duct Bank Installation	40	< 25	< 25
Equipment Installation	40	< 25	< 25
Final Grading/Paving and Testing/Commissioning	40	< 25	< 25

PG&E will also implement APM NOI-04, which requires the placement of temporary noise barriers between sensitive noise receptors and stationary construction equipment during operation. Many residences, such as those located along Dalton Lane, have wood fences installed along their property lines. These fences may provide an additional 5 dBA of attenuation for noise sources near the ground such as generators and air compressors, further reducing noise exposure.

These construction activities will be dispersed across the entire alignment throughout the 3-month construction period. Because the project will be constructed in a linear fashion, construction crews will move along the alignment, staying at one pole work area for approximately 1 day at a time, then revisiting the same area later during the construction process. Stringing activities will be performed at each stringing site for approximately one week. Due to the relatively short-term nature of these exposures, and with the implementation of APM NOI-01 through NOI-04, impacts will be less than significant.

Rob Roy Substation Modification

As shown in Table 3.9-8: Potential Zones of Adverse Public Reaction, if residents were located within approximately 60 feet of rough grading activities, such residents might be temporarily exposed to 8-hour average noise levels in excess of 80 dBA. However, as the closest residence to the grading activities at Rob Roy Substation is located approximately 80 feet northeast of the substation expansion area, there will be no impact.

Helicopter Use

Helicopters will be used along the Northern Alignment to assist with the installation and removal of poles at approximately five locations. At these five locations, the residences located within approximately 180 feet of foundation installation and pole removal activities and approximately 280 feet of tubular steel pole installation activities may be exposed to 8-hour average noise levels in excess of 80 dBA. To perform this work, helicopters will be required to hover near the pole work area for approximately 15 minutes or less per day at a height of 50 feet. Helicopters will also be used to assist with the conductor stringing and pulling activities. In this capacity, the helicopters will spend limited time hovering at each pole.

To reduce the number of sensitive noise receptors that will be exposed to helicopter noise, PG&E will implement APM NOI-05, which restricts helicopter flight paths to a minimum elevation of 500 feet when not working at a pole work area or assisting with conductor stringing activities. Due to the short-term nature of these activities and the implementation of APMs, impacts will be less than significant.

Operation and Maintenance – No Impact

As described previously, construction of the project is not anticipated to change PG&E's existing O&M activities that are conducted in the area. Routine inspections and preventive maintenance will continue with approximately the same crew sizes and frequency. Therefore, no additional noise impacts will occur.

3.9.4.7 Question 3.9e – For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? – No Impact

The nearest airport to the project is the Watsonville Municipal Airport. The project is located within the boundaries of the Watsonville Municipal Airport Master Plan; however, the 60-dBA CNEL contours specified within the plan are projected to extend outward to just south of Pinto Lake, and are located outside the boundaries of the project area. Therefore, no impact will occur.

3.9.4.8 Question 3.9f – For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? – No Impact

The project site is not located within the vicinity of a private airstrip. The nearest private airstrip to the project area is the Monterey Bay Academy Airport, which is approximately 5.5 miles south of the project area. The project is not located within any noise contours associated with the Monterey Bay Academy Airport. Therefore, no impact will occur.

3.9.5 References

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.10 POPULATION AND HOUSING, PUBLIC SERVICES, AND UTILITIES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Population and Housing				
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?				✓
Public Services				
d) 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?				✓

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Parks?				✓
Other public facilities?				✓
Utilities and Service Systems				
e) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
f) 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?				✓
g) 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?				✓
h) Have sufficient water supplies available from existing entitlements and resources to serve the project from existing entitlements and resources, or are new and expanded entitlements needed?			✓	
i) 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?				✓
j) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
k) Comply with federal, state, and local statutes and regulations related to solid waste?				✓

3.10.1 Introduction

This section describes the existing population, housing, public services, and utilities resources in the vicinity of the project and evaluates potential impacts to these resources that may result from construction and operation and maintenance (O&M) of the project. This section also discusses the environmental and regulatory settings for the project area. The project is located entirely within unincorporated areas of Santa Cruz County (County), including the communities of Watsonville and Aptos. The region includes a mix of rural residential development, undeveloped natural habitats, and agricultural areas. Because service will not be extended into new areas as a result of the project, it will not have an impact on the local or regional population. In addition, no displacement of housing or people will result from the construction or O&M of the proposed facilities. As a result of this analysis, it was determined that the project will have no impact on population and housing and a less-than-significant impact on public services and utilities and service systems in the project area.

3.10.2 Methodology

Data used to conduct demographic and economic analyses were obtained primarily from statistical reports published by the United States (U.S.) Census Bureau and the California Department of Finance. Internet searches of government websites, including the County's website, were also conducted. Information regarding local public services was primarily gathered from internet searches of local planning agencies and County department websites. Data regarding fire, police, and emergency services were obtained from the County website and the individual websites of the local fire and police departments. Data pertaining to local area schools were obtained from various internet searches. Internet searches were also conducted to obtain information on hospitals and libraries. Landfill information was gathered from internet searches of local waste disposal facility websites and from the County Department of Public Works website.

3.10.3 Existing Conditions

3.10.3.1 Regulatory Background

Federal

Population and Housing

A search of the Code of Federal Regulations (CFR) and U.S Department of Housing and Urban Development information revealed no federal regulations or policies related to population and housing that are applicable to the project.

Public Services

A search of the CFR and the websites of the U.S. Department of Emergency Management Agency, U.S. Department of Health and Human Services, and U.S. Department of Education revealed no federal regulations or policies related to public services that are applicable to the project.

Utilities and Service Systems

Safe Drinking Water Act

Originally passed by Congress in 1974 and amended in 1986 and 1996, the Safe Drinking Water Act (SDWA) allows the U.S. Environmental Protection Agency (EPA) to establish drinking water standards and to oversee water supplies to ensure that they are in compliance with those standards. The standards apply to public and private water suppliers serving 25 or more individuals. The SDWA in intended to protect drinking water supplies from both naturally occurring and man-made contaminants.

Clean Water Act

The Clean Water Act (CWA) was enacted originally in 1948 and has been amended numerous times, with significant expansions of the act occurring in 1972 and 1977. The CWA's main objectives are to restore and maintain the chemical, physical, and biological integrity of waters through the authorization of water quality programs, regulation of discharges of pollutants, and establishment of water quality standards. Authority for the implementation and enforcement of the CWA lies primarily with the EPA and its delegated state and local agencies.

State

Population and Housing

A search of the California Code of Regulations (CCR) and the websites of the California Department of Housing and Community Development, California Department of Fair Employment and Housing, and California Employment Development Department revealed no state regulations or policies related to population and housing that are applicable to the project.

Public Services

Title 14 California Code of Regulations Sections 1250-1258 "Fire Prevention Standards for Electric Utilities"

These sections provide specific clearance standards to be maintained by utility companies between electric power lines and all vegetation.

California Public Utilities Commission General Order 95 Section 35 "Rules for Overhead Electric Line Construction"

This section of the rule covers all aspects of design construction, operation, and maintenance of electrical power lines as well as fire safety hazards.

Utilities and Service Systems

Department of Resources Recycling and Recovery

As a state agency, the Department of Resources Recycling and Recovery (CalRecycle) is under the umbrella of the California Environmental Protection Agency. CalRecycle is responsible for the oversight, management, and tracking of California's solid waste. The Integrated Waste Management Act of 1989 mandates that California's jurisdictions divert 50 percent of their solid waste from landfills.

State Water Resources Control Board Order 1999-08-DWQ

The State Water Resources Control Board (SWRCB) issues a General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) for projects disturbing 1 acre or more of land. This permit requires all existing dischargers and new dischargers to obtain coverage by submitting Permit Registration Documents, such as a Storm Water Pollution Prevention Plan (SWPPP). SWRCB regulations are further discussed in Section 3.8 Hydrology and Water Quality.

Local

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. This fact is recognized in the Land Use Element of the Santa Cruz County General Plan, which states the following:

- 2.21.4: No discretionary permit shall be required for a proposed land use which is subject to the jurisdiction of the California Public Utilities Commission or the California Energy Commission.

The following information regarding local regulations is provided for informational purposes and to assist with CEQA review.

Santa Cruz County General Plan

Housing Element

The Housing Element of the Santa Cruz County General Plan presents the County's housing needs and establishes policies for meeting those needs, which includes accommodating future residential development and limiting the amount of rural residential development. The Growth Management Program (Measure J) of the Housing Element, which has been codified as Chapter 17.01 of the Santa Cruz County Code, defines a growth management system and an affordable housing system for the County. Measure J includes policies to preserve agricultural land and prevent the division or other development of lands that contain timber resources, mineral resources, wildlife habitat, or other natural resources, except where such development is implemented in order to prevent the loss of or damage to such resources.

Public Safety and Noise Element

The Public Safety and Noise Element of the Santa Cruz County General Plan contains policies to protect human life, private property, and the environment from natural disasters, geologic hazards, and harmful noise sources.

Parks, Recreation, and Public Facilities Element

The Parks, Recreation, and Public Facilities Element of the Santa Cruz County General Plan provides the following policies and implementation programs regarding public services, utilities, and service systems:

- 7.26.2: Discourage new high-voltage overhead transmission line corridors that impinge upon the scenic quality of the County and may pose a health hazard. Consider placing existing transmission lines underground.

- 7.26.3: Encourage the use of utility rights-of-way for bikeways and hiking paths where appropriately located and where shown to be not hazardous to users.

Additional discussion of parks and recreation regulations can be found in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (Water Code §13000, et seq.) requires the SWRCB and the nine Regional Water Quality Control Boards (RWQCBs) to adopt water quality criteria to protect waters of the state. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Because the project is located within the jurisdiction of the Central Coast RWQCB, the criteria for the project area are contained within the Water Quality Control Plan for the Central Coast Basin (amended in 2009).

The Central Coast RWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources in the County. The individual water quality control plan prepared for the Central Coast RWQCB sets implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. National Pollutant Discharge

Elimination System permits, waste discharge requirements, and waivers are mechanisms used by the Central Coast RWQCB to control discharges and protect water quality.

3.10.3.2 Environmental Setting

Population

The project is located in the southern portion of the County. The U.S. Census Bureau estimated the County's population to be 255,602 in 2000 and 272,201 in 2010, which represents a growth of approximately 6.5 percent. The estimated population of the County accounted for approximately 0.1 percent of California's estimated total population of 38,648,090 in 2010. Cities within the County include Capitola, Santa Cruz, Scotts Valley, and Watsonville. Table 3.10-1: Project Area Population Totals and Trends provides the population totals for the County and the four cities within the County.

Table 3.10-1: Project Area Population Totals and Trends

County/City	2000	2010	Percent Increase
Santa Cruz County	255,602	272,201	6.5
Capitola	10,033	10,198	1.6
Santa Cruz	54,593	59,684	9.3
Scotts Valley	11,385	11,903	4.5
Watsonville	44,246	52,543	18.8
Unincorporated	15,088	3,545	-76.5

Source: State of California Department of Finance, 2010

The project spans an area roughly between an unincorporated area north of Watsonville and the unincorporated community of Aptos. Rob Roy Substation is located within the unincorporated community of Aptos. In addition, the project passes through the unincorporated communities of Amesti, Corralitos, Pleasant Valley, and Day Valley.

Housing

The County had an estimated 105,059 housing units and a vacancy rate of approximately 7.8 percent in 2010. The majority of housing units are detached single-family homes, which make up approximately 63 percent of all housing units in the County. Approximately 557 residences are located within 500 feet of the project.

Temporary Housing

In 2011, more than 70 hotels, motels, and bed and breakfast inns were featured on the Santa Cruz County Conference and Visitors Council website. The nearest temporary housing to the project area, Comfort Inn Watsonville Hotel (with 41 guest rooms), is located approximately 1.3 miles southwest of the intersection of Onyx Drive and Celia Drive.

Employment and Income

In 2011, approximately 131,800 County residents were employed and 16,900 were unemployed, resulting in an unemployment rate of 11.4 percent. Approximately 66 percent of County

residents are private wage or salary workers, approximately 14 percent are employed by the government, and approximately 13 percent are self-employed. Near the project area, in 2011, the median household income for Watsonville was $42,495 and the unemployment rate was 13.1 percent.

Public Services

Various public services are located within the vicinity of the project, including fire protection and emergency services, police protection services, hospitals, schools, and parks.

Fire and Emergency Services

Fire protection and emergency services for the project area are provided by the Santa Cruz County Fire Department and the Aptos/La Selva Fire Protection District. The County of Santa Cruz also contracts with the California Department of Forestry and Fire Protection (CAL FIRE) to provide fire protection services for the project area, including the supervision of volunteer fire companies, training and education, fire prevention services, plan check, and inspection.

The Santa Cruz County Fire Department is a combination paid and volunteer department that also provides basic life support emergency medical services. The Santa Cruz County Fire Department responds to emergencies within 15 minutes or less. The Santa Cruz County Fire Marshal's Office, which operates within the Santa Cruz County Fire Department, is responsible for the enforcement of fire-related state and local laws and ordinances. The headquarters are located at 6059 Highway 9 in the unincorporated community of Felton.

The Aptos/La Selva Fire Protection District's service area encompasses 17 square miles and has a resident population of approximately 22,000. The headquarters are located at 6934 Soquel Drive in the unincorporated community of Aptos. The district has three fire stations and provides emergency medical services as well as fire prevention, training, and support services. The Aptos/La Selva Fire Protection District's average response time is approximately 5 to 6 minutes.

The nearest fire stations to the project site consist of:

- Corralitos Fire Station in Corralitos, operated by the Santa Cruz County Fire Department, located approximately 0.5 mile east of the nearest pole
- Pajaro Valley Fire Station in Watsonville, operated by the Pajaro Valley Fire Protection District, located approximately 1.1 miles northeast of the nearest pole
- Rio Del Mar Fire Station, operated by the Aptos/La Selva Fire Protection District, located approximately 1.2 miles southwest of Rob Roy Substation

The Santa Cruz County Office of Emergency Services is responsible for emergency planning and preparation for the County. The Santa Cruz County Office of Emergency Services assesses major emergency threats, such as wildland fires, floods, earthquakes, tsunami, and civil disturbances, and coordinates with other emergency partners to allocate resources and obtain support services.

The Santa Cruz County Health Services Agency Emergency Medical Services Department also provides emergency medical services throughout the County. The Santa Cruz Consolidated

Emergency Communications Center within the Emergency Medical Services Department provides public safety and 911 dispatch services, such as fire response, helicopter transport, and hospital intake, for the County as well as for the cities of Santa Cruz, Watsonville, and Capitola.

Police and Protection Services

The Santa Cruz County Sherriff's Office provides a variety of law enforcement services for the County, including the project area. The Santa Cruz County Sheriff's Office's average response time for high priority calls is less than 9 minutes. The nearest service centers to the project area are the South County Service Center, located at 790 Green Valley Road in Watsonville (approximately 0.1 mile north of the nearest pole) and the Aptos Service Center, located at 19D Rancho Del Mar Shopping Center in Aptos (approximately 2.2 miles southwest of Rob Roy Substation).

The nearest city police department is the Watsonville Police Department, which serves the City of Watsonville and is located approximately 3 miles south of the project. In addition, the Capitola Police Department, which serves the City of Capitola, is located approximately 4.8 miles southwest of Rob Roy Substation. The Watsonville Police Department's average response time is under 4 minutes for high-priority calls. The Capitola Police Department's response time is generally under 4 minutes for high-priority calls.

Hospitals

The major hospitals serving the County include Dominican Hospital, at 1555 Soquel Drive in Santa Cruz, and Watsonville Community Hospital, at 75 Nielson Street in Watsonville. The nearest hospital to the project area is the Watsonville Community Hospital, which is located approximately 2.5 miles southwest of the project. Dominican Hospital in Santa Cruz is located approximately 6.8 miles west of the Cox-Freedom Segment. In addition, the Central Coast Surgery Center, an ambulatory surgical center, is located approximately 1.2 miles southwest of the project at 160 Green Valley Road in Freedom.

Schools

A total of 10 separate school districts are located within the County. The project area is located within the Pajaro Valley Unified School District, District 10. This district contains 16 elementary schools, 9 secondary schools, 7 charter schools, and 3 alternative education schools.

The nearest schools to the project area are Aptos High School and Bradley Elementary School, located approximately 0.15 mile southeast and 0.16 mile south of the project, respectively. Other schools in the project vicinity include Amesti Elementary School, located at 25 Amesti Road in Watsonville and Aptos Junior High School, located at 1001 Huntington Drive in Aptos. Amesti Elementary School is located approximately 0.5 mile southwest of the project and Aptos Junior High School is located approximately 0.8 mile southwest of Rob Roy Substation. Schools within the project vicinity are depicted on Figure 3.10-1: Existing Schools Map.

