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 Crazy Horse Canyon Switching Station Project Pursuant to General Order 131-D (U 39 E)	Application No.

EXHIBIT A

PROPONENT'S ENVIRONMENTAL ASSESSMENT FOR THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY FOR A PERMIT TO CONSTRUCT THE CRAZY HORSE CANYON SWITCHING STATION

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

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

Attorneys for Applicant
PACIFIC GAS AND ELECTRIC COMPANY

Crazy Horse Canyon Switching Station Project

Proponent's Environmental Assessment

Prepared for
Pacific Gas and Electric Company

Prepared by
TRC Solutions, Inc.
80 Stone Pine Road, Suite 200
Half Moon Bay, CA 94019

April 2010

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

GLOSSARY

ambient noise: the prevailing general noise existing at a location or in a space, usually consisting of a composite of sounds from many sources near and far.

arterial road: road that moves large volumes of traffic from one section of a city to another and beyond.

attainment: applies to specific criteria pollutants of air quality, if air quality standards are achieved.

A-weighted sound level: the sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made. A-weighting de-emphasizes the low and very high frequency components of the sound in a manner similar to the response of the average human ear. Community noise evaluations universally use A-weighted sound levels because they correlate well to subjective reactions of people. Noise evaluations are generally taken in root mean square units, using meters with calibrated standardized time responses.

circuit breaker: a switching device capable of making, carrying, and interrupting currents under normal circuit conditions and also making, carrying for a specified time, and interrupting currents under abnormal circuit conditions.

conductor: any metallic material, usually in the form of wire, cable, or bar, suitable for carrying an electric current.

community noise equivalent level: a 24-hour average metric for community noise exposure involving a 24-hour average of the 1-hour equivalent sound levels that differentiates between daytime and nighttime noise exposures with a 5 dBA penalty for L_{eq} between 7 p.m. and 10 p.m. and 10-dBA penalty for noise between the hours of 10 p.m. and 7 a.m. CNEL is generally about 4.5 dBA higher than the daily L_{eq} for the same location due to the mathematic effect of the penalties.

criteria pollutants: air pollutants pervasive in urban environments and closely monitored due to immediate public health issues. Permissible levels of these pollutants are standardized through health-based criteria (science-based guidelines). National and state ambient air quality standards have been established for such pollutants.

day-night sound level: the L_{eq} of the A-weighted noise level over a 24-hour period with a 10 dB penalty applied to noise levels between 10 p.m. and 7 a.m.

decibel: a measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, and sound intensity) with respect to a standardized quantity.

emissions: substances discharged into the air.

energy equivalent level: the level of a steady noise that would have the same energy as the fluctuating noise level integrated over the period of interest. L_{eq} is widely used as a single-number descriptor of environmental noise. L_{eq} is based on the logarithmic or energy summation, and it places more emphasis on high noise level periods than does L_{50} or a straight arithmetic average of noise level over time. This energy average is not the same as the average sound pressure levels over the period of interest, but must be computed by a procedure involving summation or mathematical integration.

frequency: the number of oscillations per second of a periodic noise (or vibration) expressed in Hertz (abbreviated Hz). Frequency in Hertz is the same as cycles per second.

historical resource: often used interchangeably with the term *cultural resource. Historical resources* include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic agricultural, educational, social, political, military, or cultural annals of California.

kilovolt: the electrical unit of potential difference equal to 1,000 volts.

landscape character: the combination of physical, biological, and cultural attributes that make each landscape identifiable or unique.

level of service: a qualitative measure describing operational conditions within a traffic stream and motorists' perception of those conditions. LOS ratings typically range from LOS A, which represents free flow conditions, to LOS F, which is characterized by forced flow, heavy congestion, stop-and-go traffic, and long queues forming behind breakdown points.

megawatt: the electrical unit of power that is equal to 1,000 kilowatts or 1,000,000 watts.

noise: unwanted sound. Sound is usually measured via the logarithmic decibel scale referenced to the minimum threshold pressure for audibility (20 micro Pascal.) A change of 3 dB is equal to a doubling of sound pressure. A change of 10 dB represents a 10x change in sound pressure but is perceived as a doubling of sound. Five dB is considered to be a definite noticeable change in sound level

non-attainment: applies to specific criteria pollutants of air quality, if air quality standards are violated.

1/3 octave band: One octave is an interval between two sound frequencies that have a ratio of two. For example, the frequency range of 200 Hz to 400 Hz is one octave, as is the frequency range of 2,000 Hz to 4,000 Hz. An octave band is a frequency range that is one octave wide. A standard series of octaves is used in acoustics, and they are specified by their center frequencies. In acoustics, to increase resolution, the frequency content of a sound or vibration is often analyzed in terms of 1/3 octave bands, where each octave is divided into three 1/3 octave bands.

root-mean-square: Root-mean-square is an averaging methodology, whereby a signal is squared, then the mean is found, and the square root of the mean is taken. Human perception of noise and vibration is closely correlated to this metric, rather than peak noise or vibration levels.

seismicity: the frequency, intensity, and distribution of earthquake activity in a given area.

sensitive receptors: facilities or land uses that include people who are particularly susceptible to the affects of air pollution, including children, the elderly, and people with illnesses. Schools, hospitals, and residential areas are all examples of sensitive receptors.

statistical distribution terms: L_{50} is a statistical descriptor of the typical average background noise (or vibration) levels observed during a measurement period, normally made up of the summation of a large number of sound sources distant from the measurement position and not usually recognizable as individual noise sources. Generally, the prevalent source of this residual noise is distant street traffic. L_{50} is not strongly influenced by occasional local motor vehicle pass-byes. However, it can be influenced by stationary sources, such as air conditioning equipment.

traffic congestion: traffic volume divided by roadway capacity, which results in a volume-to-capacity (v/c) ratio, usually ranging from 0 to 100.

toxic air pollutants/contaminants: air pollutants that occur at relatively low concentrations and are associated with carcinogenic or acute health effects. Ambient air quality standards have not been established at the national or state level.

unclassified: applies to specific criteria pollutants of air quality, if there is insufficient information to determine whether a criteria pollutant is in “attainment” or “nonattainment” status.

ACRONYMS

Acronym/ Abbreviation	Definition
o	degrees
µg/m^3	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB-32	Assembly Bill 32
ACOE	U.S. Army Corps of Engineers
AMBAG	Association of Monterey Bay Area Governments
APM(s)	applicant proposed measure(s)
ASTM	American Society for Testing Materials
BMP(s)	Best Management Practice(s)
BUOW	burrowing owl
CAA	Clean Air Act
Caltrans	California Department of Transportation
CALUP	California Airport Land Use Plan for Sonoma County
CARB	California Air Resources Board
CBC	California Building Code
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEE	Customer Energy Efficiency
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	Methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society

Acronym/ Abbreviation	Definition
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRLF	California red-legged frog
CTS	California tiger salamander
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
dBA	A-weighted sound level
dbh	diameter at breast height
du/ac	dwelling units per acre
DTSC	California Environmental Protection Agency's Department of Toxic Substances Control
DWR	Department of Water Resources
ECSTP	Erosion Control and Sediment Transport Plan
EFZ	Earthquake Fault Zone
F	Fahrenheit
FAA	Federal Aviation Administration
FESA	Federal Endangered Species Act
FHA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gases
GIS	Geographic Information System
GLO	General Land Office
H_2S	hydrogen sulfide

Acronym/ Abbreviation	Definition
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
kVA	kilovolt-ampere
kV	kilovolt
L_{eq}	energy equivalent sound level
L_{dn}	day-night equivalent noise level
LI	Light Industrial
LIRP	Local Integrated Resource Planning
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
mph	miles per hour
MRZ	mineral resource zone
$MTCO_2e/yr$	metric tons of CO_2e per year
MVA	megavolt-ampere
MW	megawatt
NAHC	California Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCCP	Natural Communities Conservation Plan
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NPS	National Park Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center of the California Historical Resources Information System
NWPT	Northwestern pond turtle
O_3	ozone

Acronym/ Abbreviation	Definition
OPR	Office of Planning and Research
Pb	lead
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	Particulate matter with a diameter less than or equal to 2.5 microns
PM_{10}	Particulate matter less than 10 microns in equivalent diameter
ppm	parts per million
PRC	Public Resources Code
PTC	Permit to Construct
ROG	reactive organic gas
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SF_6	sulfur hexafluoride gas
SO_2	sulfur dioxide
SPCC	Spill Prevention Countermeasure and Control
SWPPP	Stormwater Pollution Prevention Plan
TAMC	Transportation Agency of Monterey County
TMDL	Total maximum daily loads
TSCA	Toxic Substance Control Act
TSP	Tubular Steel Pole
UBC	Uniform Building Code
URBEMIS	Urban Emmisions
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
VP	vantage point
VRP	visibility reducing particles

Crazy Horse Canyon Switching Station
Index to CPUC PEA Requirements

CPUC Requirement	PEA Section Number
Cover Sheet	
Chapter 1: PEA Summary	
1. The major conclusions of the PEA	Executive Summary
2. Any areas of controversy	Not applicable to this project
3. Any major issues that must be resolved including the choice among reasonably feasible alternatives and mitigation measures, if any;	2.0 Alternatives Analysis
4. Description of inter-agency coordination, if any; and	6.3.1 (Discussion of USACE site visit), 6.3.2.4.1 (Footnote discusses conversation with CDFG)
5. Description of public outreach efforts, if any.	1.5.9 , Attachment A: Letter from the County of Monterey
Chapter 2: Project Purpose and Need and Objectives (Note: This information is included in the Project Description)	
2.1 Overview Explanation of the objective(s) and/or Purpose and Need for implementing the Proposed Project.	1.4
2.2 Project Objectives Analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of project objectives which will aid any appropriate CEQA alternatives screening process.	1.3.1, 1.4, 2.0 Alternatives Analysis

CPUC Requirement	PEA Section Number
Chapter 3: Project Description	1.0
3.1 Project Location	1.2
1. Geographical Location: County, City (provide project location map(s)).	1.2
2. General Description of Land Uses within the project site (e.g., residential, commercial, agricultural, recreation, traverses vineyards, farms, open space, number of stream crossings, etc.).	1.2
3. Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights of way (ROW) or requires new ROW. Give the approximate area of the property or the length of the project that is in an existing ROW or which requires new ROWs.	1.9
3.2 Existing System	1.3
1. Describe the local system to which the Proposed Project relates; include all relevant information about substations, transmission lines and distribution circuits. ***Note: regional system maps would remain confidential for security reasons.***	1.3
2. Provide a schematic diagram and map of the existing system.	Figure 1-3a: Existing 115 kV Power Line System as of 2010
3. Provide a schematic diagram that illustrates the system as it would be configured with implementation of the Proposed Project.	Figure 1-3b: 115 kV Power Line System Planned for 2013
3.3 Project Objectives (Can refer to Chapter 2, Project Purpose and Need, if already described there.)	1.4.1
3.4 Proposed Project	1.5
1. Describe whole of the Proposed Project. Is it an upgrade, a new line, new substations, etc.?	1.5
2. Describe how the Proposed Project fits into the Regional system. Does it create a loop for reliability, etc.?	1.3.2, 1.4.2
3. Describe all reasonably foreseeable future phases, or other reasonably foreseeable consequences of the Proposed Project.	Not applicable to this project

CPUC Requirement	PEA Section Number
4. Provide capacity increase in MW. If the project does not increase capacity, state it.	1.3 (No capacity increase)
5. Provide GIS (or equivalent) data layers for the Proposed Project preliminary engineering including estimated locations of all physical components of the Proposed Project as well as those related to construction. For physical components, this could include but is not limited to the existing components (e.g., ROW, substation locations, poles, etc.) as well as the proposed pole locations, transmission lines, substations, etc. For elements related to construction include: proposed or likely lay-down areas, work areas at the pole sites, pull and tension sites, access roads (e.g., temporary, permanent, existing, etc.), areas where special construction methods may need to be employed, areas where vegetation removal may occur, areas to be heavily graded, etc. More details about this type of information are provided below. [NOTE: For security reasons, GIS data layers are submitted by PG&E Law Department under confidentiality restrictions.]	For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
3.5 Project Components	1.5
3.5.1 Transmission Line	1.4, 1.5
1. What type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV).	1.4.2, 1.5.2, 1.5.8.1
2. Identify the length of the upgraded alignment, the new alignment, etc.	1.5.2, 1.5.8
3. Would construction require one-for-one pole replacement, new poles, steel poles, etc.?	1.5, 1.5.2
4. Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	Nothing collocated 1.5.2
3.5.2 Poles/Towers: Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed:	

CPUC Requirement	PEA Section Number
1. Unique ID number to match GIS database information. [Law Department prefers that you renumber poles (1, 2, 3, etc.) rather than use existing poles numbers, for security reasons.]	For security reasons, Unique ID numbers for poles located along the power line have not been provided. Available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
2. Structure diagram and, if available, photos of existing structure. Preliminary diagram or "typical" drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., Tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements.	1.5.8 Figure 1-4: Typical Switching Station Layout Figure 1-5: Typical Switching Station Profile Figure 1-6a: Typical 115kV Double Dead-End Tower Figure 1-6b: Typical Tubular Steel Pole Structures
3. Type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice).	1.5, 1.5.2

CPUC Requirement	PEA Section Number
4. For poles, provide "typical" drawings with approximate diameter at the base and the tip; for towers, estimate the width at base and top.	Figure 1-6a: Typical 115kV Double Dead-End Tower Figure 1-6b: Typical Tubular Steel Pole Structures
5. Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area.	1.5.8.1 Figure 1-6a: Typical 115kV Double Dead-End Tower Figure 1-6b: Typical Tubular Steel Pole Structures
6. Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys); make sure to note if any guying would likely be required across a road.	Not applicable to this project
7. If the project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	Not applicable to this project
8. Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features.	1.5.8.1
3.5.3 Conductor Cable	1.5.8.3
3.5.3.1 Above-Ground Installation	1.5.8.3
1. Describe the type of line to be installed on the poles/tower (e.g., single circuit with distribution, double circuit, etc.).	1.5.8.3
2. Describe the number of conductors required to be installed on the poles or tower and how many on each side including applicable engineering design standards.	1.5.8.3
3. Provide the size and type of conductor (e.g., ACSR, non-specular, etc.) and insulator configuration.	1.5.8.3

CPUC Requirement	PEA Section Number
4. Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically) Provide specific information at highways, rivers, or special crossings.	1.5.8.3
5. Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	1.5.8.3
6. Describe if other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc); if so, provide conduit diameter of other infrastructure.	1.5.2 (No other infrastructure collocated)
3.5.3.2 Below-Ground Installation	Not applicable to this project
1. Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables).	Not applicable to this project
2. Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing.	Not applicable to this project
3. Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	Not applicable to this project
3.5.4 Switching Station	
1. Provide "typical" Plan and Profile views of the proposed substation and the existing substation if applicable.	Figure 1-4: Typical Switching Station Layout Figure 1-5: Typical Switching Station Profile
2. Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to: mobile substations, transformers, capacitors, and new lighting.	1.5.1

CPUC Requirement	PEA Section Number
3. Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	Figure 1-4: Typical Switching Station Layout Figure 1-5: Typical Switching Station Profile
4. Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded?	1.9
5. Describe the electrical need area served by the distribution substation.	Not applicable to this project
3.6 Right-of-Way Requirements	1.9
1. Describe the ROW location, ownership, and width. Would existing ROW be used or would new ROW be required?	1.9
2. If new ROW is required, describe how it would be acquired and approximately how much would be required (length and width).	1.9
3. List properties likely to require acquisition.	1.9
3.7 Construction	1.5
3.7.1 For All Projects	1.5
3.7.1.1 Staging Areas	1.5.3
1. Where would the main staging area(s) likely be located?	1.5.3
2. Approximately how large would the main staging area(s) be?	1.5.3
3. Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.).	1.5.3, 1.5.7, 1.5.9
4. Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.).	1.5.3
5. Describe how the staging area would be secured, would a fence be installed? If so, describe the type and extent of the fencing.	1.5.7
6. Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.).	1.5.1
7. Describe any grading activities and/or slope stabilization issues.	1.5.6, 1.5.7

CPUC Requirement	PEA Section Number
3.7.1.2 Work Areas	1.5.3
1. Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.).	1.5.3
2. For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	1.5.3
3. Identify the approximate location of known work areas in the GIS database.	For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
4. How would the work areas likely be accessed (e.g., construction vehicles, walk in, helicopter, etc.)?	1.5.3
5. If any site preparation is likely required, generally describe what and how it would be accomplished.	1.5.7
6. Describe any grading activities and/or slope stabilization issues.	1.5.6, 1.5.7
7. Based on the information provided, describe how the site would be restored.	1.5.11
3.7.1.3 Access Roads and/or Spur Roads	1.5.3, 1.5.6
1. Describe the types of roads that would be used and or would need to be created to implement the Proposed Project. See table below as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access.	1.5.3, 1.5.6
2. For road types that require preparation, describe the methods and equipment that would be used.	1.5.6

CPUC Requirement	PEA Section Number
3. Identify approximate location of all access roads (by type) in the GIS database.	For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
4. Describe any grading activities and/or slope stabilization issues. See table in PEA Checklist as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access	1.5.6
3.7.1.4 Helicopter Access	
1. Identify which proposed poles/towers would be removed and/or installed using a helicopter.	Not applicable to this project.
2. If different types of helicopters are to be used, describe each type (e.g., light, heavy or sky crane) and what activities they will be used for.	1.5.8.3
3. Provide information as to where the helicopters would be staged, where they would refuel, where they would land within the Project site.	1.5.8.3
4. Describe any BMPs that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	Not applicable to this project.
5. Describe flight paths, payloads, hours of operations for known locations and work types.	1.5.8.3
3.7.1.5 Vegetation Clearance	
1. Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.).	1.5.9
2. Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	1.5.9 For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.

CPUC Requirement	PEA Section Number
3. Describe how each type of vegetation removal would be accomplished.	1.5.9
4. For removal of trees, distinguish between tree trimming as required under GO-95D and tree removal.	1.5.9
5. Describe the types and approximate number and size of trees that may need to be removed.	1.5.9, 6.5.3.4
6. Describe the type of equipment typically used.	1.5.9
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	1.10
1. Describe the areas of soil disturbance including estimated total areas, and associated terrain type and slope. List all known permits required. For project sites of less than one acre, outline the best management practices (BMPs) that would be implemented to manage surface runoff. Things to consider include, but are not limited to, the following: • Erosion and Sedimentation BMP's; • Vegetation Removal and Restoration; and/or, • Hazardous Waste and Spill Prevention Plans.	Table 1-2: Permits and Approvals That May Be Required 1.5, 1.5.1, 1.5.3, 1.10, 6.5.3, 6.6.1.5, 6.6.1.6, 10.5.2, 10.6
2. Describe any grading activities and/or slope stabilization issues.	1.5.6, 1.5.7
3. Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed.	1.5.11, 6.6.1,
3.7.1.7 Cleanup and Post-Construction Restoration	1.5.11
1. Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider include, but are not limited to, restoration of the following: Natural drainage patterns; wetlands; vegetation, and other disturbed areas (i.e. staging areas, access roads, etc).	1.5.11, 1,5.12
3.7.2 Transmission Line Construction (Above Ground)	1.5
3.7.2.1 Pull and Tension Sites	1.5.3
1. Provide the general or average distance between pull and tension sites.	1.5.3
2. Provide the area of pull and tension sites, include the estimated length and width.	1.5.3