Parks

The southern boundary of the Forest of Nisene Marks State Park is located approximately 1.2 miles west of the Cox-Freedom Segment in Santa Cruz County. The Forest of Nisene Marks

State Park is managed by the California Department of Parks and Recreation and occupies approximately 10,000 acres of land northwest of the project area.

Several parks can be found near or within the project area: Pinto Lake County Park is crossed by several Northern Alignment poles and is located in Watsonville; Mesa Village Park is located approximately 0.1 mile away from the project at the intersection of Green Valley Road and Kato Lane in Watsonville; Scott County Park is located approximately 0.8 mile in Watsonville; Polo Grounds County Park is located approximately 0.8 mile west of Rob Roy Substation; and Valencia Hall Park is located at the intersection of Bean Hill Road and Valencia Road in Aptos, which is approximately 1 mile south of the project. Parks in the project vicinity are discussed further in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources.

Other Services

The Freedom Branch of the Watsonville Public Library is located at 2021 Freedom Boulevard in Freedom, approximately 1 mile south of the nearest pole in the Northern Alignment. The Corralitos Cultural Center, an art gallery and performing arts venue, is located approximately 0.4 mile northeast of the nearest pole in Corralitos.

Utilities

Various service providers supply utility services and facilities to the project area. These include water, drainage, electricity, cable, and telephone services, as well as waste disposal facilities.

Cable and Telephone

Comcast Cable Company provides cable television service in the project area. Telephone service is provided by AT&T.

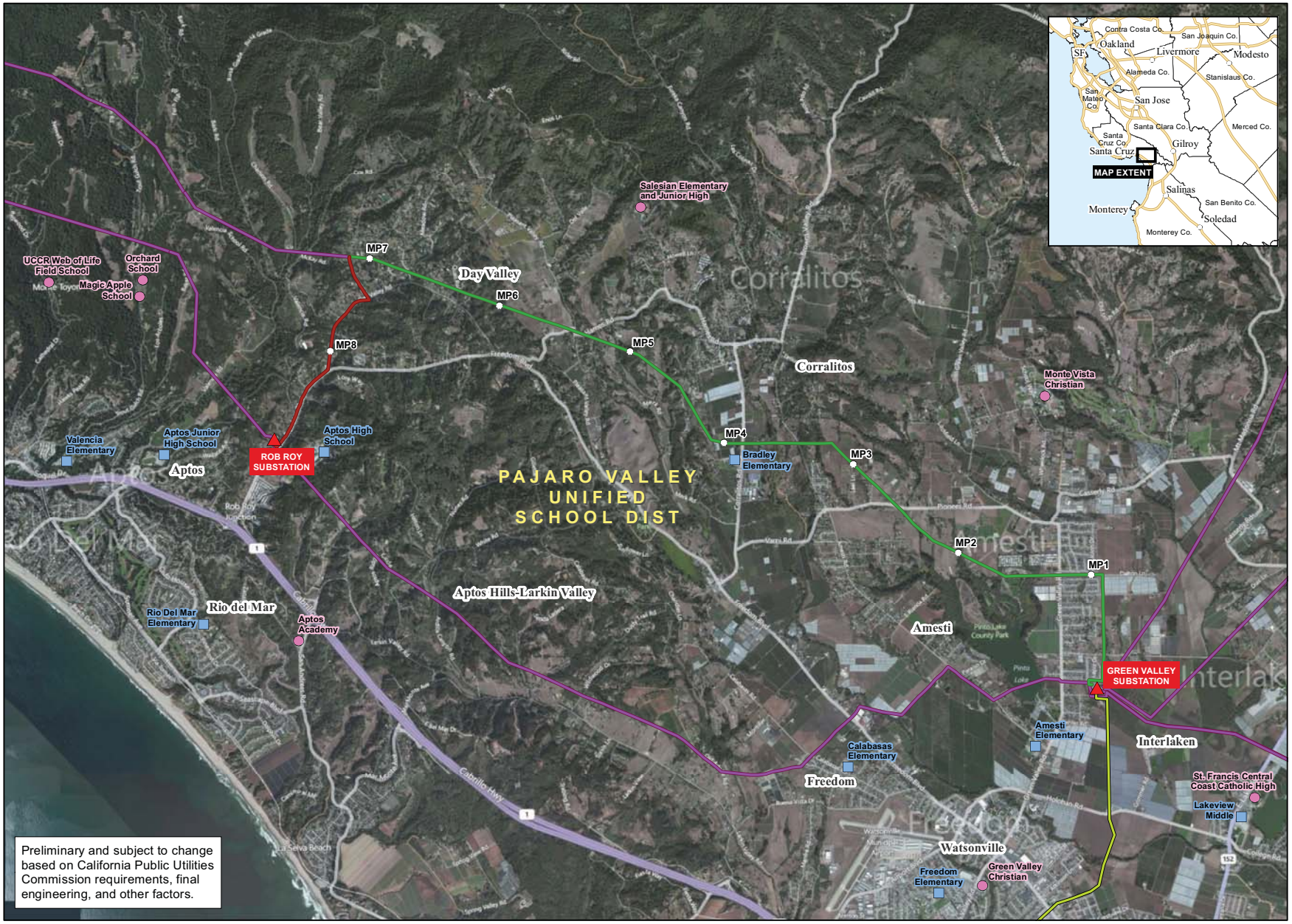
Electricity

PG&E provides electrical services to the County, which includes the project area.

Potable Water

Nearly all of the County’s domestic water supply is obtained from groundwater (80 percent), and the remainder is from local surface water (20 percent). The project area is located within the Pajaro Valley Groundwater Basin. Drinking water is provided in the County by multiple water systems. Some of the larger suppliers are the City of Watsonville Public Works and Utilities Department, City of Santa Cruz Municipal Utilities, and Soquel Creek Water District. Water in the project area is provided by the City of Santa Cruz Municipal Utilities.

Figure 3.10-1: Existing Schools Map



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 3.10-1
Existing Schools Map

- Existing Substation
- Cox-Freedom Segment
- Northern Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line
- MP1 Milepost
- Private School, K-12
- Public School, K-12

0 0.25 0.5 1 Mile

Scale 1:42,000
when printed on 11x17 paper

PG&E

lxlr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_schools.mxd

Storm Water Drainage Facilities

The Santa Cruz County Flood Control and Water Conservation District is responsible for ensuring adequate storm water drainage and flood control in the project area. In addition, the City of Watsonville Department of Public Works oversees flood protection and storm water management services within the city's boundary. The only storm water drainage system in the project area is an open system of roadside ditches and culverts along the eastern side of Freedom Boulevard, which is located approximately 75 feet across Freedom Boulevard from the intersection of McDonald Road and Freedom Boulevard to the intersection of Valencia Road and Freedom Boulevard. No municipal storm water drainage facilities are located in the project area.

Sewer

Wastewater treatment services in the County are supplied by various providers. The Santa Cruz County Sanitation District, Freedom County Sanitation District, and Davenport County Sanitation District operate and maintain the three major regional wastewater treatment and disposal facilities in the County, providing services to multiple cities and communities.

Solid Waste

Garbage and recycling collection is provided by Waste Management of the County. The County operates two solid waste disposal facilities: Buena Vista Landfill, located at 1231 Buena Vista Drive in Watsonville, and Ben Lomond Transfer Station, located at 9835 Newell Creek Road in Ben Lomond. Buena Vista Landfill is approximately 4.0 miles south of the Northern Alignment, and Ben Lomond Transfer Station is approximately 13.8 miles northwest of the nearest pole. Buena Vista Landfill accepts an average of 350 tons of refuse daily; Ben Lomond Transfer Station accepts 100 tons of refuse daily, which is then trucked to Monterey Peninsula Landfill in northern Monterey County. Both solid waste disposal facilities accept non-hazardous residential, commercial, and industrial waste. Buena Vista Landfill also accepts dewatered sewage and low-level petroleum-contaminated soils.

Buena Vista Landfill has a total estimated capacity of 7.5 million cubic yards. As of 2011, approximately 30 to 40 percent of the estimated capacity remains, and the landfill has an estimated remaining useful life of 20 years. Buena Vista Landfill is expected to provide capacity for solid waste until approximately 2031. Monterey Peninsula Landfill, which accepts the solid waste delivered to Ben Lomond Transfer Station, has an estimated capacity of 49.7 million cubic yards. As of 2011, Monterey Peninsula Landfill has an estimated remaining capacity of 150 years and is expected to be active until approximately 2161.

Both Buena Vista Landfill and Ben Lomond Transfer Station also function as recycling facilities. In addition, M2 Environmental at 5025 Freedom Boulevard in the unincorporated community of Aptos, Watsonville Metals Company at 213 Dias Lane in the City of Watsonville, and D&D Recycling at 710 B Walker Street in the City of Watsonville—located 0.5, 0.7, and 3 miles away, respectively—accept specific recyclables.

3.10.4 Potential Impacts and Applicant-Proposed Measures

3.10.4.1 Significance Criteria

Population and Housing

Determination of impacts was derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts to population and housing are considered potentially significant if they:

- Induce substantial population growth
- Displace a substantial number of housing units
- Displace a substantial number of people

Public Services

Impacts to public services are considered potentially significant if they result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives.

Utilities

Significant adverse impacts to public utilities and service systems would only occur if the project:

- Exceeds wastewater treatment requirements of the RWQCB
- Requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities
- Requires or results in the construction of new storm water drainage facilities or expansion of existing facilities
- Results in the need for a new or expanded water supply
- Results in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand
- Results in inadequate access to a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs
- Causes a breach of published national, state, or local standards relating to solid waste

In addition to the guidelines specified in Appendix G, the project would have significant adverse impacts to public utilities and service systems if it would result in the interruption of service from existing utility systems for an extended period of time.

3.10.4.2 Applicant-Proposed Measures

The following applicant-proposed measure (APM) will be implemented to reduce potential impacts to the provision of emergency services due to temporary road closures during construction activities. All impacts associated with population and housing, public services, and utilities and service systems will be less than significant; this APM will further reduce any potential impacts to public services.

APM PS-01. 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, including, but not limited to, the Santa Cruz County Fire Department, Aptos/La Selva Fire Protection District, Santa Cruz County Sheriff's Office, and Watsonville Police Department. 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.

3.10.4.3 Question 3.10a – Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction – No Impact

Project construction will be largely conducted within and along existing rights-of-way (ROWs). However, a few temporary roads will be constructed to provide access to limited areas of the Northern Alignment. However, temporary access roads will not be open to public use and will be returned to near-pre-construction condition following the completion of construction. Therefore, these temporary access roads will not induce indirect population growth by increasing access to new areas for development. In addition, no new housing is proposed as part of the project. During the peak construction periods, a maximum of 75 people are anticipated to be working on the project at any given time. The majority of project crew members will commute from the surrounding areas and are expected to primarily be local residents. Regardless, there is sufficient temporary housing available in the project area to accommodate temporary construction personnel, as needed.

Because construction will be temporary, lasting approximately 8 months, and the workforce will be relatively small, consisting primarily of local crew members commuting from the surrounding area, the project will not result in a permanent increase in population. Therefore, no permanent or long-term population growth in the area will occur due to construction of the project and there will be no impact.

Operation and Maintenance – No Impact

No new permanent roads will be constructed as part of the project; therefore, the project will not permanently open an area to development that was not previously accessible. In addition, no new housing is proposed as part of the project. Existing O&M activities are not anticipated to change significantly as a result of the project, and no additional personnel will be hired for O&M of the project. Therefore, no impact will occur.

3.10.4.4 Question 3.10b – Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Construction – No Impact

Project construction will be primarily conducted within existing power line corridors, using existing ROWs and access roads with limited expansion in some areas of the Northern Alignment and Cox-Freedom Segment. Residents dwelling in houses adjacent to the PG&E

ROW will not need to relocate, and their houses will not be displaced as a result of project construction. Therefore, no housing will be displaced as a result of project construction and there will be no impacts to existing housing in the project area.

Operation and Maintenance – No Impact

O&M of the project will continue to be conducted on PG&E-owned property and within the utility corridors established during construction, which do not contain any existing residences. Therefore, the project will not result in the displacement of or impacts to any existing housing.

3.10.4.5 Question 3.10c – Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Construction – No Impact

Project construction will not result in the displacement of people sufficient to necessitate the construction of replacement housing because construction will be conducted primarily within existing power and distribution line corridors, with limited expansion of Northern Alignment and Cox-Freedom Segment ROWs. As a result, no impact will occur.

Operation and Maintenance – No Impact

O&M activities will be conducted within the utility corridors established during project construction and within substation boundaries. Therefore, no permanent displacement of residents will occur as a result of project O&M activities and no impact will occur.

3.10.4.6 Question 3.10d – 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, or other public facilities?

Construction – Less-than-Significant Impact

Two emergency providers—Corralitos Fire Station and South County Service Center—are located within approximately 1 mile of project power lines and poles. No emergency providers are located within 1 mile of Rob Roy Substation. Project construction may briefly interfere with the emergency routes of fire protection, police, or other emergency service providers in the immediate area due to temporary road closures that may be required during the removal of the existing conductors or stringing of the new conductors. Roads may be closed for 10 to 15 minutes during the pull of each conductor, for a total of three closures at each crossing. The project alignment will cross roadways in approximately 24 areas. Traffic flow may also be disrupted during conductor stringing across local roadways, installation of crossing structures, or equipment and material deliveries to the ROW. Construction may affect response times due to the temporary road closures; however, as described in APM PS-01, PG&E will coordinate with emergency service providers prior to road closures in order to avoid or minimize possible potential impacts to response times.

The project will not result in an increase in the temporary demand for, or alter the required level of, local fire or police services. The project will not increase area population or demands for housing, as described in Question 3.10a. Emergencies could arise as a result of project construction; however, such incidents are unlikely to occur. As construction activities will only last for approximately 8 months, the project will not create an additional burden on existing emergency services beyond their current capabilities. Emergency service providers will not need to hire additional personnel to maintain acceptable service ratios and response times. As a result, impacts to fire and police protection services are anticipated to be less than significant.

Schools

Several schools located within 1 mile of the project may be temporarily affected by construction noise. Noise impacts are discussed in more detail in Section 3.9 Noise.

The project will not increase the temporary demand for school enrollment because it is not anticipated to increase the local population. Family relocation will not be necessary. Therefore, school enrollment will not be affected, and no new schools will need to be constructed as a result of the project. Therefore, no impact will occur.

Parks

Several parks can be found near or within the project area; however, the only recreational area that will be crossed by the project is Pinto Lake County Park. Aside from Pinto Lake County Park, the nearest park to the project area is Mesa Village Park, located approximately 0.1 mile north of the project. Where the project crosses Pinto Lake County Park or runs adjacent to Mesa Village Park, access to the area (or the park in general) will likely be temporarily restricted for the duration of the construction in that location. However, such closures will be temporary and short term, lasting for a total of approximately 1 to 2 days for line stringing and approximately 13 to 20 days for pole and foundation installation. Project construction will not significantly increase local population growth resulting in the need for new parks or park expansion. In addition, as construction for the project is expected to be relatively short-term, lasting approximately 8 months, and largely will involve the rebuilding and upgrading of existing utility infrastructure, no long-term reductions in the availability of recreational resources are anticipated. Construction activities will primarily occur within existing roadways and ROWs, the majority of which are located within existing roadways or road shoulders outside of neighborhood and regional parks. As the construction of new parks or expansion of existing parks will not be required in order to maintain acceptable service ratios, no impact will occur.

Other Public Facilities

Project activities will largely consist of the upgrading, rebuilding, and expansion of existing utility infrastructure, as well as the limited installation of new components at an existing substation within PG&E-owned property. While some activities will occur within 0.5 mile of existing public facilities, such as the South County Service Center, these activities will be temporary and short term in nature, lasting a maximum of 8 months during project construction. As previously discussed in Question 3.10a, a maximum of 75 people, primarily local crew members, are anticipated to be working on this project at any given time. The addition of temporary construction personnel to the project area will not result in the need for construction

or expansion of new public facilities in order to maintain service ratios. No new public facilities are anticipated to be required as a result of the project; therefore, no impact will occur.

Operation and Maintenance – No Impact

The project will not result in the need for additional government or public services, such as schools or parks, because the project will not induce population growth. Because no displacement of existing homes will occur, no new construction of homes will be required in the vicinity. No permanent impacts to governmental facilities or public services will occur.

3.10.4.7 Question 3.10e – Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Construction – No Impact

Portable restrooms will be provided and maintained by a licensed sanitation contractor for on-site use by construction workers. Portable restrooms will be provided in accordance with applicable sanitation regulations established by the Occupational Safety and Health Administration, which generally require one portable restroom for every 10 workers. The licensed contractor will dispose of the wastewater at a sewage treatment plant and in compliance with standards established by the RWQCB. Therefore, construction of the project will be in compliance with RWQCB wastewater treatment requirements, and no impact will occur.