CPUC Requirement	PEA Section Number
3. According to the preliminary plan, how may pull and tension sites would be required, and where would they be located? Please provide the location information in GIS.	1.5.3 For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions
4. What type of equipment would be required at these sites?	1.5.4
5. If conductor is being replaced, how would it be removed from the site?	1.5.8.3
3.7.2.2 Pole Installation Removal	
1. Describe how the construction crews and their equipment would be transported to and from the pole site location. Provide vehicle type, number of vehicles, and estimated number of trips and hours of operation.	1.5.12 Table 1-1: Typical Construction Equipment
Pole and Foundation Removal	1.5
1. Describe the process of how the poles and foundations would be removed.	1.5.8.2
2. Describe what happens to the hole that the pole was in (i.e., reused or backfilled)?	1.5.8.2
3. If the hole is to be filled, what type of fill would be used, where would it come from?	1.5.8.2
4. Describe any surface restoration that would occur at the pole site?	1.5.8.2
5. Describe how the poles would be removed from the site?	1.5.8.2, 1.5.11
Top Removal If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, please provide the following:	Not applicable to this project
1. Describe the methodology to access and remove the tops of these poles	Not applicable to this project
2. Describe any special methods that would be required to top poles that may be difficult to access, etc	Not applicable to this project
Pole Tower Installation	1.5

CPUC Requirement	PEA Section Number
1. Describe the process of how the new poles/towers would be installed; specifically call out any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers.	1.5.8.1
2. Describe the types of equipment and their use as related to pole/tower installation.	Table 1-1: Typical Construction Equipment
3. Describe actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.).	1.5.8.3
4. Describe what would be done with soil removed from a hole/foundation site.	1.5.8.2
5. For any foundations required, provide description of construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	1.5.8.1
6. Describe briefly how poles/towers and associated hardware are assembled.	1.5.8.1
7. Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off-site and brought in or assembled on site?	1.5.8.1
8. Provide a table of pole/tower installation metrics and associated disturbance area estimates as in PEA Checklist 3.7.2.2	1.5.8.1 Provided in narrative format
3.7.2.3 Conductor/Cable Installation	1.5
1. Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable. Note: graphical representation of the general sequencing is helpful for the reader here.	1.5.8.3
2. Generally describe the conductor/cable splicing process.	Not applicable to this project
3. If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	Not applicable to this project
4. Describe in what areas conductor/cable stringing/installation activities would occur.	1.5.8.3
5. Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing).	Not applicable to this project

CPUC Requirement	PEA Section Number
3.7.3 Transmission Line Construction (Below Ground)	Not applicable to this project
3.7.3.1 Trenching	Not applicable to this project
1. Describe the approximate dimensions of the trench (e.g., depth, width).	Not applicable to this project
2. Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, back hoe to remove, etc.).	Not applicable to this project
3. Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Not applicable to this project
4. Provide off-site disposal location, if known, or describe possible option(s).	Not applicable to this project
5. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill).	Not applicable to this project
6. Describe if dewatering would be anticipated, if so, how the trench would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed.	Not applicable to this project
7. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations.	Not applicable to this project
8. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	Not applicable to this project
9. Describe any standard BMPs that would be implemented.	Not applicable to this project
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	
1. Provide the approximate location of the sending and receiving pits.	Not applicable to this project
2. Provide the length, width and depth of the sending and receiving pits.	Not applicable to this project
3. Describe the methodology of excavating and shoring the pits.	Not applicable to this project
4. Describe the methodology of the trenchless technique.	Not applicable to this project

CPUC Requirement	PEA Section Number
5. Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Not applicable to this project
6. Describe process for safe handling of drilling mud and bore lubricants.	Not applicable to this project
7. Describe process for detecting and avoiding "fracturing-out" during HDD operations.	Not applicable to this project
8. Describe process for avoiding contact between drilling mud/lubricants and stream beds.	Not applicable to this project
9. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill).	Not applicable to this project
10. Describe if dewatering would be anticipated, if so, how the pit would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed.	Not applicable to this project
11. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	Not applicable to this project
12. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	Not applicable to this project
13. Describe any grading activities and/or slope stabilization issues.	Not applicable to this project
14. Describe any standard BMPs that would be implemented.	Not applicable to this project
3.7.4 Switching Station Construction	1.5
1. Describe any earth moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site For both site grading and foundation excavation.	1.5.7
2. Provide a conceptual landscape plan in consultation with the municipality in which the substation is located.	Figures 4-8: Conceptual Landscape Plan
3. Describe any grading activities and/or slope stabilization issues.	1.5.7
4. Describe possible relocation of commercial or residential property, if any.	Not applicable to this project
3.7.5 Construction Workforce and Equipment	1.5
1. Provide the estimated number of construction crew members.	1.5.12

CPUC Requirement	PEA Section Number
2. Describe the crew deployment, would crews work concurrently (i.e., multiple crews at different sites); would they be phased, etc.	1.5.12
3. Describe the different types of activities to be undertaken during construction; the number of crew members for each activity i.e. trenching, grading, etc.; and number and types of equipment expected to be used for said activity. Include a written description of the activity. See example in PEA Checklist 3.7.5.	1.5.12
4. Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment. See example in PEA Checklist 3.7.5.	Table 1-1: Typical Construction Equipment
3.7.6 Construction Schedule	1.6
1. Provide a Preliminary Project Construction Schedule; include contingencies for weather, wildlife closure periods, etc. Include Month Year, or Month Year to Month Year for each. See example in PEA Checklist 3.7.6.	1.6
3.8 Operation and Maintenance	1.7
1. Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.).	1.7.1
2. Describe the general maintenance program of the Proposed Project, include items such as: • Timing of the inspections (i.e., monthly, every July, as needed); • Type of inspection (i.e., aerial inspection, ground inspection); and • Description of how the inspection would be implemented. Things to consider, who/how many crew members; how would they access the site (walk to site, vehicle, ATV); would new access be required; would restoration be required, etc.	1.7.2
3. If additional full time staff would be required for operation and/or maintenance, provide the number and for what purpose.	Not applicable to this project
3.9 Applicant Proposed Measures	
1. If there are measures that the Applicant would propose to be part of the Proposed Project, please include those measures and reference plans or implementation descriptions.	1.10 and within applicable resource chapters 4.0 through 14.0
Chapter 4: Environmental Setting	

CPUC Requirement	PEA Section Number
Note: PG&E has elected to combine Environmental Setting with the impact assessment.	
4.1 Aesthetics	4.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	4.4.1 through 4.4.3
• Local environment (site-specific)	4.4.1
• Regional environment	4.4.1
2. A description of the regulatory environment/context	4.6
• Federal	4.6.1
• State	4.6.2
• Local	4.6.3
4.2 Agriculture Resources	11.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	11.3.3, 11.3.4, Table 11-1: Existing Land Uses
• Local environment (site-specific)	11.3.3, 11.3.4, Table 11-1: Existing Land Uses
• Regional environment	11.3.3, 11.3.4
2. A description of the regulatory environment/context	11.3.1
• Federal	
• State	11.3.1, 11.3.1.1, 11.3.1.2
• Local	11.3.2
4.3 Air Quality	5.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	5.3.2
• Local environment (site-specific)	5.3.2
• Regional environment	5.3.2

CPUC Requirement	PEA Section Number
2. A description of the regulatory environment/context	5.3.1
• Federal	5.3.1.1
• State	5.3.1.2
• Local	5.3.1.3
4.4 Biological Resources	6.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	6.4
• Local environment (site-specific)	6.4
• Regional environment	6.4
2. A description of the regulatory environment/context	6.2
• Federal	6.2.1
• State	6.2.2
• Local	6.2.3
4.5 Cultural Resources	7.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	7.4
• Local environment (site-specific)	7.4
• Regional environment	7.4
2. A description of the regulatory environment/context	7.3
• Federal	None
• State	7.3.1 through 7.3.4
• Local	None
4.6 Geology, Soils and Seismic Potential	8.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	8.4
• Local environment (site-specific)	8.4
• Regional environment	8.4
2. A description of the regulatory environment/context	8.3
• Federal	None

CPUC Requirement	PEA Section Number
• State	8.3
• Local	None
4.7 Hazards and Hazardous Materials	9.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	Not applicable
• Local environment (site-specific)	9.3.2
• Regional environment	9.3.2
2. A description of the regulatory environment/context	9.3.1
• Federal	None
• State	9.3.1
• Local	9.3.1
4.8 Hydrology and Water Quality	10.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	10.4.1 through 10.4.3
• Local environment (site-specific)	10.4.1 through 10.4.3
• Regional environment	10.4.1 through 10.4.3
2. A description of the regulatory environment/context	10.3
• Federal	10.3.1.1 through 10.3.1.3
• State	10.3.1.4 through 10.3.1.6
• Local	None
4.9 Land Use and Planning	11.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	11.3.3 Table 11-1: Existing Land Uses

CPUC Requirement	PEA Section Number
• Local environment (site-specific)	11.3.3 Table 11-1: Existing Land Uses
• Regional environment	11.3.3
2. A description of the regulatory environment/context	11.3.1
• Federal	None
• State	11.3.1
• Local	11.3.2, 11.3.6
4.10 Mineral Resources	8.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	8.4
• Local environment (site-specific)	8.4
• Regional environment	8.4
2. A description of the regulatory environment/context	8.3
• Federal	None
• State	8.3
• Local	None
4.11 Noise	12.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	12.3.2
• Local environment (site-specific)	12.3.2
• Regional environment	12.3.2
2. A description of the regulatory environment/context	12.3.1
• Federal	None
• State	None
• Local	12.3.1
4.12 Population and Housing	13.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	13.3.1 through 13.3.3

CPUC Requirement	PEA Section Number
• Local environment (site-specific)	13.3.1 through 13.3.3
• Regional environment	13.3.1 through 13.3.3
2. A description of the regulatory environment/context	Not applicable to this project
• Federal	Not applicable to this project
• State	Not applicable to this project
• Local	Not applicable to this project
4.13 Public Services	13.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	13.3.1 through 13.3.3
• Local environment (site-specific)	13.3.1 through 13.3.3
• Regional environment	13.3.1 through 13.3.3
2. A description of the regulatory environment/context	Not applicable to this project
• Federal	Not applicable to this project
• State	Not applicable to this project
• Local	Not applicable to this project
4.14 Recreation	11.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	11.3.5 Table 11-1: Existing Land Use
• Local environment (site-specific)	11.3, 11.3.5, Table 11-1: Existing Land Uses
• Regional environment	11.3.5
2. A description of the regulatory environment/context	11.3.1

CPUC Requirement	PEA Section Number
• Federal	None
• State	None
• Local	None
4.15 Transportation and Traffic	14.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	14.3
• Local environment (site-specific)	14.3
• Regional environment	14.3
2. A description of the regulatory environment/context	14.3.1
• Federal	None
• State	None
• Local	None
4.16 Utilities and Public Services	13.0
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	13.3.1 through 13.3.3
• Local environment (site-specific)	13.3.1 through 13.3.3
• Regional environment	13.3.1 through 13.3.3
2. A description of the regulatory environment/context	Not applicable to this project
• Federal	Not applicable to this project
• State	Not applicable to this project
• Local	Not applicable to this project
Chapter 5: Environmental Impact Assessment Summary	3.0
5.1 Aesthetics Provide visual simulations of prominent public view locations, including scenic highways to demonstrate the before and after project implementation. Additional simulations of affected private view locations are highly recommended.	Figures 4-4 through 4-7
5.2 Agriculture Resources Identify the types of agricultural resources affected.	11.4.2.3

CPUC Requirement	PEA Section Number
5.3 Air Quality	5.0
1. Provide supporting calculations / spreadsheets / technical reports that support emission estimates in the PEA.	Attachments B and C
2. Provide documentation of the location and types of sensitive receptors that could be impacted by the project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors are dependent on type of construction activity.	5.4.1
3. Identify Project Green House Gas (GHG) emissions as follows:	
• Quality GHG emissions from a business as usual snapshot. That is, what the GHG emissions will be from the proposed project if no mitigations were used	5.4.2
• Quantify GHG emission reductions from every Applicant Proposed Measure that is implemented. Itemize quantifications and place in a table format	Attachment B
• Identify the net emissions of a project after mitigations have been applied.	Attachment B, Table 5-5
• Calculate and quantify GHG emissions (CO2equivalent) for the project including construction & operation.	Attachment B, Table 5-5, Table 5-7
• Calculate and quantify the GHG reduction based on reduction measures proposed for the project.	Attachment B, Table 5-8
• Propose Applicant Proposed Measures (APM) to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures.	5.5.1.2
• Discuss programs already in place to reduce GHG emissions on a system wide level. This includes Applicant's voluntary compliance with USEPA SF6 reduction program, reductions from energy efficiency, demand response, LTPP, et al.	5.5.2.2
5.4 Biological Resources - In addition to an impacts analysis:	6.0

CPUC Requirement	PEA Section Number
1. Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well.	A copy of this report will be provided to CPUC staff. For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
2. Provide a copy of special status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided.	A copy of this report will be provided to CPUC staff. For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
5.5 Cultural Resources - In addition to an Impacts Analysis:	7.0
1. Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation.	A copy of this report will be provided to CPUC staff.
2. Provide a copy of the records found in the literature search.	A copy of this report will be provided to CPUC staff.
3. Provide a copy of all letters and documentation of Native American consultation.	Attachment D
5.6 Geology, Soils and Seismic Potential - In addition to an impacts analysis:	8.0

CPUC Requirement	PEA Section Number
1. Provide a copy of geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	A copy of this report will be provided to CPUC staff.
5.7 Hazards and Hazardous Materials [Reference and list the documents that apply.] - In addition to an impacts analysis:	9.0
1. Environmental Data Resources report.	A copy of this report will be provided to CPUC staff.
2. Hazardous Substance Control and Emergency Response Plan.	Will be provided separately to the CPUC
3. Health and Safety Plan.	Will be provided separately to the CPUC
4. Worker Environmental Awareness Program (WEAP).	9.5.1.4
5. Describe what chemicals would be used during construction and operation of the Proposed Project. For example: fuels, etc. for construction, naphthalene to treat wood poles before installation.	9.3.3, 9.4.2.2, 9.4.3.1
5.8 Hydrology and Water Quality – In addition to an impacts analysis:	10.0
1. Describe impacts to groundwater quality including increased run-off due to construction of impermeable surfaces, etc.	10.5.2.1, 10.5.3.1
2. Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	10.5.2.2, 10.5.3.2
5.9 Land Use and Planning – In addition to an impacts analysis:	11.0
1. Provide GIS data of all parcels within 300' of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	For security reasons, available GIS data layers will be submitted under PUC Section 583 confidentiality restrictions.
5.10 Mineral Resources - Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	8.0

CPUC Requirement	PEA Section Number
5.11 Noise	12.0
1. Provide long term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, etc.).	12.4
5.12 Population and Housing Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	13.0
5.13 Public Services Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	13.0
5.14 Recreation Data needs already specified under Chapter 3 would generally meet the data needs for this resource area	11.0
5.14 Transportation and Traffic Describe the likely probable routes that are the subject of the traffic analysis.	14.0
1. Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	14.4.2, 14.4.3
2. Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	Will be provided separately to the CPUC
5.16 Utilities and Services Systems	13.0
1. Describe how treated wood poles would be disposed of after removal, if applicable.	Not applicable to this project
5.17 Cumulative Analysis	15.0
1. Provide a list of projects (i.e., past, present and reasonably foreseeable future projects) within the Project Area that the applicant is involved in.	Table 15:1 Planned and Current Projects in the Vicinity of the Project
2. Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project. Agencies to be contacted include but are not limited to: the local planning agency, Caltrans, etc.	Table 15:1 Planned and Current Projects in the Vicinity of the Project
5.18 Growth-Inducing Impacts, If Significant	15.0

CPUC Requirement	PEA Section Number
1. Provide information on the Proposed Project's growth inducing impacts, if any. The information should include, but is not necessarily limited, to the following:	Not applicable to this project
• Any economic or population growth, in the surrounding environment that will directly or indirectly, result from the Proposed Project	15.2.2
• Any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project	15.2.5
• Any obstacles to population growth that the Proposed Project would remove	Not applicable to this project
• 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	Not applicable to this project
Chapter 6: Detailed Discussion of Significant Impacts Note: With implementation of PG&E's APMs, all impacts will be less than significant. Therefore this chapter is not required.	
6.2 Description of Project Alternatives and Impact Analysis	2.0
1. Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project.	2.3, 2.4, 2.5
2. Alternatives considered and described by the Applicant should include, as appropriate:	
a. System or facility alternatives	Not applicable to this project
b. Route alternatives	Not applicable to this project
c. Route variations	Not applicable to this project
d. Alternative locations.	2.3, 2.4, 2.5
3. A description of a "No Project Alternative" should be included.	2.4.4
4. If significant environment effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the project objectives, and are more costly.	2.4

CPUC Requirement	PEA Section Number
6.3 Growth-Inducing Impacts Note: Growth-inducing impacts are addressed in the Impact Assessment	15.0
Information required to analyze the Proposed Project's effects on growth would vary depending on the type of project proposed. Generally, for transmission line projects the discussion would be fairly succinct and focus on the following:	
1. Would the Proposed Project foster economic or population growth, either directly or indirectly, in the surrounding environment?	15.2.2, 15.2.3
2. Would the Proposed Project cause an increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)?	15.2.4, 15.2.5
3. Would the Proposed Project remove obstacles to population growth?	15.2.2
4. Would the Proposed Project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively?	15.2.6
6.4 Applicant Proposed Measures to address GHG Emissions Note: GHG Emissions and PG&E's associated APM's are discussed in the Air Quality chapter	5.5.1.2, 5.5.2.2
See the menu of suggested APM's in PEA Checklist Section 6.4 that applicants can consider. Applicants can and are encouraged to propose other GHG reducing mitigations. Priority is given to on-site and/or nearby mitigation measures. Off-site mitigation measures within California will be considered.	
Chapter 7: Other Process-Related Data Needs	
1. Excel spreadsheet that includes all parcels within 300 feet of any project component with the following data: APN number, owner mailing address, and parcels physical address. [Note: notice of all property owners within 300 feet is required under GO 131-D.]	No other parcels within 300 feet

EXECUTIVE SUMMARY

INTRODUCTION

Pacific Gas and Electric Company (PG&E) proposes to construct and operate the Crazy Horse Canyon Switching Station Project (project) located northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road, north of the City of Salinas in Monterey County (see Figure 1-1 in Chapter 1: Project Description for an overview map of the project area). The proposed Crazy Horse Canyon Switching Station will improve electric service reliability and increase operational flexibility for the central and northern areas of Monterey County and northern San Benito County, including the communities of Hollister, San Juan Bautista, Prunedale, Soledad and Salinas and surrounding areas. The project is needed as soon as possible to prevent interruptions and emergency conditions that result from the lack of operational flexibility.

The project consists of:

- A switching station and related facilities, which include construction and installation of:
    - four 115 kilovolt (kV) dead-end structures,
    - four 115 kV double dead-end structures,
    - twenty capacitor couple voltage transformers and structures,
    - twenty-four 115 kV disconnect switches,
    - sixteen 115 kV bus structures,
    - nine 115 kV circuit breakers,
    - one MPAC building (to house the protection and control systems),
    - one battery building (to provide back-up station power), and
    - one permanent paved access road from San Juan Grade Road to the switching station (approximately 750 feet long).

- Power line reconfiguration, which includes:
    - constructing temporary shoo-fly structures that support the power conductors during circuit reconfiguration, and
    - rearranging the existing electric power circuits by removing four existing lattice steel towers and installing six new lattice steel tower structures and five new tubular steel poles.