Operation and Maintenance – No Impact

Once construction has been completed, O&M activities for the Northern Alignment, Cox-Freedom Segment, Rob Roy Substation Modification, and Rob Roy Substation Connections will be conducted in generally the same manner as for the existing facilities. Portable restrooms will not be used during O&M of the project. No additional sewage will be generated beyond what is currently required and no additional wastewater will require treatment. Therefore, O&M of the project will not exceed wastewater treatment requirements established by the RWQCB and no impact will occur.

3.10.4.8 Question 3.10f – 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?

Construction – No Impact

Water use during construction will be minimal. A limited amount of water, approximately 0.74 acre-feet (240,000 gallons), will be used for dust control during construction. Water will be obtained from the City of Santa Cruz Municipal Utilities or the City of Santa Cruz Neary Lagoon Treatment Plant. No new sources of point or nonpoint water pollution will result from construction. Portable restrooms will be used and maintained during construction and removed after completion of the project. No impact to local sewer systems will result from the project and no new or expanded water or wastewater treatment facilities will be required. Therefore, no impact will occur as a result of project construction.

Operation and Maintenance – No Impact

Project construction will not directly or indirectly result in new or expanded development. As a result, the project will not result in the need for any new water or wastewater treatment facilities and will not require the expansion of any existing facilities. Water is used during O&M activities to wash the insulators and conductors. A negligible amount of additional water will be needed to wash the new insulators and conductor; therefore, no significant amounts of additional wastewater will be generated beyond what is currently required. The small amount of additional wastewater generated would not require or result in the construction of new water or wastewater treatment facilities. As a result, there will be no impact as a result of O&M of the project.

3.10.4.9 Question 3.10g – Would the project 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?

Construction – No Impact

The only storm water drainage system in the project area consists of an open system of roadside ditches and culverts along the eastern side of Freedom Boulevard. No municipal storm water drainage facilities are located in the project area.

The modifications to Rob Roy Substation will require extending the existing fence line approximately 50 feet to allow for additional components, such as a permanent work area and drainage system to be installed. Approximately 0.1 acre of impervious surface will be added due to the installation of concrete foundations as part of substation modification. Rob Roy Substation is located approximately 75 feet west across Freedom Boulevard from the system of roadside ditches and culverts along the eastern side of Freedom Boulevard. The drainage system to be installed for Rob Roy Substation will be located within PG&E-owned property.

Approximately 79 new tubular steel poles will be installed throughout the entire project, with concrete foundations of 4 to 7 feet in diameter, resulting in the addition of approximately 0.02 acre (990 square feet) to 0.07 acre (3,040 square feet) of impervious surface to the project area. An additional approximately 31 wood, stub, and distribution poles will be installed as well, resulting in the addition of approximately 0.01 acre of impervious surface to the project area. However, approximately 91 existing poles will be removed as part of the project, resulting in a subtraction of approximately 0.02 acre of impervious surface. Therefore, the total amount of impervious surface added to the project area will total approximately 0.16 acre, which will not substantially increase surface runoff in the project area.

Increased runoff can also occur from the vegetation removal and/or soil compaction that may occur in temporary work areas and access roads. However, the areas where vegetation removal and/or minor grading may occur are widely scattered and total approximately 30 acres, thus having temporary and minimal effects on storm water runoff within a water basin. Because the addition of impervious surface and vegetation removal will be minimal, runoff from the project area is not expected to change substantially from pre-construction conditions. Consequently, there will be no need to construct or expand storm water drainage facilities as a result of the project.

PG&E will also obtain coverage under the California SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (General Permit). In order to obtain coverage under the permit, PG&E will develop and provide a SWPPP to the SWRCB prior to initiating construction activities, as described further in Section 3.8 Hydrology and Water Quality. In conjunction with the SWPPP, appropriate best management practices (BMPs), such as the installation of silt fencing and covering of spoil piles, will be developed to minimize impacts associated with storm water runoff. These BMPs will then be implemented and monitored throughout the project by a qualified SWPPP practitioner. As a result, there will be no impact.

Operation and Maintenance – No Impact

O&M of the project is not anticipated to generate additional impermeable surfaces or result in vegetation removal and/or soil compaction beyond what is currently required. Therefore, O&M activities will not significantly change drainage patterns in the area or contribute a significant amount of storm water runoff that would require the expansion or construction of new storm water drainage facilities. Therefore, no impact will occur.

3.10.4.10 Question 3.10h – Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Construction – Less-than-Significant Impact

Water is anticipated to be primarily used for dust control during construction. Approximately 0.74 acre-feet (240,000 gallons) of water will be required. The water will be obtained from Santa Cruz Municipal Utilities or the City of Santa Cruz Neary Lagoon Treatment Plant, and will not significantly impact existing water resources in the area. In addition, the amount of water needed for dust control will be temporary and spread out over the duration of project construction, which will last for approximately 8 months. As the water used for dust control will be absorbed into the ground, some of the water may also help to recharge the groundwater basin in the project area. Construction will utilize the existing water supply in the area and no new water supply will be needed. Additional discussion of water resources in the project area is included in Section 3.8 Hydrology and Water Quality. Impacts will be less than significant.

Operation and Maintenance – No Impact

As discussed previously in Question 3.10f, the additional amount of water needed to wash the new insulators and conductor during O&M of the project will be negligible. No additional water beyond that which is currently required for existing facilities will be needed during O&M activities. Therefore, there will be no impact to the water supply in the project area.

3.10.4.11 Question 3.10i – Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? – No Impact

As addressed under the responses to Questions 3.10e and 3.10f, construction and O&M of the project will generate a very minimal amount of wastewater. Because the amount of wastewater generated by the project will not have a significant effect on the amount of wastewater generated

in the project area, no impact will occur to the capacity of wastewater treatment providers that serve the project area.

3.10.4.12 Question 3.10j – Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Construction – Less-than-Significant Impact

Project construction is anticipated to generate waste materials such as packaging (e.g., wooden skids, cardboard boxes, plastic wrapping, trash from consumables), approximately 22.8 miles of conductor, and approximately 91 poles that will be removed as part of the project. The old poles will be removed and stored in PG&E's Watsonville Service Center before being disposed of at an approved hazardous waste facility. The old conductor will be recycled through PG&E's Material Department at the Fremont Distribution Center.

All solid waste generated will be collected at a designated location at the project site and temporarily stored in receptacles or otherwise covered until disposal occurs. Surplus material, equipment, and construction debris will be removed at the completion of construction activities. All man-made construction debris will be removed and recycled or disposed of at permitted landfill sites, as appropriate. All construction waste will be disposed of in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste disposal through transport to an authorized landfill.

The project is anticipated to generate less than 5 tons of waste per day, which is less than 1.5 percent of the refuse amount that Buena Vista Landfill accepts daily. As the landfill nearest to the project area has sufficient capacity to accommodate the amount of waste anticipated to be generated during construction, less-than-significant impacts will occur to landfill capacities.

Operation and Maintenance – No Impact

After power line rebuilding and substation modifications have been completed, the amount of waste generated by existing O&M activities is not anticipated to change from current levels. As current O&M activities generate a minimal amount of waste, existing landfill capacity levels will be sufficient for the continuation of project O&M activities. Therefore, there will be no additional permanent impacts to local landfill capacities as a result of the project.

3.10.4.13 Question 3.10k – Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Construction – No Impact

Project construction is not anticipated to generate a substantial amount of solid waste. As discussed previously in Question 3.10j, the small amount of solid waste produced during construction will be disposed of at a licensed landfill. During project construction, PG&E will dispose of all waste in accordance with published national, state, or local standards relating to solid and hazardous waste disposal through recycling or transport to an authorized landfill. Thus, the project will not violate any solid waste statutes or regulations and there will be no impact.

Operation and Maintenance – No Impact

PG&E currently adheres to and will continue to adhere to all national, state, and local standards for the disposal of solid waste during O&M of the line. Therefore, the project will not violate any solid waste statutes or regulations, and no impact will occur.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 3 – ENVIRONMENTAL IMPACT ASSESSMENT

3.11 TRANSPORTATION AND TRAFFIC

Would the project:	Potentially Significant Impact	Less than Significant 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?			✓	

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?			✓	

3.11.1 Introduction

This section describes the existing transportation and traffic conditions within the project area and evaluates potential project-related transportation and traffic impacts. Included in this section are a summary of existing roadways, bus and rail services, bicycle facilities, and airports; a discussion of the regulatory setting for transportation and traffic; and an analysis of transportation and traffic impacts that will result from the project. Although the project will span several public and private roadways, the impacts analysis concludes that the project will not have a significant impact on transportation and traffic in the area.

3.11.2 Methodology

Transportation and traffic data were obtained primarily through relevant literature review and internet research. The planning documents consulted include the Santa Cruz County General Plan, the Santa Cruz County Regional Transportation Plan (RTP), the Watsonville Municipal Airport Master Plan, and the Monterey Bay Area Metropolitan Transportation Plan (MTP). In addition, the Santa Cruz County Code was reviewed for policies and regulations relevant to the project.

3.11.3 Existing Conditions

3.11.3.1 Regulatory Background

Construction projects that cross public transportation corridors may be subject to local, state, and federal encroachment permits. Use or obstruction of navigable airspace also requires permits. Below is a summary of transportation and traffic regulations relevant to projects that involve the construction of electric facilities.

Federal

All airports and navigable airspace not administered by the Department of Defense are under the jurisdiction of the Federal Aviation Administration (FAA). Code of Federal Regulations (CFR) Title 14, Section 77 establishes the standards and required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height, or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long out to a horizontal distance of 20,000 feet, are considered

potential obstructions and require FAA notification. In addition, the FAA requires a Helicopter Lift Plan for the operation of a helicopter within 1,500 feet of residential dwellings.

State

The use of California state highways for other than normal transportation purposes may require written notification or an encroachment permit from the California Department of Transportation (Caltrans). Caltrans has jurisdiction over the state's highway system and is responsible for protecting the public and infrastructure. Caltrans reviews all requests from utility companies that plan to conduct activities within state highway rights-of-way (ROWs). Caltrans ministerial encroachment permits may include conditions or restrictions on the timeframe for construction activities performed within or above roadways that are under Caltrans jurisdiction.

Local

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 and zoning regulations. However, PG&E will obtain any required local non-discretionary permits. The discussion that follows discusses those requirements, and also provides further background information for purposes of CEQA review.

Santa Cruz County Code

Santa Cruz County Code Chapter 9.70 addresses the placement of any structures on, over, or under Santa Cruz County (County) roads. The County requires a ministerial encroachment permit for the erection or maintenance of any tower, post, sign, pole, pole line, fence, stand, building, guardrail, wall, loading platform, or other structure or object of any kind or character in, on, over, or under County road ROWs.

Although PG&E's structures are not subject to these zoning requirements, they are nevertheless consistent with the height limitations in the ordinance. Santa Cruz County Code Chapter 13.12 contains the Airport Height Limiting Zoning Ordinance based on the standards in CFR Title 14, Section 77. The code divides into zones, based on proximity, all lands within the boundaries of the Watsonville Municipal Airport and within certain areas adjacent to the landing area of the airport. Structures located within these zones are subject to height limitations. The boundaries of the zones are based on the Watsonville Municipal Airport Zoning Map, dated December 11, 1963.

Santa Cruz County General Plan

The Circulation Element of the Santa Cruz County General Plan provides guidance for achieving efficiency and economy in the transportation system and facilitating the planning required to maintain and expand the existing transportation network. According to the general plan, all projects will be designed to maintain a Level of Service[1] (LOS) of C or better, if feasible, with LOS D as the minimum acceptable level. Development projects that cause the LOS at an

[1] LOS is based on traffic congestion, which is measured by dividing traffic volume by roadway capacity. The resulting number, known as the V/C ratio, usually ranges from 0 to 1.0. The V/C rating is divided into six categories, A through F, representing conditions ranging from unrestricted traffic flow (A) to extreme traffic congestion (F).

intersection or uninterrupted highway segment to fall below D during weekday peak hours will be required to mitigate that traffic impact. For development projects that add traffic at intersections or on highway segments already at LOS E or F, mitigation will be required for any traffic volume that results in a 1-percent increase in the volume-to-capacity (V/C) ratio of the sum of all critical movements. Such projects will not be allowed to proceed until additional capacity is provided or an overriding finding of public necessity and/or benefit is shown.

Santa Cruz County Regional Transportation Plan

The Santa Cruz County RTP, approved in June 2010, serves as a blueprint for the County transportation system. The plan includes the following goals and policies:

- Maintain the current transportation system, emphasizing safety and efficiency.
- Increase mobility by providing an improved and integrated multi-modal transportation system.
- Coordinate land use and transportation decisions to ensure that the region's social, cultural, and economic vitality are sustained for current and future generations.
- Ensure that the transportation system complements and enhances the natural environment of the Monterey Bay Area region and reduces greenhouse gas emissions, making the most efficient use of limited transportation financial resources.
- Solicit board public input on all aspects of regional and local transportation plans, projects, and funding.

Watsonville Municipal Airport Master Plan

The Watsonville Municipal Airport Master Plan was created to facilitate expansion and development of the Watsonville Municipal Airport. The master plan, which covers the planning period of 2001 through 2020, includes an airspace protection plan, land use plans, and other required aviation plans and policies. The airspace protection plan (which includes an airport obstruction map) provides a basis for height zoning and identifies obstructions in the vicinity of the airport that may have an impact on the use of runways and adjacent airspace. The airspace protection plan and associated map were prepared using criteria contained in CFR Title 14, Section 77. Although PG&E's structures are not subject to these zoning requirements, they are nevertheless consistent with the height limitations in the ordinance.

Monterey Bay Area Metropolitan Transportation Plan

The Monterey Bay Area MTP, approved in June 2010, serves as a blueprint for the Monterey Bay Area transportation system. The plan's regional goals include:

- Support economic vitality of the Monterey Bay Area by enabling global competitiveness, productivity, and efficiency.
- Increase the accessibility and mobility of people and goods.

- Protect the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
- Enhance the modal integration and connectivity of the transportation system for people and goods.
- Promote efficient system management and operation.
- Preserve the existing system.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users.

3.11.3.2 Environmental Setting

This section discusses the current environmental setting of the project area with respect to transportation. Included in the discussion are the roadway network, railways, airports, bus service, and bicycle facilities in or near the project location.

Existing Roadway Network

Freeways

The major transportation corridors in the County include State Route (SR-)1, SR-9, SR-17, SR-35, SR-129, and SR-152. Construction crews, materials, and equipment will primarily access the project site and contractor storage yard via SR-1—either traveling along Green Valley Road, Airport Boulevard, or Freedom Boulevard. Table 3.11–1: Public Access Roadways lists the freeways and other roadways that will be used to access the project components, and includes road classifications and available traffic data.

Arterials, Collectors, and Local Roadways

The project spans an extensive network of roads. The County does not maintain traffic volume and LOS data for some of the roads in the project area, but available information is provided in Table 3.11–2: Public Roadways Spanned, along with approximate span location and road classifications. These public roadways are also depicted in Attachment 2-A: Detailed Route Maps in Chapter 2 – Project Description.

Access Roads

The project will primarily be accessed through the use of previously described roadways and existing unpaved and paved access roads, which vary in width from approximately 10 to 20 feet. Some new temporary access roads will be established to facilitate access from existing roads to the pole work sites. These access roads are depicted in Attachment 2-A: Detailed Route Maps in Chapter 2 – Project Description. Access roads requiring improvement will generally be 12 feet wide and graded level. No new permanent access roads will be established as part of the project. A summary of the access roads is provided in Table 2–3: Access Summary Table in Chapter 2 – Project Description.