Under the existing 115 kV power line arrangement, the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines extend from the Moss Landing Power Plant east toward the site of the

new switching station. At the existing Lagunitas Switch, which is a tower containing switches located on top of the hill approximately 850 feet west of the proposed switching station, the double-circuit lines split, with two circuits (still referred to as the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines) heading north toward the cities of San Juan Bautista and Hollister, and two circuits (also the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines) heading south toward the cities of Salinas and Soledad. The two northern circuits of the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines head north for approximately 7 miles, and then split and extend in different directions as single-circuit lines (the Hollister Nos. 1 and 2 115 kV Power Lines) to Hollister Substation.[1]

The power line reconfiguration will result in the removal of Lagunitas Switch and the extension of all three Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines into the proposed switching station. Under normal operating conditions, the double-circuit lines leading from Moss Landing Power Plant will feed power into the new switching station, where power will then flow north and south, respectively, on the two circuits leading north from the switching station and south from the switching station. The lines will be sectionalized at the switching station, resulting in six new line names: the Moss Landing Nos. 1 and 2 115 kV Power Lines, the Salinas-Soledad Nos. 1 and 2 115 kV Power Lines, and the Hollister Nos. 1 and 2 115 kV Power Lines.

Section 1.5 of Chapter 1: Project Description provides a complete description of the project and the facilities to be constructed.

This Proponent's Environmental Assessment (PEA) evaluates the potential impacts that could result from construction and operation of the project. Key environmental issues evaluated include:

- Potential impacts to biological resources (e.g., nearby wetlands, California tiger salamander (*Ambystoma californiense*), and Pajaro manzanita (*Arctostaphylos pajaroensis*))

- Potential visual impacts in scenic areas

- Potential impacts to hydrological resources (e.g., nearby wetlands and water bodies)

As detailed in Chapter 1: Project Description, PG&E's project design includes applicant proposed measures (APMs) to avoid project impacts or reduce impacts to a less than significant level.

As required by the California Public Utilities Commission (CPUC), the California Environmental Quality Act (CEQA) Initial Study Checklist from Appendix G of the CEQA Guidelines was used as the format for describing potential project impacts. Chapter 1: Project

[1] A separate project, the Hollister 115 kV Power Line Reconductoring Project, is currently being permitted before the CPUC. That project will reconductor the 7 miles of the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines extending north from Lagunitas Switch, and will rebuild one of the single-circuit Hollister power lines – the Hollister No. 1 115 kV Power Line - into a double-circuit line.

Description provides a detailed discussion of the project, its purpose, and need. Chapter 2: Alternatives Analysis provides an explanation of the siting study and an analysis of the alternatives that were considered before selecting the proposed project. The CEQA checklist in Chapter 3: Environmental Impact Assessment Summary provides a summary of all potential impacts likely to result from the project. Chapters 4 through 15 of this PEA demonstrate how all project impacts can either be avoided or are less than significant through implementation of PG&E's avoidance and protection measures.

In accordance with CPUC General Order 131-D (GO 131-D), PG&E is submitting this PEA in support of its application for a Permit to Construct (PTC) for the project. The CPUC's PEA "Working Draft Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects" was used to produce this report. Because all project impacts are less than significant, it is anticipated that the CPUC will be able to prepare a Mitigated Negative Declaration for its review of this project pursuant to CEQA. After permits are obtained, construction is expected to take approximately 18 months to complete. PG&E seeks to have the project in operation by December 2012.

1.0 PROJECT DESCRIPTION

1.1 PROJECT OVERVIEW

Pacific Gas and Electric Company (PG&E) proposes to construct and operate the Crazy Horse Canyon Switching Station Project (project). The project is located northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road, north of the City of Salinas in Monterey County (see Figure 1-1). The existing Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kilovolt (kV) Power Lines extend to the project area from the Moss Landing Power Plant, and split at the existing Lagunitas Switch, located about 850 feet west of the proposed switching station. The Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines extend north from Lagunitas Switch to serve San Jan Bautista and Hollister (feeding the Hollister Nos. 1 and 2 115 kV Power Lines) and south from Lagunitas Switch to serve Salinas and Soledad (see Figure 1-2a). The Lagunitas Switch will be removed once the Crazy Horse Canyon Switching Station Project is operational, and the 115 kV lines that enter and leave the new switching station will be sectionalized and renamed (see Figure 1-2b). No new power lines are being constructed. Monterey County supports the project and participated in selection of the site. Section 1.5 provides a complete description of the project and the facilities to be constructed.

1.2 PROJECT LOCATION AND REGIONAL CONTEXT

The project is located in Monterey County, north of the City of Salinas (see Figure 1-1). It is approximately 0.5 mile northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road in a valley between two hill crests within active pastureland. The existing convergence of the PG&E 115 kV power lines (all currently part of the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines) is on a ridgetop located west of the proposed switching station site. Both Crazy Horse Canyon Road and San Juan Grade Road are located on each side of the ridge.

Agriculture is the dominant land use in the project area. A school is located on the west side of San Juan Grade Road, approximately 400 feet south of the intersection of Crazy Horse Canyon Road and San Juan Grade Road, and approximately 2,900 feet south of the boundary of the proposed switching station. The closest residences are on the south side of San Juan Grade Road, approximately 1,200 feet south of the boundary of the proposed switching station.

1.3 EXISTING REGIONAL ELECTRIC SYSTEM

1.3.1 Background

A switching station acts as a "network station" in the context of the larger electrical transmission system. A network station in a transmission system does not increase capacity, but connects together several different transmission lines into a common bus, which enables more "source" lines to supply local distribution substations. With a network station, an automated control system allows PG&E to seamlessly switch load from one line to another in the event of scheduled maintenance or an unanticipated outage on one of the lines. A network station "sectionalizes" long power lines into shorter sections. By sectionalizing lines, impacts from

outages are experienced by fewer customers, and some outages will not impact any customers. Construction of a network station gives PG&E a more reliable and robust transmission system configuration in the region. It also provides system operators more speed and flexibility by simplifying switching through automation. This capability does not currently exist along the power lines that serve this area of Monterey and San Benito Counties.

1.3.2 Transmission System

PG&E's existing regional transmission system consists of 500 kV, 230 kV, 115 kV and 60 kV lines. Moss Landing Power Plant is the primary electrical generation source for the region. The location of the proposed switching station is near the existing Lagunitas Switch, where the existing Moss Landing – Salinas – Soledad 115 kV Power Lines come from Moss Landing Power Plant and split north and south as two, double-circuit 115 kV lines. It is also near the crossing of two 230 kV transmission lines and one 60 kV power line. While the immediate need for the proposed switching station is to provide improved reliability for customers served from the 115 kV lines, this location provides future opportunities for integration of the adjacent 60 kV and 230 kV systems into the 115 kV system. In June 2009, the California Independent System Operator (CAISO) approved the PG&E Watsonville Voltage Conversion Project, which will convert the adjacent 60 kV power line to 115 kV and route it through Crazy Horse Canyon Switching Station; construction is anticipated in 2013-2014, depending on project planning and permitting.

The existing circuits of the Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines provide power from Moss Landing Power Plant to central and northern Monterey County and northern San Benito County, including several large communities in the area. These lines are the sole source of power to Prunedale, Hollister, San Juan Bautista and Soledad, and supply sections of the City of Salinas.

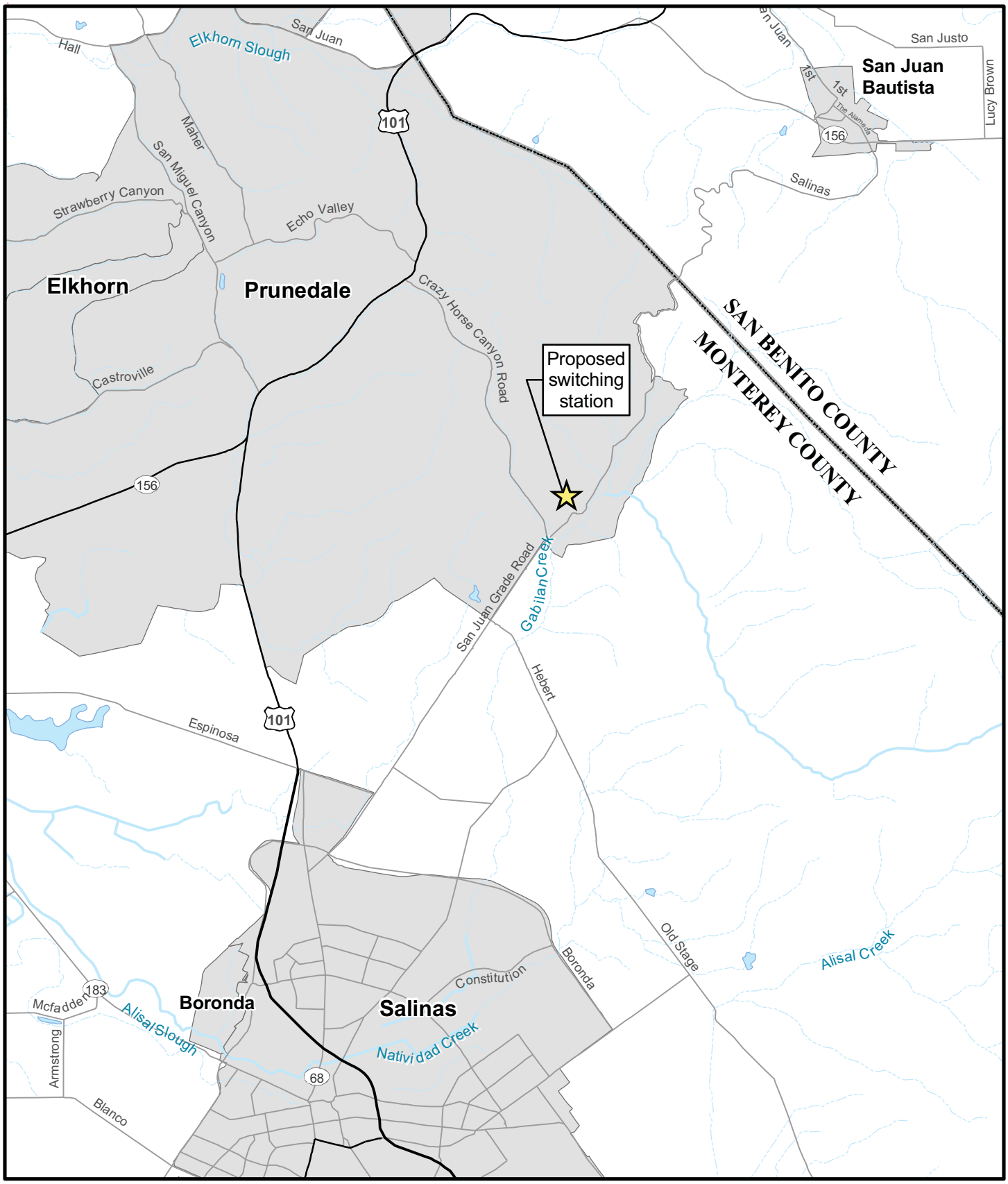
1.4 PROJECT PURPOSE AND NEED

1.4.1 Project Objectives

The basic objectives of the project are as follows:

- **Improve Transmission Reliability:** The switching station should be located and designed to allow PG&E to quickly detect power outages on existing 115 kV lines, and quickly and efficiently adjust the system's operating parameters in order to restore service in a timely manner.

- **Increase Operational Flexibility:** The switching station should be located and designed to allow PG&E to re-route power on existing 115 kV lines in order to serve existing customers while also performing required routine or emergency maintenance on lines connected to the station.



Pacific Gas and Electric Company™
WE DELIVER ENERGY™

Figure 1-1
Project Overview Map
Crazy Horse Canyon Switching Station

N

0 0.5 1 2 Miles

Scale = 1:100,000

Proposed switching station
Existing transmission or power line
Moss Landing-Salinas-Soledad 115 kV power line
Existing power line to be removed
Direction of flow

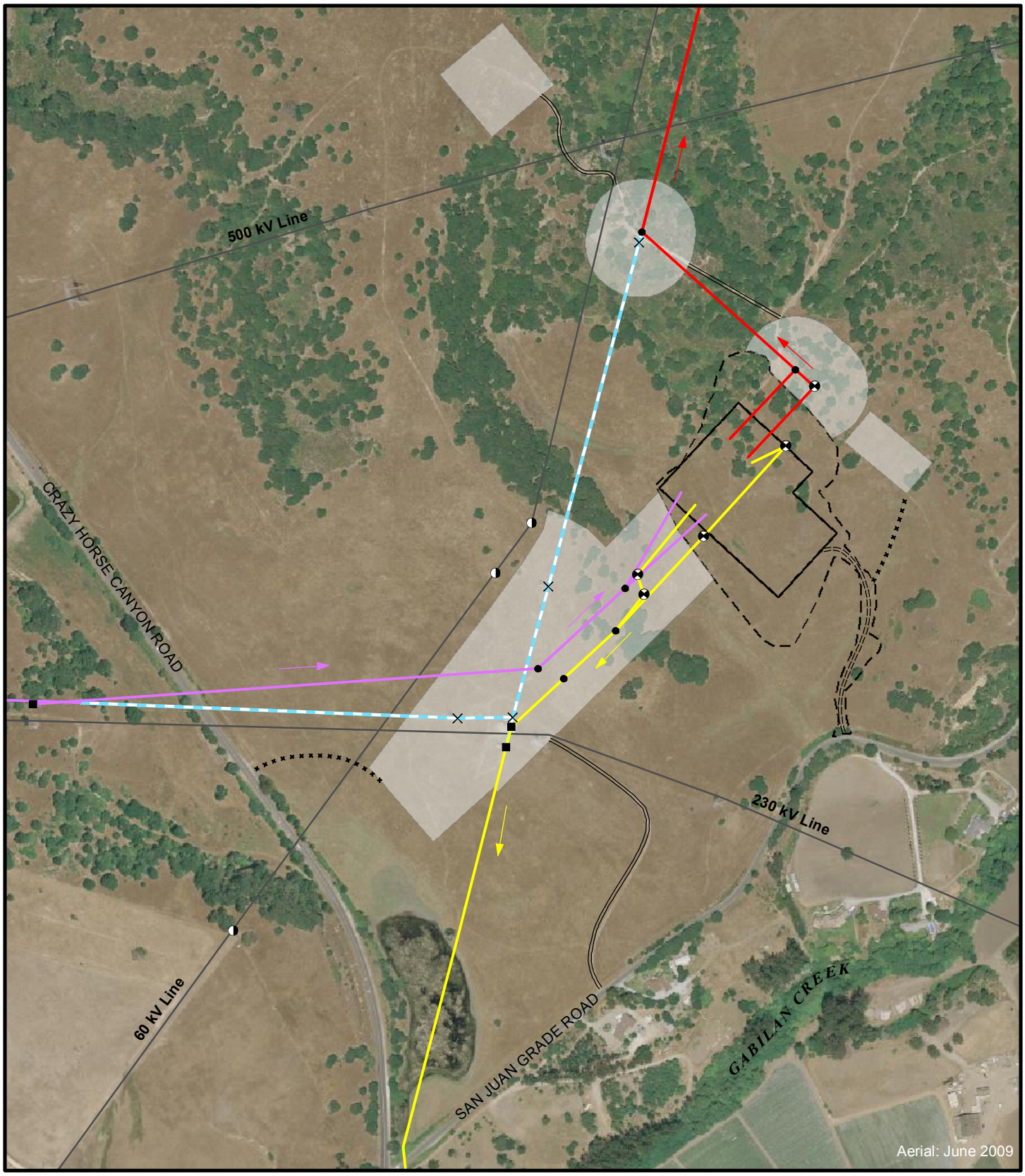
Figure 1-2a
Current Site Aerial
Crazy Horse Canyon Switching Station

N

PG&E

0 250 500 Feet

Scale = 1:6,000



Proposed switching station
Grade and fill boundary
Existing tower
Tower to be removed
New tower location
Existing wood pole(s)
New TSP location

Reconfigured power lines
(arrows show direction of flow)
Crazy Horse Canyon-Hollister Nos. 1 & 2
Crazy Horse Canyon-Salinas-Soledad Nos. 1 & 2
Moss Landing-Crazy Horse Canyon Nos. 1 & 2

Power line to be removed
Existing transmission or power line
Existing access road
New Access Road
Temporary Access Road
Temporary workspace

Figure 1-2b
Proposed Switching Station Aerial Map
Crazy Horse Canyon Switching Station

N

PG&E

0 250 500 Feet

Scale = 1:6,000

1.4.2 Project Need

The basis for PG&E's conclusion that the Crazy Horse Canyon Switching Station Project is needed is beyond the scope of this Permit-to-Construct (PTC) application (see, for example Assigned Commissioner's Ruling dated October 16, 2002, A.01-07-004, p. 5 ["the need for the project is outside the scope of this [Atlantic-Del Mar PTC] proceeding"]; D.94-06-014, 55 CPUC 2d 87, 92 [PTC review "focuses solely on environmental concerns, unlike the CPCN process which considers the need for and economic cost of a proposed facility"]; GO 131-D, Section IX.B.1.f ["an application for a permit to construct need not include...a detailed analysis of purpose and necessity"]). Nonetheless, PG&E provides the following discussion of the purpose and need for the project for informational purposes.

The proposed Crazy Horse Canyon Switching Station will improve electric service reliability and increase operational flexibility for the central and northern areas of Monterey County and northern San Benito County, including the communities of Hollister, San Juan Bautista, Prunedale, Soledad and Salinas and surrounding areas.

The existing, double-circuit Moss Landing-Salinas-Soledad 115 kV Power Lines (which split north and south at Lagunitas Switch and feed the existing Hollister Nos. 1 and 2 115 kV Power Lines) span more than 55 miles and are the primary sources of power for the communities of Hollister, San Juan Bautista, Prunedale, Soledad, and sections of the City of Salinas (see Figure 1-3a). These power lines have had reliability issues due to their long length and the terrain over which the lines are located. Since there is no transmission network station between Moss Landing and Salinas, distribution substation connections into the 115 kV lines in Hollister and Prunedale are split between the two lines, with over 10,000 customers served by each line. Due to the electrical configuration of the lines, customers are served by a single tap connection off of each line, with an automatic transfer scheme to switch service to the other line should their primary power source be interrupted. A notable disadvantage of a tap connection off of a single line is that the automatic transfer scheme requires a several-second outage while the load is switched to the other line. To improve the transmission capacity and reliability of the lines serving Hollister and San Juan Batista, PG&E submitted an application for a Permit To Construct the Hollister 115 kV Power Line Reconductoring Project to the CPUC in November 2009 to reconductor an approximately 7-mile long segment of the Moss Landing-Salinas-Soledad 115 kV Power Lines as well as an approximately 9-mile section of the Hollister No. 1 115 kV Power Line that will be rebuilt as a double-circuit line. Construction of this project is scheduled for the summer of 2012 and will include replacing the existing double-circuit lattice tower on the northern segment of the Moss Landing-Salinas-Soledad 115 kV Power Line that is within the area of the Crazy Horse Canyon Switching Station Project.

To serve increasing demand in San Juan Batista and San Benito County, PG&E expects to connect the San Benito Substation (2009 Advice Letter 3533-E, part of the new Earthbound Farms Project) to these lines near San Juan Bautista in 2011. PG&E also anticipates that a second distribution substation, Natividad Substation, will be needed in

the 115 kV system north of Salinas sometime after 2013, depending on population growth in the area and permitting considerations. Depending on regional growth, additional substations may be needed before 2020. Without a switching station, these new substations would be supplied by a single tap connection.