Table 3.11–1: Public Access Roadways

Roadway	Classification	Number of Lanes	Average Daily Traffic Volume	LOS
SR-1	Freeway	4	72,500	C to F
SR-9	Minor Arterial	2	5,000	A to C
SR-17	Freeway	4	65,000	C to D
SR-35	Minor Arterial	2	720	N/A
SR-152	Minor Arterial	2	29,000	C to E
Railroad Avenue	Local	2	N/A	N/A
Lewis Road	Local	2	N/A	N/A
Main Street/County Road G12/Salinas Road	Urban Major Arterial	3	34,713	D
Airport Boulevard	Minor Arterial	4	13,887	E to F
Holohan Road	Minor Arterial	2	15,100	E
Green Valley Road	Minor Arterial	2	20,100	A
Celia Drive	Local	2	N/A	N/A
Onyx Drive	Local	2	N/A	N/A
Paulsen Road	Collector	2	1,737	N/A
Trembley Lane	Local	2	N/A	N/A
Melody Lane	Local	2	N/A	N/A
Dalton Lane	Local	2	N/A	N/A
Rancho Todos Santos Road	Select Local	2	N/A	N/A
Kiewer Lane	Local	2	N/A	N/A
Pioneer Road	Minor Arterial	2	N/A	A
Pioneer View Road	Local	2	N/A	N/A
Amesti Road	Collector	2	4,219	N/A
Crow Avenue	Local	2	N/A	N/A
Harrison Way	Local	2	N/A	N/A
Corralitos Road	Collector	2	6,284	N/A
Aldridge Road	Local	2	N/A	N/A
Skylark Lane	Local	2	N/A	N/A
Aldridge Lane	Local	2	N/A	N/A
Blake Avenue	Local	2	N/A	N/A

Roadway	Classification	Number of Lanes	Average Daily Traffic Volume	LOS
Blakeridge Lane	Local	2	N/A	N/A
Blakeview Road	Local	2	N/A	N/A
Hames Road	Collector	2	1,044	A
Pleasant Way Road	Local	2	N/A	N/A
Day Valley Road	Collector	2	N/A	N/A
Day Valley View	Local	2	N/A	N/A
Quail Run	Local	2	N/A	N/A
Jingle Lane	Local	2	N/A	N/A
Meadow Road	Local	2	N/A	N/A
Potter Road	Local	2	N/A	N/A
Pine Forest Drive	Local	2	N/A	N/A
Downing Drive	Local	2	N/A	N/A
Cox Road	Local	2	N/A	N/A
McDonald Road	Collector	2	2,563	N/A
Freedom Boulevard	Minor Arterial	2	26,860	D
Sakata Lane	Local	2	N/A	N/A

Sources: Caltrans, 2011; Santa Cruz Regional Transportation Commission, 2011; Santa Cruz County, 2009; Monterey County, 2010
N/A = information not available

Table 3.11–2: Public Roadways Spanned

Roadway	Classification	Number of Lanes	Average Daily Traffic Volume	LOS
Paulsen Road	Collector	2	1,737	N/A
Melody Lane	Local	2	N/A	N/A
Dalton Lane	Local	2	N/A	N/A
Green Valley Road	Minor Arterial	2	20,100	A
Rancho Todos Santos Road	Select Local	2	N/A	N/A
Pioneer Road	Minor Arterial	2	N/A	A
Pioneer View Road	Local	2	N/A	N/A
Amesti Road	Collector	2	4,219	N/A
Corralitos Road	Collector	2	6,284	N/A
Skylark Lane	Local	2	N/A	N/A
Hames Hollow	Local	2	N/A	N/A
Hames Road	Collector	2	1,044	A
Pleasant Valley Road	Collector	2	N/A	N/A
Hames Road	Collector	2	1,044	N/A
Day Valley View	Local	2	N/A	N/A
Quail Run	Local	2	N/A	N/A
Jingle Lane	Local	2	N/A	N/A
Potter Road	Local	2	N/A	N/A
Meadow Road	Local	2	N/A	N/A
Pine Forest Drive	Local	2	N/A	N/A
Downing Drive	Local	2	N/A	N/A
Cox Road	Local	2	N/A	N/A
Day Valley Road	Collector	2	N/A	N/A
McDonald Road	Collector	2	2,563	N/A

Source: Santa Cruz Regional Transportation Commission, 2011
N/A = information not available

Public and Alternative Transportation

Bus

Public transportation within the County is provided by the Santa Cruz Metropolitan Transit District (METRO). In addition, the "Highway 17 Express" (jointly operated by METRO and the Santa Clara Valley Transportation Authority) provides bus service between Santa Cruz and San Jose, and Greyhound Lines provides bus service to the surrounding regions.

The METRO operates four separate bus routes in the vicinity of the project. Of the four bus routes, two—Route 72 - Corralitos and Route 75 - Green Valley—are spanned by the Northern Alignment:

- Route 72 - Corralitos provides bus service from Watsonville to Freedom, Amesti, and Corralitos 5 days a week (Monday through Friday) from 5:40 a.m. to 7:38 p.m. This route runs along Main Street, Green Valley Road, Freedom Boulevard, Airport Boulevard, Amesti Road, Varni Road, Corralitos Road, and Pioneer Road, and has 14 round-trip loops scheduled per weekday.

- Route 75 - Green Valley provides bus service from Watsonville to Freedom and Amesti 7 days a week from 6:09 a.m. to 9:02 p.m. This route runs along Main Street, Green Valley Road, Loma Prieta Avenue, Airport Boulevard, Freedom Boulevard, Arroyo Drive, Mark Avenue, Mesa Verde Drive, Casserly Road, and Wheelock Road; it has 15 round-trip loops scheduled per weekday and 14 round-trips scheduled per weekend day.

Table 3.11–2: Public Roadways Spanned lists the approximate locations at which the Northern Alignment spans these two bus routes.

Bicycle Facilities

The project spans two bikeways—a paved path that parallels Green Valley Road and is spanned once by the Northern Alignment, and a paved bike lane that parallels Corralitos Road and is also spanned once by the Northern Alignment. In addition, the project parallels a paved bike lane on Freedom Boulevard.

Railway

Rail service in the vicinity of the project includes the Santa Cruz Branch Line, the Felton Branch Rail Line, the railroad within Roaring Camp in Felton, and the Coastal Rail Route. The nearest railway to the project site is the Santa Cruz Branch Line of the Union Pacific Coast Line. The Santa Cruz Branch Line runs approximately 32 miles from Watsonville Junction in Pajaro along the coast to Davenport. Historically, freight deliveries occurred along this line three times a week, to the CEMEX cement plant in Davenport; however, since the CEMEX plant closed in January 2010, freight car use of the rail line has been reduced by approximately 90 percent. The remaining shippers make two freight trips a week, mostly in the Watsonville area. The Regional Transportation Commission is pursuing acquisition of the rail line for future transportation uses and an adjacent bicycle/pedestrian path. The rail line is situated approximately 1.6 miles southwest of the project.

Airports

Airports within the County include the public Watsonville Municipal Airport and the private Monterey Bay Academy Airport. Civil aviation helipads are located at Watsonville Community Hospital, at Dominican Hospital, and one location on SR-17.

The Watsonville Municipal Airport, the nearest airport to the project site, is located approximately 1.7 miles southwest of the project. The Watsonville Municipal Airport contains two runways, one approximately 4,500 feet long and the other approximately 4,000 feet long. The Monterey Bay Academy Airport is located approximately 5.5 miles south of the project. The Monterey Bay Academy Airport contains one approximately 2,200-foot-long runway. The Watsonville Community Hospital helipad is the closest helipad to the project. It is located approximately 2.4 miles southwest of project.

3.11.4 Potential Impacts and Applicant-Proposed Measures

3.11.4.1 Significance Criteria

According to Appendix G of the California Environmental Quality Act Guidelines, the project will have a significant impact if it:

- Conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system
- Results in the exceedance of an established LOS standard
- Causes a change in air traffic patterns
- Results in a substantial increase in hazards due to design feature or incompatible use
- Results in inadequate emergency access
- Conflicts with adopted policies, plans, or programs supporting alternative transportation

3.11.4.2 Applicant-Proposed Measures

The following applicant-proposed measures (APMs) will be implemented to reduce potential impacts to traffic flow due to addition of vehicles during construction activities. These APMs will ensure that impacts associated with transportation and traffic will be reduced to a less-than-significant level.

APM TRA-01. Install Reflective Bollards.

Reflective bollards will be installed around the base of TSP foundations to increase vehicle safety along Dalton Lane and at the corner of McDonald Road and Freedom Boulevard.

APM TRA-02. Coordinate Work Within Vicinity of Bus Stop with Bus Service Providers.

At least 2 weeks prior to work within 1,000 feet of any METRO bus stop, PG&E will coordinate with the METRO to inform them of the project's potential to impact the bus stop. PG&E will provide the METRO with information regarding the location of the bus stop; the anticipated date, time, and duration of construction activities; and a telephone contact number.

3.11.4.3 Question 3.11a – 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, pedestrians and bicycle paths, and mass transit?

Construction – Less-than-Significant Impact

Project-related truck traffic will be limited to the transport of supplies to and from construction areas along the power line corridor and Rob Roy Substation. The number of truck trips is estimated to range from 12 to 75 trips per day, with an average of approximately 35 trips per day. Personnel will generally drive to the worksite at the beginning of the day and leave at the end of the day, with fewer people traveling to and from the worksite throughout the day. As described in Chapter 2 – Project Description, the number of construction personnel will range from approximately 12 to 70. This will result in a maximum of approximately 140 personal vehicle trips per day to and from the project site during peak construction times. It is expected that the number of daily vehicle trips to the project area (including trucks and personal vehicles) will reach a maximum of approximately 215 during peak construction periods and will average 175 during off-peak construction periods. However, as described in APM AIR-04 of Section 3.3 Air Quality and Greenhouse Gas Emissions, construction workers will be encouraged to carpool to the job site, to the extent feasible. Work crews will generally assemble their personal vehicles at designated locations, such as park-and-ride facilities or substations, and will proceed to the worksite in crew trucks.

Green Valley Road, Airport Boulevard, and Freedom Boulevard, the primary public roads that will be used to access the project area during construction, will each experience a less-than-2-percent increase in average daily traffic volume during peak and average construction periods. These roads will each experience a less than 2-percent increase in average daily traffic volume during peak and average construction periods. Traffic increases will be spread over the entire approximately 8.8-mile-long project alignment. In addition, because peak construction periods are expected to last only about 5 weeks (out of the approximately 8-month duration of construction), increases in average daily traffic volumes are expected to be less than significant.

Traffic flow may be temporarily disrupted when it is necessary to conduct work from road shoulders—in particular on Freedom Boulevard, Cox Road, Dalton Lane, Day Valley Road, and McDonald Road, where poles are located adjacent to the roadways. Partial or complete lane closures may occur through the use of cones and flaggers, which could reduce speeds along roadways and cause slight increases in road congestion. Roadways or lanes may be closed for 10 to 15 minutes during the installation of crossing structures prior to pull of each conductor, for a total of three closures at each crossing. Crossing structure installation will generally be conducted during low-volume traffic times to the extent practicable, with the potential for weekend work on occasion, as necessary. In addition, shoulder work will be short-term and limited in duration, lasting a total of approximately 2 to 3 weeks for each roadway. During this time, work along the roadway will be staggered according to pole locations, and limited segments of the road will be closed at a time. Cox Road East near the intersection of Cox Road and Leslie Lane will be closed during various phases of the installation of the pole located approximately 200 feet south of the intersection of Cox Road and Leslie Lane for up to 2 hours

at a time. However, alternate access to Cox Road East will remain available through Cox Road West.

PG&E will obtain a County encroachment permit and conduct temporary or partial lane closures in accordance with encroachment regulations. PG&E will perform work according to encroachment permit requirements, which include protection of traffic through warning signs, lights, and barricades; minimum interference with traffic; and cleanup of the ROW upon completion of work. Because these closures will be isolated, temporary, short in duration, and coordinated with local regulatory agencies through the permitting process, the project will not significantly disrupt traffic. Therefore, conflicts with traffic plans and policies will be less than significant.

Operation and Maintenance – No Impact

Operation and maintenance (O&M) of project facilities will not result in increases in traffic flows to the project area. The rebuilt Northern Alignment, Cox-Freedom Segment, Rob Roy Substation Modification, and Rob Roy Substation Connections will be operated in the same manner as the existing facilities. PG&E does not anticipate additional trips for O&M of the project beyond those currently required for existing facilities. Therefore, O&M of the project will not result in any new conflicts with applicable traffic plans, policies, or ordinances, and no impact will occur.

3.11.4.4 Question 3.11b – 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?

Construction – Less-than-Significant Impact

Existing LOS standards for roads in the project area generally range from LOS A to D (indicating generally free flowing traffic, with some areas of unstable flow with reduced vehicle speeds); therefore, the existing roadway network in the project area generally has adequate capacity to handle the increase in traffic volume due to construction. Construction crews, materials, and equipment will primarily access the project site and contractor storage yard from SR-1, either traveling along Green Valley Road, Airport Boulevard, or Freedom Boulevard. Green Valley Road is designated LOS A, which describes free-flow operations with complete traffic mobility between lanes. Airport Boulevard is designated LOS E to F, which describes operations nearing roadway capacity. Freedom Boulevard, the primary road used to access the western portion of the project site, is designated LOS D, which indicates that traffic speeds may slightly decrease with slight increases in traffic volume.

An increase of a maximum of 215 vehicle and truck trips during peak construction will result in a less-than-1-percent increase in average daily traffic volume on Freedom Boulevard, which will not conflict with the LOS standard set for this roadway. Airport Boulevard and Green Valley Road are the primary roads that will be used to access the eastern portion of the project site. Assuming that traffic will be evenly dispersed among these two roads during peak construction periods, an increase of approximately 108 vehicle and truck trips on each road will result in a less than 1-percent increase in daily traffic volume for both Airport Boulevard and Green Valley Road, which will not significantly conflict with the LOS standards for these roadways. In

addition, traffic volume increases will be spread out over the entire project alignment and over the approximately 8-month-long construction period; therefore, increases will not significantly affect the established LOS standards for roadways used to access the project area. As described in APM AIR-04 of Section 3.3 Air Quality and Greenhouse Gas Emissions, construction workers will be encouraged to carpool to the job site, to the extent feasible. As a result, while construction of the project may add slightly to daily traffic congestion, this temporary increase is not expected to result in significant changes to the current LOS in the project vicinity.

As previously described, traffic flow on Freedom Boulevard, Cox Road, Dalton Lane, and McDonald Road may also be disrupted due to temporary road closures that may occur during the installation of crossing structures prior to conductor pulling activities. However, closures will be short-term and limited in duration, conducted during the normal work day, with the potential for weekend work on occasion, as necessary. After crossing structures have been installed, roads will be re-opened and will remain open during conductor pulling. In addition, Cox Road East near the intersection of Cox Road and Leslie Lane will be closed during various phases of the installation of the pole located approximately 200 feet south of the intersection of Cox Road and Leslie Lane for up to 2 hours at a time. However, alternate access to Cox Road East will remain available through Cox Road West. As closures will be temporary, limited in duration, and conducted during low-volume traffic times to the extent practicable, changes in the existing LOS standards for these roadways will not occur.

No new permanent roads will be constructed as part of the project. Existing paved and unpaved roads along portions of the route will be used, along with temporary access roads for portions of the Northern Alignment; these temporary roads will not be for public use. Project-related traffic may result in a slight increase in the existing daily traffic and/or road congestion due to lane closures, but will not change the established LOS in and around the project area. In addition, this slight increase in traffic and/or road congestion will be temporary (dispersed over the approximately 8.8-mile-long project) and short-term (lasting approximately 8 months). Therefore, construction of the project will not result in a substantial change to LOS standards in the project area, and impacts will be less than significant.

Operation and Maintenance – No Impact

As described previously, PG&E does not anticipate that additional trips will be necessary for O&M of the upgraded facilities, beyond those currently required for existing facilities. In addition, O&M activities may decrease as a result of the project due to the lower maintenance requirements of the tubular steel poles that will replace existing wood power poles along the Northern Alignment, portions of the Cox-Freedom Segment, and the Rob Roy Substation Connections. As a result, there will be no impact to the existing LOS due to O&M of the project.

3.11.4.5 Question 3.11c – 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?

Construction – Less-than-Significant Impact

Watsonville Municipal Airport, located approximately 1.7 miles southwest of project, is the nearest airport. However, no portion of the project is located within the horizontal, conical, or any other protection surface specified in the Watsonville Municipal Airport Airspace Protection

Plan. Therefore, the project is not subject to the use limitations and regulations contained within that plan even if local authority was not pre-empted by the California Public Utilities Commission.

CFR Title 14, Part 77 states that FAA notification is necessary for construction projects greater than 200 feet in height or those located within 20,000 feet of a public use airport that exceeds a 100-to-1 surface ratio from any point on the runway with its longest runway more than 3,200 feet. The portion of the project from approximately 400 feet south of the intersection of Onyx Drive and Celia Drive to approximately 1,650 feet southwest of the intersection of Hames Hollow and Hames Road is located within 20,000 feet of Watsonville Municipal Airport. However, as the height of the tallest pole installed for the project is 100 feet, no point of the project will exceed a 100-to-1 surface ratio and FAA notification will not be necessary. Therefore, the project will not obstruct navigable airspace.

While the majority of construction activities will be conducted from the ground, helicopters may be used to assist with the installation and removal of poles and conductors in instances where terrain prohibits equipment access or when the use of a bucket truck, crane, and/or aerial man-lift is not feasible. Helicopters will be staged and refueled at two established staging areas/landing zones, which are depicted in Attachment 2-A: Detailed Route Maps in Chapter 2 – Project Description. It will not be necessary to use the Watsonville Municipal Airport facilities or runways. In addition, PG&E's helicopter contactor will coordinate flight patterns with local air traffic control and the FAA prior to construction. In certain areas of the Northern Alignment, helicopters may be used within 1,500 feet of residences in order to assist in pole and conductor installation activities. However, the helicopter operator will prepare a Helicopter Lift Plan, which is required by CFR Title 14 and the FAA for helicopter operations within 1,500 feet of residential dwellings.