The Crazy Horse Canyon Switching Station will sectionalize the two, long circuits of the Moss Landing-Salinas-Soledad 115 kV Power Lines (including the Hollister Nos. 1 and 2 Power Lines that tap off of these circuits to the north) into six 115 kV circuits and will act as a network station in this area. This allows the substations that are fed by these lines to be supplied by two lines rather than a single tap connection. Moreover, an outage on one of the six circuits will not affect the entire line. Currently, when an outage occurs on either circuit, the entire 55-mile line must be de-energized. After the project is built, the station will "isolate" the more than 25,000 customers in Hollister, San Juan Bautista and Prunedale from line outages near Soledad, while keeping both Moss Landing circuits operational and supplying those communities (see Figure 1-3b).

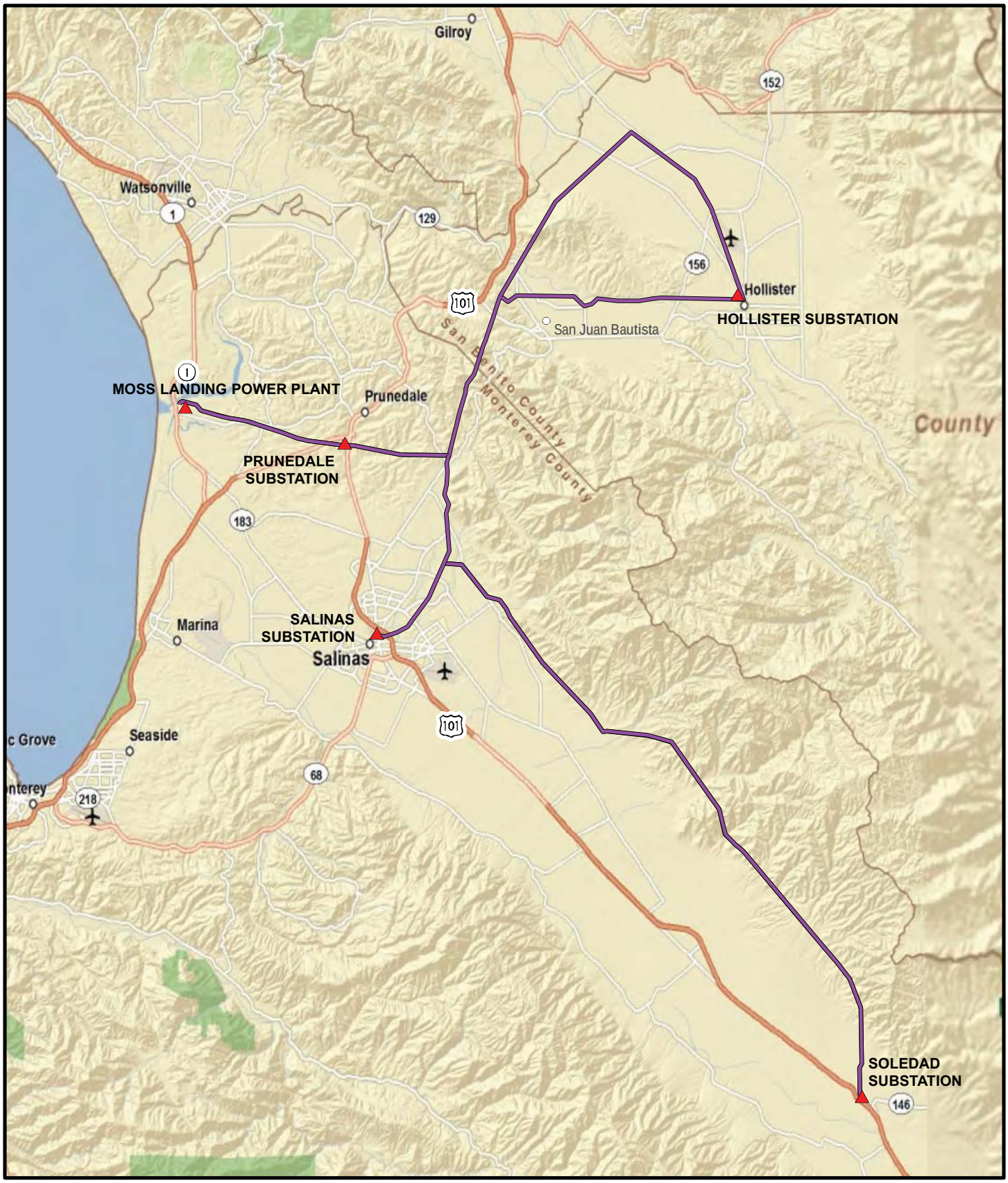
There are no distribution or communication facilities located on the power lines that would be tied into the switching station.

1.5 PROJECT FACILITIES

PG&E proposes to construct and operate a switching station and associated power line modifications. The two major project components include:

- The switching station and related facilities, which include construction and installation of:

    - four 115 kV dead-end structures,
    - four 115 kV double dead-end structures,
    - twenty capacitor couple voltage transformers and structures,
    - twenty-four 115 kV disconnect switches,
    - sixteen 115 kV bus structures,
    - nine 115 kV circuit breakers,
    - one MPAC building (to house the protection and control systems),
    - one battery building (to provide back-up station power), and
    - one permanent paved access road from San Juan Grade Road to the switching station (approximately 750 feet long).



Substation/Power plant

115 kV Power Line

Data Sources: TRC Solutions, PG&E, ESRI

Figure 1-3a
Existing 115 kV Power Line System as of 2010
Crazy Horse Canyon Switching Station

0 2.5 5 Miles

N

Substation
Switching station
115 kV Power Line

Data Sources: TRC Solutions, PG&E, ESRI

Figure 1-3b
115 kV Power Line System Planned for 2013
Crazy Horse Canyon Switching Station

0 2.5 5 Miles

N

- Power line reconfiguration, which includes:

    - constructing temporary shoo-fly structures that support the power conductors during project construction, and
    - rearranging the existing electric power circuits by removing four existing lattice steel towers and installing six new lattice steel tower structures and five new tubular steel poles.

1.5.1 Switching Station

Due to the slope of the proposed site, constructing of the switching station will require establishing a 5.2-acre flat pad to accommodate both the switching station facilities and the temporary construction work area. PG&E will install related electric equipment at the station, including 115 kV disconnect switches, instrument transformers, protective relaying, metering and control equipment, remote supervisory control and data acquisition equipment, telemetering equipment, an auxiliary alternating current and direct current power system, an electric grounding system, and underground conduits or trench systems. The unmanned switching station will have automated features and remote control capabilities. A typical switching station layout is provided in Figure 1-4 and a corresponding profile of a typical switching station is provided in Figure 1-5.

PG&E will install a Modular Protection Automation Control (MPAC) building to house sensitive recording and communication equipment that requires weather protection. The building will house the controls and relays for the 115 kV lines and circuit breakers. It will be approximately 65 feet long, 15 feet wide, 11 feet high, and covered in steel sheeting with a sloped roof. This structure and all the equipment in the switching station will be a non-reflective neutral gray color. For security, an 8-foot-tall fence consisting of 7-foot chain link fence with green slats, as requested by the County, topped with 1 foot of barbwire (6 rows) will enclose the station.

Construction and station operations power will be provided by a new 12 kV wood pole distribution line extending to the north side of the station from an existing distribution line on San Juan Grade Road.

A dedicated telephone line will be used for communication with PG&E's control system in lieu of microwave or radio antennae. The phone line will be strung along the wood pole electric distribution line into the site from an existing AT&T line; the phone line will extend underground from the last pole outside the station fence. Within the station, all telecommunication equipment will be located within conduits, switchgear enclosures, and pull boxes. Additional communication capabilities will be supported by a tie-in to a fiber optic system currently installed on the existing power delivery infrastructure.

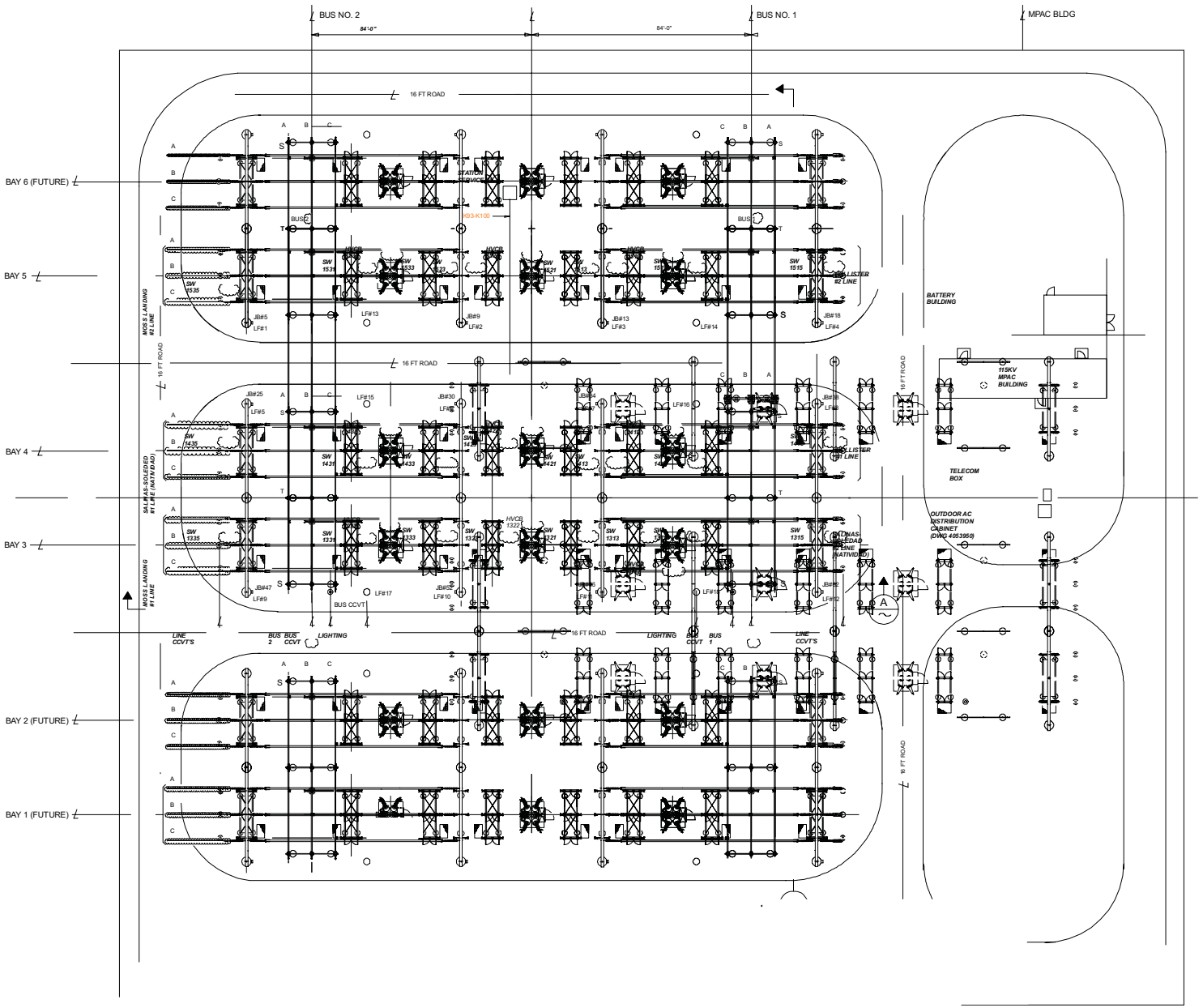
Security lighting for the station will consist of non-glare sodium vapor lamps. Lighting fixtures will be located and designed to avoid casting light or glare toward off-site locations. The light standards will be approximately 10 feet high, hot-dipped galvanized steel posts, erected on bus structures and around the perimeter of the switching station.