While the use of helicopters may temporarily increase air traffic during construction, the helicopter operator will coordinate this traffic with the applicable agencies; therefore, impacts will be less than significant.

Operation and Maintenance – No Impact

The project's O&M activities may require the periodic use of a helicopter for power line inspection, which PG&E already implements for its existing facilities in the area. PG&E currently performs aerial line inspections once a year, and does not anticipate an increase in the number of trips currently required for O&M of the existing facilities. Because there will be no change in the helicopter activities after construction, there will be no impact to air traffic as a result of O&M of the project.

3.11.4.6 Question 3.11d – 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)?

Construction – Less-than-Significant Impact

As described previously, paved public roads and a network of existing paved and unpaved access roads will be used to access the project during construction. Existing unpaved roads may be improved, if necessary, by grading, mowing, and/or placing of aggregate base to allow for better

access to the site. Temporary access roads may be constructed to allow access to certain portions of the Northern Alignment; however, these access roads will be restricted to construction personnel. Temporary access roads will also be designed to allow safe ingress and egress from any public roadways and to accommodate large construction equipment safely. No permanent roads will be constructed as part of the project.

Construction of the project will not necessitate any permanent modifications to existing public roadways. As previously discussed, temporary road or lane closures may be required to ensure safety to the public and workers during certain activities, particularly during work on road shoulders. Road closures and encroachment into public roadways could increase hazards if appropriate safety measures—such as proper signage, orange cones, and flaggers—are not in place. An increase in hazards could also result from an increase in vehicular traffic at the intersections of temporary access roads and public roadways. However, impacts will be minimized through the implementation of requirements contained in the project's encroachment permit. In addition, use of project-specific access roads will be limited to project personnel and traffic controls will be implemented during road closures; thus, hazards to the public will be minimized.

The replacement of wood poles with tubular steel poles could result in an increase in road hazards in areas where poles are located adjacent to roadways such as Freedom Boulevard, Cox Road, Dalton Lane, and McDonald Road. However, PG&E will install the new tubular steel poles in accordance with appropriate setback requirements in order to minimize roadway hazards. In addition, due to the agricultural truck traffic that occurs along Dalton Lane and vehicle traffic along Freedom Boulevard, reflective bollards will be installed at the base of the TSP foundations to increase vehicle safety, as described in APM TRA-01. As a result, impacts will be less than significant.

Operation and Maintenance – No Impact

O&M activities will not change from their existing practices and access will be provided by PG&E's existing ROW or access roads or from public roadways. As a result, no additional hazards will be created and no impact will occur.

3.11.4.7 Question 3.11e – Would the project result in inadequate emergency access?

Construction – Less-than-Significant Impact

Increased vehicle traffic and brief closures (approximately 10 to 15 minutes in duration) may occur during the installation and removal of crossing structures prior to conductor pulling activities. Although closures could indirectly impact emergency access response times, the increase in traffic will be less than significant—less than 1 percent on Green Valley Road and Freedom Boulevard during peak and average construction periods. In addition, Cox Road East near the intersection of Cox Road and Leslie Lane will be closed during various phases of the installation of the pole located approximately 200 feet south of the intersection of Cox Road and Leslie Lane for up to 2 hours at a time. However, alternate access to Cox Road East will remain available through Cox Road West. As described in APM PS-01 of Section 3.10 Population and Housing, Public Services, and Utilities, to avoid potential impacts to response times, PG&E will

coordinate with emergency providers prior to implementing closures. Thus, impacts will be less than significant.

Operation and Maintenance – No Impact

As discussed previously, O&M of the project will not change from the procedures currently in place. Emergency vehicle access in the project area will continue to be allowed at all times. Therefore, no impact to emergency vehicle access will occur from O&M activities.

3.11.4.8 Question 3.11f – 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?

Construction – Less-than-Significant Impact

Construction will generally occur within existing transmission line easements and will not involve any activities that conflict with transportation policies, plans, or programs, including bus transportation in the area.

Two bus routes—Route 72 - Corralitos and Route 75 - Green Valley—are spanned by the Northern Alignment. Route 72 may be temporarily delayed due to traffic congestion when work is being conducted near the pole located approximately 550 feet north of the intersection of Corralitos Road and Skylark Lane, as the pole is located adjacent to Corralitos Road and work on the pole will likely be conducted from the road shoulder. Temporary delays may also occur along Route 72 on Pioneer Road as work is being conducted near the pole located approximately 1,000 feet east of the intersection of Pioneer View Road and Pioneer Road. Additionally, delays may occur along Route 72 and Route 75 as work is being conducted near the pole located approximately 150 feet south of the intersection of Green Valley Road and Rancho Todos Santo Road. A Route 72 and Route 75 bus stop near the intersection of Green Valley Road and Dalton Lane may be temporarily impacted for approximately 4 hours during the installation of a crossing structure for the pole located approximately 150 feet south of the intersection of Green Valley Road and Rancho Todos Santo Road. However, potential impacts will be temporary and short-term and will be conducted during off-peak hours to the extent practical. In addition, PG&E will implement APM TRA-02, which includes coordination with the METRO, which operates Route 72 and Route 75. PG&E will provide the METRO with information regarding the location of the potentially affected bus stop; the anticipated date, time, and duration of construction activities; and a telephone contact number. Therefore, impacts associated with bus stop closures will be less than significant.

Two bikeways are spanned by the Northern Alignment. Crossing structures, or brief closures using flaggers, may be required in portions of these bike paths during construction, particularly when work is being conducted from road shoulders. These temporary closures will be short-term and isolated, lasting approximately 10 to 15 minutes each. In addition, it is expected that construction along these portions of the project will only last 2 to 3 weeks. Where feasible, activities involving temporary closures, such as conductor pulling, will be conducted during off-peak hours to the extent practicable, with the potential for weekend work as necessary, to further reduce impacts. Therefore, impacts will be less than significant.

Operation and Maintenance – No Impact

As described previously, O&M of the project will continue to be conducted within the PG&E substation fence line and power line ROWs. O&M requirements are not anticipated to change as a result of constructing the project. Therefore, there will be no impact to alternative transportation during O&M activities.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 4 – CUMULATIVE AND GROWTH-INDUCING ANALYSIS

4.0 INTRODUCTION

This chapter discusses the cumulative and growth-inducing impacts related to the project. The California Environmental Quality Act (CEQA) requires a discussion of cumulative impacts of a project. Cumulative impacts refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. CEQA also requires a discussion of the ways in which a project could foster economic or population growth, either directly or indirectly, in the surrounding environment, including projects that remove barriers to population growth. The following cumulative analysis evaluates the potential cumulative impacts from the Santa Cruz 115 Kilovolt (kV) Reinforcement Project in combination with other planned and proposed projects in the area. The subsequent growth-inducing analysis discusses potential growth-inducing impacts from the project.

Based on the cumulative and growth-inducing analyses, the project will not result in significant cumulative impacts in any of the resources evaluated, and will not result in any growth-inducing impacts.

4.1 CUMULATIVE ANALYSIS

This section discusses the potential cumulative impacts from the construction and operation and maintenance (O&M) of the project. As described in detail in Chapter 3 – Environmental Impact Assessment, impacts from the project will be less than significant. In addition, implementation of this project will not contribute to any significant cumulative environmental impacts in any of the resource areas evaluated.

4.1.1 Significance Criteria

CEQA defines cumulative impacts as changes in the physical environment resulting from the incremental impact of the project when added to other closely related past, present, and future projects. Impacts will be considered significant if they exceed the individual criterion established for each resource area as described in Sections 3.1 through 3.11.

4.1.2 Timeframe of Analysis

For the purpose of this cumulative analysis, the project is defined in terms of construction duration, post-construction restoration, and O&M. PG&E anticipates that construction of the project will take approximately 8 months during a 1-year construction period. Site development and preparation for all project components is preliminarily scheduled to begin in April 2013, after which each of the components will be constructed concurrently. Under this preliminary schedule, the new line will be operational in December 2013. Post-construction restoration will occur as needed after localized project construction is completed, and mitigation monitoring and maintenance of restored areas will not change as a result of this project.

4.1.3 Area of Analysis

The analysis of potential cumulative impacts was limited to projects within an approximately 2-mile-wide corridor centered on the existing 7.1-mile-long Northern Alignment and 1.7-mile-long Cox-Freedom Segment (i.e., 1 mile on each side of the power line alignments). The buffer represents the physical extent of the limits in which permanent impacts of the project could occur. It is anticipated that potential cumulative impacts will not occur in conjunction with other projects beyond this distance.

4.1.4 Methodology

Existing conditions were determined by conducting site visits and reviewing aerial photographs and planning documents. Reasonably foreseeable projects were identified via searches of county, city, California Department of Transportation (Caltrans), and water agency websites. In addition, local agency staff from Santa Cruz County were contacted and available environmental documents were reviewed to obtain specific details about planned and proposed projects. Only reasonably foreseeable projects that will involve new disturbance equal to or greater than 1 acre were evaluated, as smaller projects are unlikely to contribute to significant impacts, even if constructed within the same timeframe as the PG&E project. For the purposes of this document, "reasonably foreseeable" refers to projects that have been approved, are in the review phase, or for which pre-application requests have been submitted to the local agency.

4.1.5 Existing/Operating Projects

The project is located in a mix of rural residential development, undeveloped natural habitats, and agricultural areas. The Northern Alignment crosses one recreational area, Pinto Lake County Park, as described in Section 3.2 Agriculture and Forestry, Land Use and Planning, and Recreational Resources. The Northern Alignment and the distribution line along the Cox-Freedom segment have been a dominant part of the local landscape since the 1970s.

4.1.6 Foreseeable Project Inventory

Table 4-1: Planned and Proposed Projects Within 1 Mile lists reasonably foreseeable projects within 1 mile of the existing power and distribution lines. These projects are also shown on Figure 4-1: Planned and Proposed Projects Map. The following agencies did not identify any projects meeting these specifications within the study area:

- Central Water District
- City of Watsonville
- Pajaro Valley Water Management Association

4.1.7 Potential Cumulative Impacts

This section discusses whether—when combined with past, present, and planned and probable future projects in the area—the project could result in either significant short-term or long-term environmental impacts. Short-term impacts are generally associated with construction of the project, while long-term impacts are those that result from permanent project features or O&M of the project.

Table 4-1: Planned and Proposed Projects Within 1 Mile

Project Name	Project Proponent	Address/ Location	Description	Size (acres)	Status	Anticipated Construction Schedule	
						Begin	End
Green Valley Substation Modification	PG&E	Minto Road, at the Green Valley Substation	Modification of Green Valley Substation.	3.5	In Design	2012	2013
Watsonville Voltage Conversion Project	PG&E	Minto Road, at the Green Valley Substation to the Watsonville Substation	Conversion to 115 kV voltage and relocation of a portion of the 60 kV power line between Green Valley Substation and Watsonville Substation.	NA	In Design	2013	2014
Minto Place Apartments	MidPen Housing Corporation	North side of Minto Road at Green Valley Road	Construction of 88 new affordable rental housing units.	4.4	Under Construction	December 2011	April 2013
Polo Grounds Well and Treatment Plant	Soquel Creek Water District	Polo Grounds Park, 2255 Huntington Avenue	Removal of an existing well pump, column, and irrigation well pump appurtenances. Installation of a new well pump in an existing well. Construction of the well head enclosure and an iron and manganese removal facility. Construction of 3,240 feet of potable water transmission mains, 2,690 feet of sanitary sewer lateral with manholes, and 1,100 feet of raw water discharge line.	3.7	Under Construction	August 2011	April/May 2012
Highway 1 Guardrail Upgrades	Caltrans	Highway 1 (Trafton Road to 0.4 mile north of 41st Avenue)	Improvement of metal beam guard rails and concrete barriers along approximately 14.3 miles of Highway 1.	NA	Under Construction	January 2012	June 2012

NA = information not available

If construction of any of the projects listed in Table 4-1: Planned and Proposed Projects Within 1 Mile occurs in close proximity to and within the same timeframe as the Santa Cruz 115 kV Reinforcement Project, both temporary and permanent impacts could be cumulative. However, power line construction projects generally do not contribute to a cumulatively considerable impact. The intent of a power line reinforcement project is to improve service and reliability for existing users, not to expand services or facilities, and long-term effects will be minor.

Construction of two utility projects—Green Valley Substation Modification and Watsonville Voltage Conversion Project—could occur within the same general timeframe as the Santa Cruz 115 kV Reinforcement Project. One development project listed in Table 4-1: Planned and Proposed Projects Within 1 Mile—Minto Place Apartments—could also be constructed within the same timeframe (the construction timelines are currently unknown).

The potential cumulative impacts are described in detail in the following subsections.

4.1.7.1 Aesthetics

Cumulative impacts to visual resources could occur where project facilities are viewed in combination with other past, present, and future developments. The significance of cumulative visual impacts depends on a number of factors, including the degree to which the viewshed is altered and the extent to which scenic resources in the area are disrupted due to either view obstructions or direct impacts to scenic resource features.

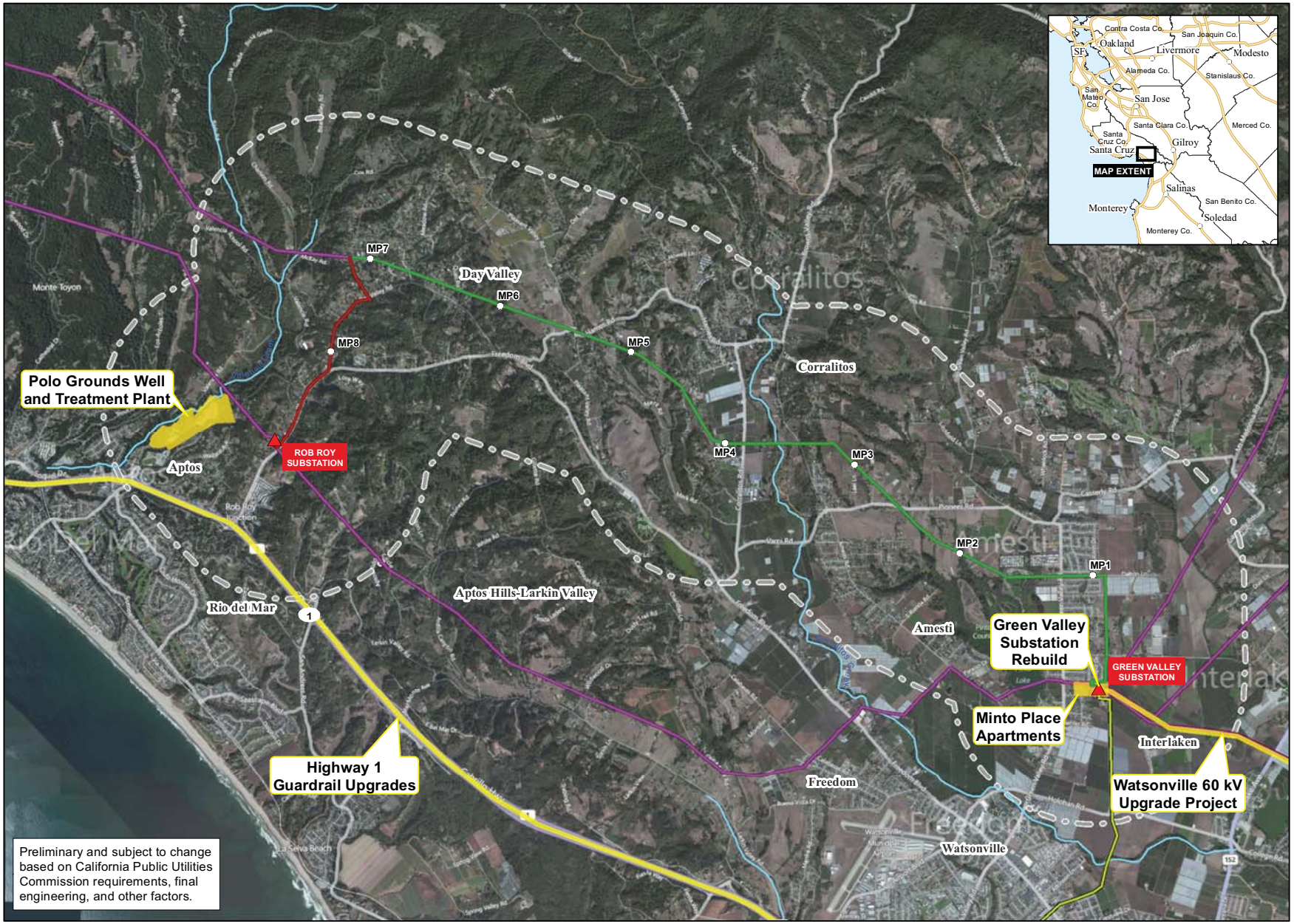
Temporary

The construction schedule for the Santa Cruz 115 kV Reinforcement Project could overlap with the construction schedules for the planned and proposed projects mentioned previously. While these projects are large enough in scale and scope that there is the potential for adverse and cumulative impacts to occur from construction equipment, vehicles, materials, staging areas, and project personnel, the presence of construction equipment, vehicles, and personnel is generally accepted by the public, and will be temporary. These short-term construction impacts are not expected to be significant.

Permanent

Permanent cumulative visual impacts could occur as a result of project components (e.g., replacement poles and substation modification/expansion) being located near other proposed developments in the project area. Expected visual changes associated with the future development in the project area will result from a combination of the project with the Green Valley Substation Modification Project, the Watsonville Voltage Conversion Project, and the Minto Place Apartments Project. As described further in the discussion that follows, permanent impacts from the introduction of these projects will be less than significant due to the distance the projects are located from one another and the new elements' similarity to existing elements in the landscape.

Figure 4-1: Planned and Proposed Projects Map



Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

Santa Cruz 115 kV Reinforcement Project

Figure 4-1
Planned and Proposed Projects Map

- Existing Substation
- Cox-Freedom Segment
- Northern Alignment
- Existing 60 kV Power Line
- Existing 115 kV Power Line
- MP1 Milepost
- Cumulative Project
- 1-Mile Buffer

0 0.25 0.5 1 Mile

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PG&E

lxlr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_planned_proposed.mxd

The most visual components of the Santa Cruz 115 kV Reinforcement Project are located along public roads and through Pinto Lake County Park. However, along the Northern Alignment, the power lines, poles, and right-of-way (ROW) corridors are an existing part of the landscape. Likewise, the Cox-Freedom Segment will be overbuilt on an existing distribution line, and therefore the landscape will only change incrementally as a result of the addition of the power line poles. When analyzed across the viewshed, the increases in height will not result in a significant visual change from existing conditions.

The Green Valley Substation Modification will involve the installation of new components within the existing substation, which will not cause a significant change in the appearance of the substation. Because Green Valley Substation already exists and the Santa Cruz 115 kV Reinforcement Project will only replace three existing poles and add three new poles in the vicinity of the substation, the visual change will not be dramatic. As a result, the cumulative impact of the Green Valley Substation Modification Project and the Santa Cruz 115 kV Reinforcement Project is expected to be less than significant.

The Watsonville Voltage Conversion Project will involve conversion of an existing 60 kV power line from Green Valley Substation to Watsonville Substation on Walker Street adjacent to the Pajaro River in Watsonville. It will add two new towers in the vicinity of Green Valley Substation that will be visible from Minto Road, Onyx Drive, Meidl Avenue, and a few resident backyards on Hastings Lane; however, the removal of poles from the 60 kV line will result in the same number of lines entering and leaving the substation and will not result in a significant change in the visual setting. Likewise, the Santa Cruz 115 kV Reinforcement Project will only replace three existing poles and add three new poles in the vicinity of the substation. Thus, the area where these projects will be implemented will look very similar to existing conditions following their implementation. As a result, the cumulative impact of the Watsonville Voltage Conversion Project and the Santa Cruz 115 kV Reinforcement Project is expected to be less than significant.

The Minto Place Apartments, immediately north of the intersection of Minto Road and Meidl Avenue, will involve the construction of 18 buildings. However, the Minto Place Apartments are located on a dead end road that is only visible from a few residences on Minto Road, Onyx Drive, Meidl Avenue, and a few resident backyards on Hastings Lane. The Santa Cruz 115 kV Reinforcement Project will replace three poles and add three additional poles that will be also be visible from Minto Road, Onyx Drive, Meidl Avenue, and Hastings Lane; however, this will not result in a substantial change in the visual setting. The cumulative visual impact of the Santa Cruz 115 kV Reinforcement Project with the Minto Place Apartments Project would not be significant because the addition of housing in an area dominated by residential development and the modification to existing power poles would not substantially degrade the existing visual character or quality of the site and its surroundings.

Therefore, cumulative visual effects within the project viewshed are expected to be minimal and less than significant. When analyzed cumulatively, the project will not considerably alter the viewshed, disrupt scenic resources with view obstructions, or involve a considerable change from existing conditions.

4.1.7.2 Agriculture and Forestry

In addition to the Santa Cruz 115 kV Reinforcement Project, one other project in the area—the Watsonville Voltage Conversion Project—is also expected to affect agricultural and forestry resources. Cumulative impacts to agricultural and forestry resources could result from the loss of farmland and forest land, as well as disruption to agricultural practices and forest land uses.

Temporary

The Santa Cruz 115 kV Reinforcement Project will temporarily impact approximately 11 acres of Important Farmland and 1.2 acres of forest land during construction. The Watsonville Voltage Conversion Project crosses approximately 9 miles of Important Farmland and approximately 6 miles of forest land, including coastal oak woodland and unknown conifer type. This project is still in the design stage, and agriculture and forest land impacts are not yet known. However, while these impacts, combined with the temporary impacts from the Santa Cruz 115 kV Reinforcement Project, will be cumulative, the construction work areas will not convert Important Farmland to non-agricultural use nor forest land to non-forest use and the temporary use will be short-term. As a result, cumulative impacts are expected to be less than significant.

Permanent

Power pole replacement projects can permanently remove land from agricultural and forest land use, which could result in cumulative permanent impacts. However, pole replacement generally removes an insignificant amount of land from agricultural use. In this case, the Santa Cruz 115 kV Reinforcement Project's contribution to cumulative agricultural impacts will be minor (approximately 0.02 acre), as a result of the new pole foundations required for the project. Further, the poles will be installed within an existing ROW. Farming uses will be able to continue in areas not permanently disturbed by the pole foundations. Additionally, while the Santa Cruz 115 kV Reinforcement Project and the Watsonville Voltage Conversion Project are located on land under Williamson Act contract, these power lines already exist and will not result in a change to the existing use, subdivision of any parcels, or changes in contract status or ownership. Therefore the Santa Cruz 115 kV Reinforcement Project and Watsonville Voltage Conversion Project will not result in significant cumulative impacts to agriculture through the conversion of agricultural lands to non-agricultural use.

Portions of the Santa Cruz 115 kV Reinforcement Project and the Watsonville 60 kV Upgrade Project are located on forest land. Less than 1 acre of forest land will be removed by the Santa Cruz 115 kV Reinforcement Project; vegetation removal in this area will occur to ensure the safety and integrity of the line, as well as to expand the ROW where needed. The exact amount of forest land that will be impacted by the Watsonville 60 kV Upgrade Project is unknown; though, the majority of both projects will be constructed within existing PG&E ROW. The removal of vegetation to expand the ROW for the Santa Cruz 115 kV Reinforcement Project would represent a loss of a fraction of a percent of the approximately 190,000 acres of forest land in Santa Cruz County. Assuming the Watsonville 60 kV Upgrade Project requires a similar amount of tree removal, the result from both projects would not be cumulatively considerable. Additionally, the project will not be located on timberland or TPZs; therefore, the project will not contribute to cumulative impacts to these resources. As a result, the project will not cause

cumulatively considerable impacts to forestry when viewed in combination with the Watsonville Voltage Conversion Project.

4.1.7.3 Air Quality and Greenhouse Gas Emissions

Two of the projects listed in Table 4-1: Planned and Proposed Projects Within 1 Mile could occur simultaneously with the project; therefore, a cumulative air quality impact could occur in the project area during construction. However, all of the projects will be required to implement measures to reduce significant air quality impacts from emissions and dust during construction, which can be achieved with the implementation of measures recommended by the Monterey Bay Unified Air Pollution Control District. These measures include, but are not limited to, limiting the amount of construction equipment used at any one time, minimizing the use of diesel-powered equipment, limiting the hours of operation for heavy-duty equipment, controlling fugitive dust, prohibiting grading activities during periods of high wind (over 15 miles per hour), planting vegetative ground cover in disturbed areas as soon as possible, and covering inactive storage piles. As a result, these potentially concurrent projects are not expected to exceed identified significance thresholds.

GHG emissions will also result from the construction of the project and the other two foreseeable projects that could be constructed within the same timeframe and in the same area. The vehicles and heavy equipment used during construction will be the primary sources of these emissions. While these emissions have the potential to contribute to a cumulative increase in GHG, the emissions during project construction will be similar to those created during the construction of the Santa Cruz 115 kV Reinforcement Project and are expected to be extremely small when compared to the average GHG emissions within Santa Cruz County during the same period of time. As a result, cumulative air quality impacts are expected to be less than significant.

4.1.7.4 Biological Resources

Impacts from the Santa Cruz 115 kV Reinforcement Project to Monterey Spineflower (*Chorizanthe pungens* var. *pungens*), Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*), nesting birds, bat roosts, and other local wildlife will be avoided or minimized during construction through the implementation of applicant-proposed measures (APMs). Monterey Spineflower and Santa Cruz Long-toed Salamander habitat is not anticipated to be present at the Green Valley Substation Modification site (which consists of placing new equipment in approximately 0.2 acre of existing grassland habitat on the substation site) or at the Minto Place Apartments location (which consists of the development of approximately 4.4 acres of grassland habitat). It is unknown whether Monterey Spineflower and Santa Cruz long-toed salamander habitat is present along the Watsonville Voltage Conversion Project. The Santa Cruz 115 kV Reinforcement Project will remove less than approximately 0.5 acre of grassland habitat, and this removal will be distributed along the power line route. Nesting birds and bat roosts are not expected to be present within the Green Valley Substation Modification. The Minto Place Apartments location would develop 4.4 acre of grassland habitat with the potential for nesting birds and bat roosts. Nesting birds and bat roosts could be present along the Watsonville Project. Other local wildlife could be present at these project locations; however, the Minto Place Apartments Project is infill in an area dominated by residential development, and the Green Valley Substation Modification site is fenced and does not provide suitable habitat for wildlife. Likewise, the Watsonville Voltage Conversion Project will be located primarily in existing

utility corridors; thus, impacts will largely be temporary and not extensive. Further, as part of the CEQA review process, avoidance and minimization measures are expected to be implemented to avoid and reduce potential impacts to a less-than-significant level. Therefore, cumulative impacts are expected to be less than significant.

4.1.7.5 Cultural Resources

Cumulative impacts to cultural resources could occur as a result of increased ground-disturbing activities in previously undisturbed areas. The majority of the Santa Cruz 115 kV Reinforcement Project will be constructed within existing, previously disturbed ROWs, and, with implementation of the APMs, is not anticipated to impact any cultural resources. A cultural resources survey found one cultural resource site within the ROW. Impacts to this resource will be avoided with the implementation of APM CUL-02. There are no known significant archaeological resources at the Green Valley Substation Modification site. Although no cultural resource survey has yet been conducted for the Watsonville Voltage Conversion Project, this project will also be constructed largely within an existing, previously disturbed ROW, and a cultural resources survey will be conducted prior to project construction that will recommend measures to avoid impacts to any cultural resources identified. According to the Initial Study for the Minto Place Apartment Project, the cultural resources survey found no cultural resources at the Minto Place Apartments site. Given the low likelihood for impacts to cultural resources from any of these projects, cumulative cultural resources impacts are not expected.

4.1.7.6 Geology, Soils, and Mineral Resources

Potential temporary cumulative impacts from construction of the Santa Cruz 115 kV Reinforcement Project, in conjunction with other planned and proposed projects, include soil disturbance from grading and excavation activities that could cause erosion and sedimentation. All of the projects scheduled within the same timeframe involve soil disturbance. However, the potential for soil erosion and sedimentation will be minimized through the implementation of Storm Water Pollution Prevention Plans (SWPPPs), which are required for all projects that disturb 1 or more acres of soil. As a result, temporary cumulative impacts are expected to be less than significant. Because the project will be engineered to withstand any potential geologic hazard, no permanent cumulative impact is anticipated.

4.1.7.7 Hazards and Hazardous Materials

Cumulative impacts to hazards and/or hazardous materials could result from the construction of concurrent projects, having an increased effect on public or worker safety; such hazards include exposure to hazardous materials, increased fire potential, and physical hazards. Because these projects require construction equipment, they could have a temporary impact from accidental releases of diesel and gasoline fuel, hydraulic fluids, and other hazardous liquids. However, with the proper adherence to state and federal regulations, large releases of hazardous materials are highly unlikely, and small releases would be contained, cleaned up, and disposed of properly. As a result, cumulative impacts are expected to be less than significant.

4.1.7.8 Hydrology and Water Quality

Cumulative impacts to hydrology and/or water quality could result from increases in local water use to control dust during construction and alterations to the existing and natural drainage

patterns of the landscape. All four projects will require the use of water to meet construction needs. If these projects are constructed within the same timeframe, they could produce a temporary cumulative impact to the water supply. The Santa Cruz 115 kV Reinforcement Project is expected to use approximately 0.74 acre-feet of water, which will be obtained from the City of Santa Cruz Municipal Utilities or the City of Santa Cruz Neary Lagoon Treatment Plant. The Green Valley Substation Modification Project is expected to use less water due to its smaller size. The water for both projects is likely to come from the same source. The Watsonville Voltage Conversion Project is expected to use a similar amount of water to the Santa Cruz 115 kV Reinforcement Project, and it will also likely come from the same source. The amount of water required for construction of the Minto Place Apartments is estimated at approximately 0.13 acre-feet. According to the Initial Study for the project, the City of Watsonville Department of Public Works has indicated that adequate supplies are available. In 2009, the sustainable yield of the Pajaro Valley Groundwater Basin was calculated to be 24,000 acre-feet per year under current pumping conditions, and the cumulative impact on water supplies is expected to be less than 0.01 percent of that amount. Therefore, cumulative impacts are not expected to be significant due to the available volume of water in the area.

Potential temporary cumulative impacts to water quality could occur as a result of construction of the Santa Cruz 115 kV Reinforcement Project in conjunction with other planned and proposed projects since all of the projects involve soil disturbance from grading, clearing, and excavation activities. These activities could cause erosion and sedimentation, and thus degrade water quality. However, the potential for soil erosion and sedimentation will be minimized through the implementation of SWPPPs, which are required for all projects that disturb 1 or more acre of soil. With the implementation of SWPPPs, the cumulative impact to water quality is expected to be less than significant.

4.1.7.9 Noise

The Santa Cruz 115 kV Reinforcement Project will not produce noise after construction; thus, it will not contribute to a long-term cumulative ambient noise level impact. Short-term construction noise impacts could overlap with other projects being constructed simultaneously; however, this noise will be temporary, short-term, and dispersed across the linear projects. In addition, the other projects are expected to implement measures similar to those implemented for the Santa Cruz 115 kV Reinforcement Project to reduce noise impacts. Therefore, temporary cumulative noise impacts are expected to be less than significant.

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

Population and Housing

The majority of project crewmembers will commute from the surrounding areas and are expected to be local residents. The Santa Cruz 115 kV Reinforcement Project is expected to have a peak of 70 crewmembers during construction, and the other projects are expected to have similar or fewer crew members. There is sufficient temporary housing available with more than 70 hotels, motels, and bed and breakfast inns in Santa Cruz County that could temporarily house workers if all of the projects occurred simultaneously. Therefore, construction would not have a significant impact on population and housing and would not be considered cumulatively considerable.

Public Services

An emergency could arise as a result of project construction that would require fire or police protection or emergency services. If multiple emergencies were to occur at several construction sites, there could be a cumulative impact on local public services. However, the probability of a single emergency incident is low, and the probability of simultaneous emergencies at multiple construction sites is even lower. In addition, the project spans several jurisdictions and there are many emergency service providers in the cumulative impact analysis area. It is not expected that there will be a significant cumulative impact that would tax the existing emergency services beyond their current capabilities. As a result, cumulative impacts will be less than significant.

Utilities and Service Systems

Cumulative impacts to utilities or service systems have the potential to occur if multiple projects have a combined impact on local utility services or infrastructure. Post-construction, all projects will be required to treat stormwater on site to the maximum extent practicable to comply with regional water quality requirements. The Santa Cruz 115 kV Reinforcement Project will result in approximately 0.16 acre of new impervious surfaces; therefore, most stormwater will continue to infiltrate in the project area after construction. No attachment to municipal stormwater systems is proposed as part of the project, and the project will not contribute a considerable amount of additional stormwater to drainage pipes or treatment facilities. The Green Valley Substation Modification will result in approximately 0.2 acre of new impervious surfaces; however, all stormwater will infiltrate within the project area or will be released to the existing drainage system. The Watsonville Voltage Conversion Project will result in a minor increase in new impervious surfaces; therefore, most stormwater will continue to infiltrate in the project area after construction. The Minto Place Apartments will result in approximately 4.4 acres of new impervious surface; however, according to the Initial Study for the project, existing drainage is adequate because all stormwater runoff for up to a 10-year storm event will be retained on the site and the allowable release rate will be limited to the 5-year predevelopment flow rates. Therefore, the cumulative contribution of the project to stormwater drainage impacts will be less than significant.

Local area landfills could be impacted due to the increased cumulative need for disposal of construction debris. It is estimated that the project will generate less than 5 pounds of construction waste per day, not including wooden poles to be removed, which may be reused. The Green Valley Substation Modification and the Watsonville Voltage Conversion are expected to generate a similar amount of construction waste per day as the Santa Cruz 115 kV Reinforcement Project. The amount of daily construction waste for the Minto Place Apartments is unknown. The Buena Vista Landfill located in the City of Watsonville will be utilized to dispose of project waste materials. This landfill has an estimated capacity until 2031, which accounts for yearly growth in population and associated increased waste generation from cumulative area projects. Therefore, cumulative impacts to landfill access and capacity will be less than significant.

Increased electrical demand will occur as a result of the Minto Place Apartments Project. However, the PG&E project will have a positive impact to the existing electrical system by providing more reliable power to area residents and businesses. As a result, the project will not result in an adverse cumulative impact to utilities.

4.1.7.11 Transportation and Traffic

During construction, traffic impacts will occur from all area projects with overlapping construction timeframes. Roads that could be used for multiple projects at the same time include Minto Road and Green Valley Road. The level of service (LOS) for Green Valley Road is A, the LOS for Minto Road is not available, and the LOS for the intersection of Green Valley Road and Minto Road is also A. The Santa Cruz 115 kV Reinforcement Project will result in a maximum of 215 daily vehicle trips, of which approximately 50 percent will use Green Valley Road. As a result, Green Valley Road, which currently experiences an average daily traffic volume of approximately 20,500 vehicles, will experience a less than 2-percent increase in average daily traffic volume, which is less than significant. The number of daily vehicle trips for the Green Valley Substation Modification is unknown; however, due to the small and limited nature of this project, it is unlikely to have significant overlapping traffic associated with its construction. The number of daily vehicle trips for the Watsonville Voltage Conversion is also unknown; however, due to the limited amount of poles and towers in the vicinity of the Green Valley Substation, it is unlikely to have significant traffic associated within its construction. The number of daily vehicle trips for the Minto Place Apartments is also unknown; however, Minto Road does not contain a significant amount of daily traffic that could be disrupted by this project. Because the project will only utilize Minto Road for the installation of nine poles, overlap with the other projects at this location will be limited. As a result, construction of the Santa Cruz 115 kV Reinforcement Project will not contribute appreciably to a cumulative impact on traffic and transportation in the project area.

4.2 GROWTH-INDUCING IMPACTS

The following criteria from the CEQA Checklist are used to evaluate whether the project will result in potential individual or cumulative growth-inducing impacts:

- Could the project, either directly or indirectly, foster economic or population growth?
- Could the project remove obstacles to growth in the area?
- Would the project provide new employment?
- Would the project provide access to previously inaccessible areas or extend public services to previously unserved areas?
- Would the project tax existing community services?
- Would the project cause development elsewhere?

The project is needed to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system. It will not extend the power lines or other infrastructure into areas not already served. Overland access will be necessary to access some of the poles, but the access routes will be temporary and will not create new permanent accessways.

Construction will take approximately 8 months and will require a peak of 70 workers. The majority of construction workers are expected to come from the local area or to commute from neighboring cities. Because the construction duration is short and the local workforce is anticipated to be sufficient, any changes to economic and population growth will be less than significant. As discussed in Section 3.10 Population and Housing, Public Services, and Utilities,

existing community services are sufficient to serve the project for both short- and long-term needs. New development will not be generated by the project. Therefore, no growth-inducing impacts are expected.

4.3 CONCLUSION

While the project will contribute to certain cumulative impacts with other area projects, its contribution to these impacts is anticipated to be minimal. A positive cumulative impact is expected in the area of utilities. For the other resource areas, potentially adverse cumulative impacts may result; however, it is anticipated that these impacts will be less than significant, particularly with implementation of APMs and compliance with applicable regulatory requirements. In addition, no growth-inducing impacts are anticipated as a result of the project.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 5 – ALTERNATIVES

5.1 INTRODUCTION

This discussion is included to comply with the California Public Utilities Commission's General Order (GO) 131-D, section IX.B.1.c, but is not included as part of the California Environmental Quality Act (CEQA) analysis because this Proponent's Environmental Assessment (PEA) has concluded that all impacts from the proposed project will be less than significant. CEQA does not require a review of alternatives where, as with PG&E's project here, the proposed project would result in no significant environmental impacts after mitigation. (CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3 (Guidelines), § 15126.6, subd. (a) and (f)(2)(A); Assigned Commissioner's Ruling dated October 16, 2001, A.01-07-004). This is because, under CEQA, a "reasonable alternative" is one that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project. (Guidelines, § 15126.6, subd. (a).)

Although several system alternatives were considered during the development of the project, the proposed project was ultimately selected because it meets the project objectives and routing criteria, while causing only minimal foreseeable environmental impacts and the least amount of foreseeable environmental impacts of the alternatives analyzed. In compliance with GO 131-D, this section summarizes and compares the environmental advantages and disadvantages of the project and the alternatives considered.

5.2 METHODOLOGY

Early in the planning process, PG&E planning engineers considered the following four possible solutions to address the need to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system:

1. "open" the existing Green Valley-Camp Evers Power Line near Cox Road, extending both line sections to Rob Roy Substation in a double-circuit configuration, thus creating the Green Valley-Rob Roy Power Line and Rob Roy-Camp Evers Power Line;

2. create a tap connection between the existing Green Valley-Camp Evers Power Line near Cox Road, bringing a single-circuit tap to Rob Roy Substation;

3. convert the existing 60 kV system from Monta Vista Substation in Cupertino down to Davenport into a 115 kV system and constructing a new 115 kV line to Camp Evers Substation; and

4. construct a new 115 kV power line between Green Valley Substation and Rob Roy Substation.

Alternatives 1 and 2 would result in only two supply lines from Green Valley Substation; therefore, these alternatives would not solve the loading and voltage issues. Alternative 3 would

require the rebuilding of more than 30 miles of existing 60 kV power lines to support 115 kV conductors, the rebuilding of three existing substations to include new 115 kV equipment, and constructing a new approximately 9-mile-long 115 kV power line between Point Moretti Substation and Camp Evers Substation. This alternative would be costly and potentially result in substantial environmental impacts**.** Alternative 4 would add a third supply line from Green Valley Substation; therefore, it would meet the project objectives while being cost-effective and environmentally sensitive.

Once PG&E selected Alternative 4, a routing and constraints analysis was performed to determine potential routes that would tie Green Valley Substation to Rob Roy Substation. The study area included 19,671 acres located approximately 75 miles south of San Francisco. It is bounded by the City of Santa Cruz and the Pacific Ocean to the west, the City of Watsonville to the south, and the Santa Cruz Mountains to the northeast. Topography in the study area is dominated by forested coastal mountains and alluvial grassland valleys.

The alternatives analysis included five power line corridor alternatives. The power line corridor alternatives were selected based on their construction feasibility, use of existing distribution and power line corridors, and interconnection to the Santa Cruz 115 kV power system. Potential routes located west of Highway 1 were not evaluated due to the level of greenfield construction required and the highway's scenic value. The five power line corridor alternatives are depicted in Figure 5-1: Project Alternatives, and are discussed in Section 5.3 Description and Analysis of Alternatives.

For this analysis, the alternatives were first evaluated for their ability to meet the project objectives. Secondly, the alternatives that were found to meet the project objectives were evaluated based on routing criteria (which considers biological, cultural, visual, and other factors). Finally, the alternative that was found to best meet both the project objectives and the routing criteria was chosen as the proposed project.

5.2.1 Project Objectives

The objective of the project is to add a second 115 kV circuit between Green Valley Substation and Rob Roy Substation to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system. Alternatives that did not meet this project objective were eliminated from further consideration.

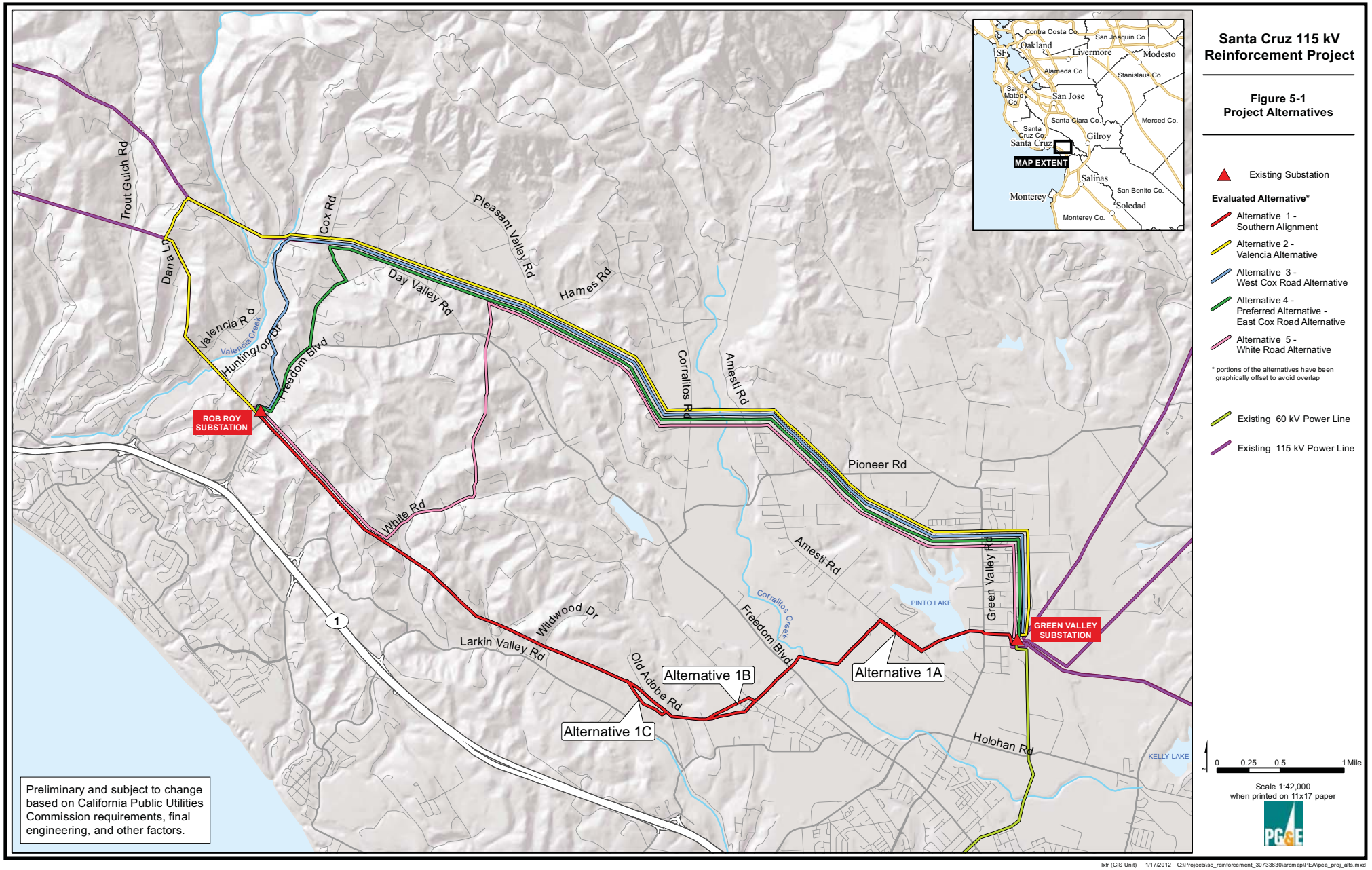
5.2.2 Routing Criteria

Alternatives that were determined to meet the project objective were analyzed with regard to environmental and routing constraints. The following criteria were used in analyzing and selecting the project alternatives:

- construct any new facilities in locations that are supported by local area planning objectives, specifically using existing alignments and easements where feasible;

- route the project within existing utility corridors and rights-of-way (ROWs) to the extent feasible, while minimizing the risk of grounding to known buried conductive facilities;

Figure 5-1: Project Alternatives



Santa Cruz 115 kV Reinforcement Project

Figure 5-1
Project Alternatives

- Existing Substation

Evaluated Alternative*

- Alternative 1 - Southern Alignment
- Alternative 2 - Valencia Alternative
- Alternative 3 - West Cox Road Alternative
- Alternative 4 - Preferred Alternative - East Cox Road Alternative
- Alternative 5 - White Road Alternative

* portions of the alternatives have been graphically offset to avoid overlap

- Existing 60 kV Power Line
- Existing 115 kV Power Line

0 0.25 0.5 1 Mile

Scale 1:42,000
when printed on 11x17 paper

PG&E

lxlr (GIS Unit) 1/17/2012 G:\Projects\sc_reinforcement_30733630\arcmap\PEA\pea_proj_alts.mxd

- route the project to take advantage of existing access and existing PG&E property to avoid increased impacts due to operation and maintenance activities;
- avoid or minimize impacts to sensitive biological resources, especially those that would present significant permitting or planning challenges;
- avoid or minimize impacts to sensitive cultural resources;
- avoid or minimize visual impacts to sensitive view sheds or public places;
- avoid or minimize routing near sensitive receptors, such as schools, hospitals, or parks; and
- avoid displacing residential or commercial development.

5.3 DESCRIPTION AND ANALYSIS OF ALTERNATIVES

5.3.1 Evaluated Alternatives

Five project alternatives were evaluated with regard to routing, biological, and cultural constraints so they could be ranked based on their impacts to various resource areas. These alternatives all involved rebuilding all or a portion of two existing 115 kV power lines in the area: the Green Valley-Paul Sweet 115 kV Power Line (Southern Alignment), and the Green Valley to Camp Evers 115 kV Power Line (Northern Alignment). For the purposes of this evaluation, the Northern Alignment and Southern Alignment refer to any portion of these two existing 115 kV power lines that would be rebuilt from single circuit to double circuit. The Southern Alignment Alternative is the most direct option, and involves rebuilding the Southern Alignment from a single circuit to a double circuit along the southern route between Green Valley and Rob Roy substations. The Valencia, East Cox Road, West Cox Road, and White Road Alternatives each involve various combinations of the following actions:

- rebuilding a portion of the Northern Alignment,
- constructing a new single-circuit power line interconnection, and
- potentially rebuilding a portion of the Southern Alignment, as further described in Section 5.3.1.1 Southern Alignment Alternative.

All five of the power line corridor alternatives achieve the project objective established by PG&E. Therefore, these alternatives were further evaluated based on the routing criteria. Table 5-1: Alternatives Comparison provides a comparison of the alternatives based on their overall length, new ROW length, biological sensitivity, cultural sensitivity, and visual sensitivity.

Table 5-1: Alternatives Comparison

Alternative	Overall Length (miles)	New ROW Length (miles)	Complies with Local Planning Objectives	Located within Existing ROW, While Minimizing Known Grounding	Accessible from Existing PG&E Facilities and Access Roads	Biological Sensitivity	Cultural Sensitivity	Visual Sensitivity	Displaces Existing Residential or Commercial Development
Southern Alignment Alternative	7.4	1.3	No	No	No	High	High	High	Yes
Valencia Alternative	10.5	0.4	No	Yes	No	High	Low	Medium	No
West Cox Road Alternative	8.3	--	Yes	Yes	Yes	Low	High	High	No
East Cox Road Alternative (Proposed Project)[1]	8.9	--	Yes	Yes	Yes	Low	Medium	Medium	No
White Road Alternative	9.6	1.6	No	Yes	No	High	Low	High	Yes

[1] During the preliminary engineering process, the East Cox Road Alternative was refined so that it differs from the proposed project alignment in some locations. The analysis of the East Cox Road Alternative contained within Chapter 5 – Alternatives is based upon the pre-engineered alignment.

5.3.1.1 Southern Alignment Alternative

Description

The Southern Alignment Alternative is the most direct option, and includes rebuilding the Southern Alignment to convert the single-circuit to a double-circuit line. The existing Southern Alignment begins at Green Valley Substation and heads west across Pinto Lake near the community of Freedom. From Freedom, the alignment travels northwest—roughly parallel to Larkin Valley Road—through the communities of Larkin Valley and Aptos Hills, before crossing Aptos High School and Freedom Boulevard and entering Rob Roy Substation.

The Southern Alignment Alternative includes three realignments to the existing Southern Alignment that would be necessary to make it a feasible option. The first realignment would relocate a section of the alignment that runs along the shoulder of Amesti Road from approximately 0.1 mile south of Bencich Lane to approximately 0.1 mile south of Hawthorne Avenue. This section would be relocated within an apple orchard approximately 20 to 40 feet south of the existing alignment. The realignment would decrease the risk of outages resulting from automobile collisions with poles located on the road shoulder. The second realignment would relocate a section of the alignment to the north between Calabasas Road and a private driveway approximately 0.3 mile north of Buena Vista Drive, away from an existing residential neighborhood. Currently, the existing Southern Alignment crosses over backyards in a residential development; thus, a new ROW would be required for this portion of the Southern Alignment Alternative. The third realignment would relocate a section of the alignment from approximately 0.5 mile north of the intersection of Old Adobe Road and Larkin Valley Road to approximately 0.3 mile north of the intersection of Larkin Valley Road and Larkin View to avoid an existing underground utility line located within a shared ROW. Because the existing wood poles would be replaced with steel poles, this segment of the alignment would need to be rerouted to increase the distance between the new steel poles and the underground utility. A new ROW would be required in this area as well.

Analysis

The Southern Alignment Alternative is routed entirely within the existing Southern Alignment 115 kV power line ROW, with the exception of three realignments necessary to address several overriding factors. As previously described, these factors include rerouting portions of the existing Southern Alignment ROW for increased safety purposes and to avoid an existing underground utility line. To reduce automobile collisions with poles along Amesti Road, the realignment would run through 0.4 mile of apple orchards and could require removal of some trees in the orchard. With the construction of additional circuits, the risk to the residences located between Calabasas Road and the private driveway 0.3 mile north of Buena Vista Drive would be too great to utilize the existing alignment. The realignment would run through approximately 0.3 mile of agricultural fields and orchards, and could also require the removal of trees in the orchard. To provide a sufficient safety margin between the new TSPs required for a double-circuit power line and the existing underground gas pipeline, PG&E would have to move the existing power line ROW up to 38 feet. Because this portion of the power line alignment runs through up to 0.4 mile of coastal oak woodland vegetation, expanding the ROW would likely require extensive tree removal. These three realignments would require new ROW agreements, and would thus have impacts outside of the existing utility corridors. As a result, this alternative

conflicts with the routing objectives of constructing the project within existing utility corridors in accordance with local area planning objectives.

The biological constraints analysis determined that the risk of take of a Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*), which is federally listed as endangered and considered endangered and Fully Protected by the state, is very high with this alternative because the alignment crosses through Larkin Valley in close proximity to five known breeding ponds, including the Calabasas Unit of the Ellicott Slough National Wildlife Refuge. In addition, the majority of the Southern Alignment Alternative would require a significant amount of tree and vegetation removal, and is within occupied upland habitat where impacts would be unavoidable. In addition, the Southern Alignment Alternative crosses in close proximity to United States Fish and Wildlife Service (USFWS)-designated critical habitat for the federally endangered robust spineflower (*Chorizanthe robusta robusta*). Therefore, the Southern Alignment Alternative is considered to be the least preferable alternative from a biological perspective.

A cultural records search revealed the presence of a documented (but not officially recorded) prehistoric resource just east of Amesti Road and a two-story Mexican-era rancho adobe on Old Adobe road; however, the adobe would be avoided by the third realignment. The primary area where this alignment may contain buried archaeological deposits is the broad Holocene floodplain of Corralitos Creek near Pinto Lake. Smaller areas of moderate to high sensitivity exist in the narrow Holocene floodplains along Valencia Creek, in addition to numerous unnamed watercourses—including the drainage east of Trout Creek, the drainage north of White Road, and in Larkin Valley. Overall, 2.4 miles of this alternative (approximately 32 percent of the total alignment) crosses through areas of high sensitivity for buried cultural resources. With the inclusion of the two known resources, the Southern Alignment Alternative is considered to have the highest sensitivity for known and potential cultural resources of any of the evaluated alternatives.

The Southern Alignment Alternative crosses several areas of visual significance, including existing spans over Pinto Lake adjacent to Pinto Lake Park, which is owned by the City of Watsonville. The Southern Alignment crosses Pinto Lake in direct view from the park. Construction of the Southern Alignment Alternative would require taller poles on either side of the lake, as well as three additional conductors spanning the lake. The additional power line crossings over Pinto Lake are considered to be a potential visual impact. The alignment also crosses over Aptos High School, bisecting the baseball and football fields in the school parking lot, which is considered a sensitive resource.

Because three new ROW segments would be necessary to accommodate this alternative, and due to the potentially significant and unavoidable impacts to Santa Cruz long-toed salamander and robust spineflower, as well as high sensitivity for encountering cultural resources, the presence of sensitive receptors along the route (e.g., Aptos High School), and significant visual impacts to sensitive viewsheds, the Southern Alignment Alternative was not selected as the proposed project.

5.3.1.2 Valencia Alternative

Description

The Valencia Alternative involves rebuilding the Northern Alignment from Green Valley Substation to the intersection of Fern Flat Road and Valencia School Road, near the community of Day Valley. From the intersection of Fern Flat Road and Valencia School Road, a new 115 kV single circuit line would be constructed to the south for approximately 0.4 mile before joining the Southern Alignment 0.2 mile west of the intersection of Trout Gulch Road and Valencia School Road. The Southern Alignment would then be rebuilt with two circuits to Rob Roy Substation.

Analysis

The Valencia Alternative is the longest alternative evaluated at 10.5 miles. Although this alternative is almost entirely located within the existing ROWs of the Northern and Southern Alignments, approximately 0.4 mile of new greenfield ROW through coastal oak woodland vegetation would be required to connect these two alignments and would require extensive tree removal. Thus, this alternative conflicts with local area planning policies, as portions of the power line would need to be relocated outside of existing ROWs. Likewise, operation and maintenance activities would be required outside of existing PG&E property or access roads. However, no known buried conductive facilities are located within the ROWs and no residences or commercial developments would need to be displaced by the required ROW expansion.

The Valencia Alternative crosses through USFWS-designated critical habitat for several special-status species, including the federally endangered robust spineflower, federally threatened steelhead (*Oncorhynchus mykiss irideus*) south-central Distinct Population Segment (DPS), and federally threatened steelhead central California coast DPS. While impacts to steelhead critical habitat are anticipated to be avoidable, impacts to robust spineflower critical habitat would be unavoidable.

In general, the Northern Alignment is considered to have a lower potential than the Southern Alignment to contain known or unknown cultural resources. The area with the greatest sensitivity for buried sites along the Northern Alignment portion of the Valencia Alternative is the broad Holocene floodplain of Corralitos Creek. The new 115 kV power line and the portion of the Southern Alignment unique to the Valencia Alternative are situated in an upland area composed of bedrock and undivided Pleistocene deposits with no drainage crossings. As a result, the Valencia Alternative has the lowest probability of containing buried sites. In total, 2.4 miles of the Valencia Alternative (approximately 23 percent of the total alignment) is sensitive for buried resources. There are no known archaeological resources within the area of this alternative; therefore, the overall likelihood of impacting cultural resources is low.

The Valencia Alternative shares potential visual impacts with several other alternatives that involve a partial rebuilding of the Northern Alignment, particularly within Pinto Lake County Park, which is owned by Santa Cruz County, and from County scenic roads, which include portions of Corralitos Road and Amesti Road. However, these impacts are considered to be less significant than the visual impacts resulting from the Southern Alignment Alternative; thus, they are not considered overriding factors for this alternative.

Because of its overall longer length, which would result in more total disturbance and/or impacts, the anticipated impacts to robust spineflower, and the need to acquire new ROWs, the Valencia Alternative was determined to have greater conflicts with the project's routing criteria and was not selected as the proposed project.

5.3.1.3 West Cox Road Alternative

Description

The West Cox Road Alternative involves rebuilding the Northern Alignment from Green Valley Substation to 0.1 mile west of the intersection of Cox Road and Leslie Lane. From this point, a new 115 kV single-circuit line would be constructed to the south along Cox Road for approximately 0.3 mile, continuing south along Valencia Road for approximately 1.1 miles, and then southwest along Freedom Boulevard before entering Rob Roy Substation.

Analysis

Several sections of the West Cox Road Alternative would not be located within existing ROWs. In addition, where it would be located within existing distribution ROWs, the new 115 kV power line would require an expansion of these distribution line ROWs, as they are not wide enough to accommodate a higher-voltage power line. Therefore, this alternative potentially conflicts with local area planning objectives to site new power lines within existing ROWs. In addition, this alternative potentially results in additional impacts from operation and maintenance activities because the alignment is not proximate to existing PG&E facilities. However, no known buried conductive facilities are located within the ROWs and no residences or commercial developments would need to be displaced as a result of this alternative.

The West Cox Road Alternative is immediately adjacent to Valencia creek, which is USFWS-designated critical habitat for two special status species—steelhead south-central DPS and steelhead central California coast DPS—although impacts to these areas are anticipated to be avoidable. Significant tree trimming within the riparian cover east of Valencia Creek along the 0.2-mile segment of West Cox Road would be necessary for clearances required for 115 kV construction. In addition, compared to most of the other alternatives (except the East Cox Road Alternative), the West Cox Road Alternative was determined to have fewer potential impacts to special-status species due to its low potential to impact Santa Cruz long-toed salamander.

The area with the greatest sensitivity for buried cultural resources along the Northern Alignment portion of the West Cox Road Alternative is the broad Holocene floodplain of Corralitos Creek. The additional segment unique to the West Cox Road Alternative connecting the Northern Alignment to Rob Roy Substation crosses only a marginal amount of Holocene alluvium near Valencia Creek; however, the likelihood of encountering Holocene alluvium in the Day Valley area, combined with the potential for buried resources in the Holocene alluvium on portions of the Northern Alignment, results in approximately 2.4 miles of the West Cox Road Alternative (29 percent of the total alignment) falling within areas at least moderately sensitive for buried cultural resources. In addition, two historic-era structures—Valencia Hall and the Valencia General Store—are adjacent to the West Cox Road Alternative. Valencia Hall is listed on the National Register of Historic Places (Register), and the Valencia General Store is recommended

eligible to the Register. If the West Cox Road Alternative were selected, both of these structures could be adversely affected through a change in the visual setting of their surroundings.

The West Cox Road Alternative shares potential visual impacts with the other alternatives that involve a partial rebuilding of the Northern Alignment, particularly within Pinto Lake County Park, and from County scenic roads, which include portions of Corralitos Road and Amesti Road. In addition, visual impacts to the Valencia Hall and Valencia General Store are largely unavoidable. The potential impacts due to riparian tree-cover trimming and removal along the east bank of Valencia Creek are unavoidable.

While the West Cox Road Alternative is one of the most suitable alternatives in meeting the routing objectives, impacts to cultural resources are considered to be unavoidable. In addition, the potential impacts to the historic or scenic view shed from the Valencia Hall and Valencia General Store are significant and unavoidable. Consequently, the West Cox Road Alternative was not selected as the proposed project.

5.3.1.4 White Road Alternative

Description

The White Road Alternative involves rebuilding the Northern Alignment from Green Valley Substation to 0.3 mile north of the intersection of Freedom Boulevard and Commercial Drive. From this point, a new 115 kV single-circuit line would be constructed overland to the south for approximately 1.6 miles, before following White Road southwest for approximately 0.8 mile to 0.2 mile south of the intersection of White Road and Milky Way along the Southern Alignment. The Southern Alignment would then be rebuilt to Rob Roy Substation.

Analysis

While the White Road Alternative is partially located within the existing ROWs of the Northern Alignment and Southern Alignment, approximately 1.6 miles of new ROWs are required. In addition, the new 1.6 miles of ROW would span coastal oak woodland and redwood vegetation and would require extensive tree removal, additional continued maintenance, and a new access road system. Thus, this alternative would conflict with local area planning objectives and require additional operation and maintenance activities outside of PG&E property. In addition, this alternative would displace one residence on Bens Way and two residences on White Road as a result of the new ROWs required. However, no known buried conductive facilities are located within these ROWs.

The White Road Alternative crosses through USFWS-designated critical habitat of one special-status species—steelhead south-central DPS; however, impacts to this critical habitat are anticipated to be avoidable because all streams and other waterways that might contain habitat for this species would be spanned. It is also located adjacent to critical habitat for robust spineflower. Similar to the Valencia Alternative, impacts to robust spineflower may be unavoidable. In addition, several known breeding ponds and occurrences of Santa Cruz long-toed salamander have been recorded within 0.3 mile of the White Road Alternative. Lastly, the White Road Alternative crosses in close proximity to two Santa Cruz long-toed salamander reserves. The combination of known occurrences, breeding habitat, and protected habitats in the nearby

vicinity make the construction within a new ROW unsuitable, and not consistent with PG&E's criteria to minimize impacts to special-status species.

The White Road Alternative has a moderate to high sensitivity for buried archaeological sites within the 0.6-mile portion situated on Holocene alluvium along White Road, and a low to moderate sensitivity along the 1.8-mile portion of this alignment situated on Holocene colluvium in Pleasant Valley. When combined with the sensitivity for buried sites along the broad Holocene floodplain of Corralitos Creek, this alternative has approximately 2.1 miles of sensitive areas. This represents approximately 22 percent of the total alignment, which is the lowest percentage of sensitive areas of the alternatives analyzed. Furthermore, there are no previously recorded resources along the White Road Alternative. Consequently, this alternative has an overall low likelihood of impacting cultural resources.

The White Road Alternative crosses through an area of clustered small-acreage rural properties along White Road and through Larkin Valley. Because of the rural and scenic nature of the area, the construction of a new 115 kV power line is considered to have potentially significant impacts to the rural and scenic setting. Combined with the need to clear a large amount of trees to accommodate a new ROW, visual impacts resulting from the White Road Alternative are considered to be potentially significant.

Because this alternative requires approximately 1.6 miles of new ROW construction, some of which is within occupied habitat for Santa Cruz long-toed salamander, and would also require extensive tree removal and a new access road system, it was determined that the White Road Alternative does not meet the project routing objectives to minimize impacts to sensitive resources and to site the project within existing ROWs. As a result, this alternative was not selected as the proposed project.

5.3.1.5 East Cox Road Alternative (Proposed Project)[2]

5.3.1.6 Description

The East Cox Road Alternative involves rebuilding the Northern Alignment from Green Valley Substation to less than approximately 0.1 mile south of the intersection of Cox Road and Leslie Lane. From this point, the Cox-Freedom Segment would be constructed to the south along Cox Road for approximately 0.3 mile, continuing southwest on McDonald Road for approximately 0.7 mile, and then southwest along Freedom Boulevard for approximately 0.7 mile to Rob Roy Substation.

Analysis

The East Cox Road Alternative is located entirely within existing ROWs; however, the new 115 kV power line overbuild segment may require an expansion of existing distribution line ROWs, which may not be wide enough to accommodate a higher-voltage power line. The easement expansion would fall within the County road building setback and would not conflict with local area planning objectives, although this additional area will increase the impact area

[2] During the preliminary engineering process, the East Cox Road Alternative was refined so that it differs from the proposed project alignment in some locations. The analysis of the East Cox Road Alternative contained within Chapter 5 – Alternatives is based upon the pre-engineered alignment.

resulting from ordinary operation and maintenance activities. However, no known buried conductive facilities are located within the ROWs and no residences or commercial developments would need to be displaced as a result of this alternative.

The East Cox Road Alternative crosses through USFWS-designated critical habitat for only one special-status species—steelhead south-central DPS; however, impacts to this critical habitat are anticipated to be avoidable because all streams and other waterways that might contain habitat for this species would be spanned. In addition, this alternative has a low potential to impact Santa Cruz long-toed salamander. Thus, compared to other alternatives, the East Cox Road Alternative was determined to have the fewest potential impacts to special-status species.

The area with the greatest sensitivity for buried cultural resources along the Northern Alignment is the broad Holocene floodplain of Corralitos Creek. The additional segment connecting the Northern Alignment to Rob Roy Substation is situated entirely within Holocene colluvium, which has a low to moderate sensitivity for buried sites. Approximately 3.8 miles of the East Cox Road Alternative (approximately 43 percent of the total alignment) is located within areas at least moderately sensitive for buried cultural resources. While the buried resource sensitivity is higher, there are no recorded resources in or adjacent to the East Cox Road Alternative. Thus, this entire route has a moderate potential for impacting cultural resources.

The East Cox Road Alternative shares potential visual impacts with the other alternatives that involve a partial rebuilding of the Northern Alignment, particularly within Pinto Lake County Park, and from County scenic roads, which include portions of Corralitos Road and Amesti Road. However, these impacts are generally considered to be less significant than the visual impacts resulting from the Southern Alignment Alternative; thus, they were not considered overriding factors for this alternative.

The East Cox Road Alternative is considered to have the least potential to impact biological resources and only moderate potential to impact cultural resources. In addition, visual impacts are considered either the same or less than other alternatives. Lastly, because the entire alternative can be located within existing distribution and/or power line ROWs, it is most consistent with the overall routing objectives for the project. Therefore, the East Cox Road Alternative was selected as the proposed project.

5.4 CONCLUSION

Based on the analysis of the project alternatives identified through the routing criteria, it was determined that the East Cox Road Alternative meets both the project objectives and the routing criteria. It causes only minimal environmental impacts and the least amount of foreseeable environmental impacts of the alternatives analyzed. Therefore, the East Cox Road Alternative was selected as the proposed project.

5.5 REFERENCES

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