More information on the appearance of the switching station and landscaping, including a visual simulation of the project, is included in Chapter 4: Aesthetics.

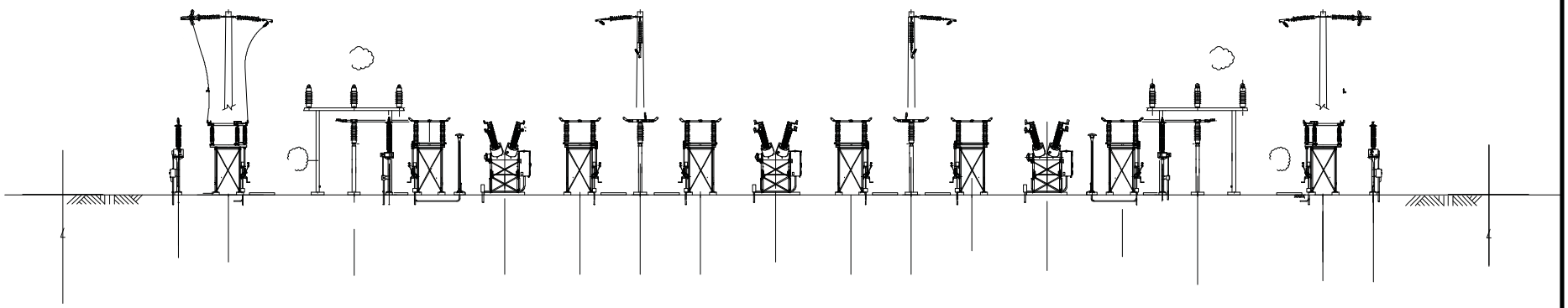
1.5.2 Power Line Reconfiguration

Rearranging the existing electric power circuits will require installing six new lattice steel tower structures and five new tubular steel poles, and removing four lattice steel towers. The lattice steel towers will be approximately 78 to 125 feet tall, and the tubular steel poles will be approximately 60 to 95 feet tall. A typical 115 kV double dead-end tower structure and a typical tubular steel pole structure are depicted in Figures 1-6a and 1-6b, respectively.

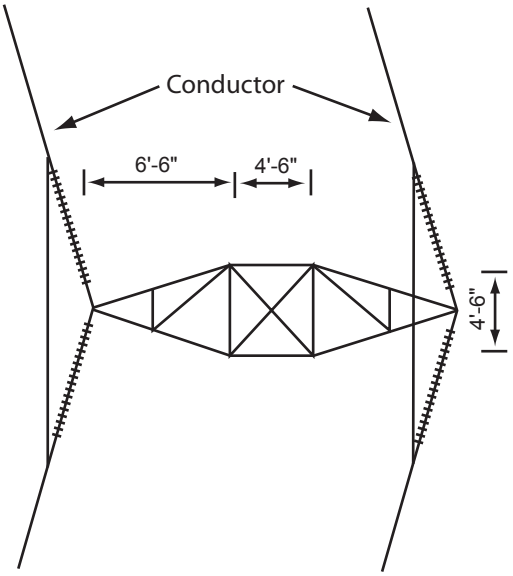
The existing Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines extend to the project area from the Moss Landing Power Plant and split at the existing Lagunitas Switch, located about 850 feet west of the proposed switching station. The Moss Landing-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines extend north from Lagunitas Switch to serve San Jan Bautista and Hollister (feeding the Hollister Nos. 1 and 2 115 kV Power Lines) and south from Lagunitas Switch to serve Salinas and Soledad. The Lagunitas Switch consists of a single lattice steel tower with manual mechanical disconnect switches. The power line reconfiguration will result in the removal of this switch tower and the extension of the double-circuit power lines approximately 850 feet east from the ridgetop into the proposed switching station. No new lines will be added; the lines will enter and exit the new switching station the same way they met at the Lagunitas Switch, but they will be sectionalized at the switching station so that they operate as six independent circuits. Two of the six circuits (the Moss Landing-Crazy Horse Nos. 1 and 2 115 kV Power Lines) will enter the switching station from Moss Landing Power Plant. Two circuits (the Crazy Horse Canyon-Hollister Nos. 1 and 2 115 kV Power Lines) will continue north of the switching station, connecting with the existing tower structure approximately 1,400 feet north of the switching station. Two circuits (the Crazy Horse Canyon-Salinas-Soledad Nos. 1 and 2 115 kV Power Lines) will continue to the south, connecting with the existing tower structure near the ridgetop, approximately 1,500 feet from the switching station. There are no other lines or utilities collocated on the towers being replaced.



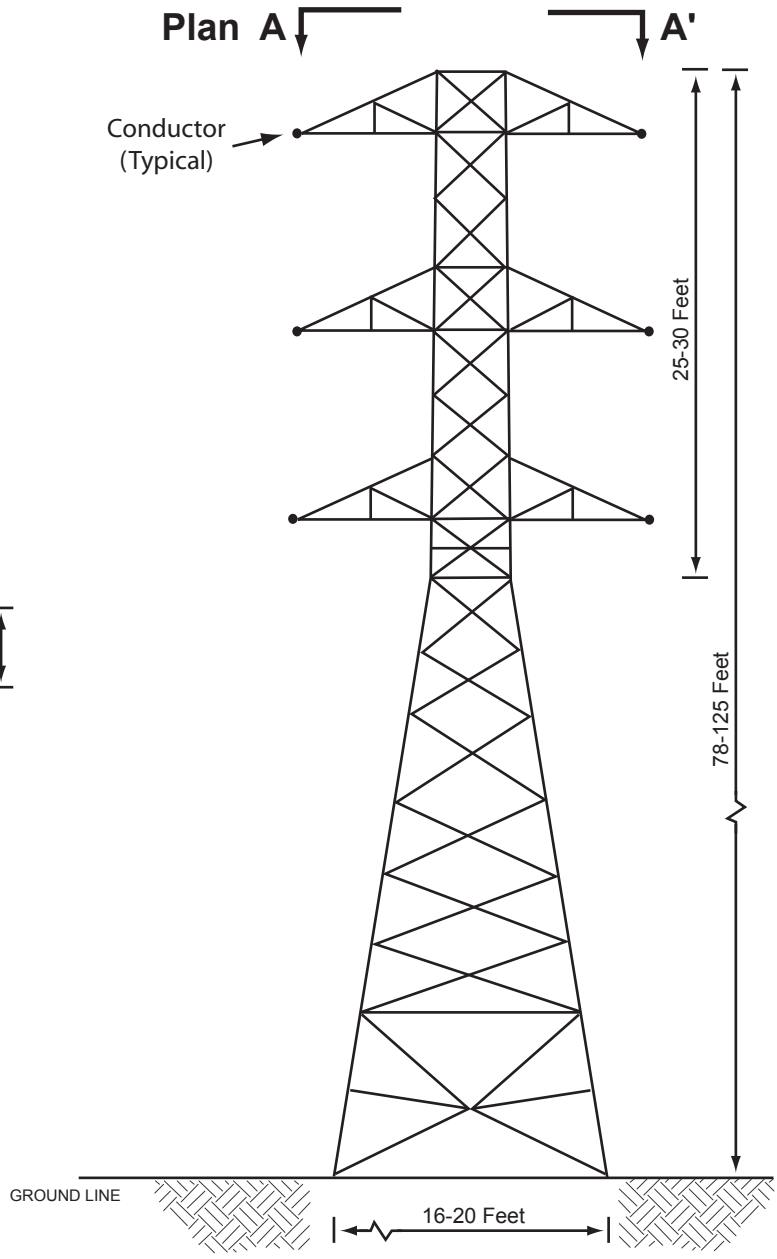
NOT TO SCALE	Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.	**Figure 1-4** Typical Switching Station Layout *Crazy Horse Canyon Switching Station*



NOT TO SCALE	Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.	**Figure 1-5** Typical Switching Station Profile *Crazy Horse Canyon Switching Station*



Plan View



Profile View

Figure 1-6a: Typical 115kV Double Dead-End Tower
Crazy Horse Switching Station Project

Pacific Gas and Electric Company®

Not to Scale

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

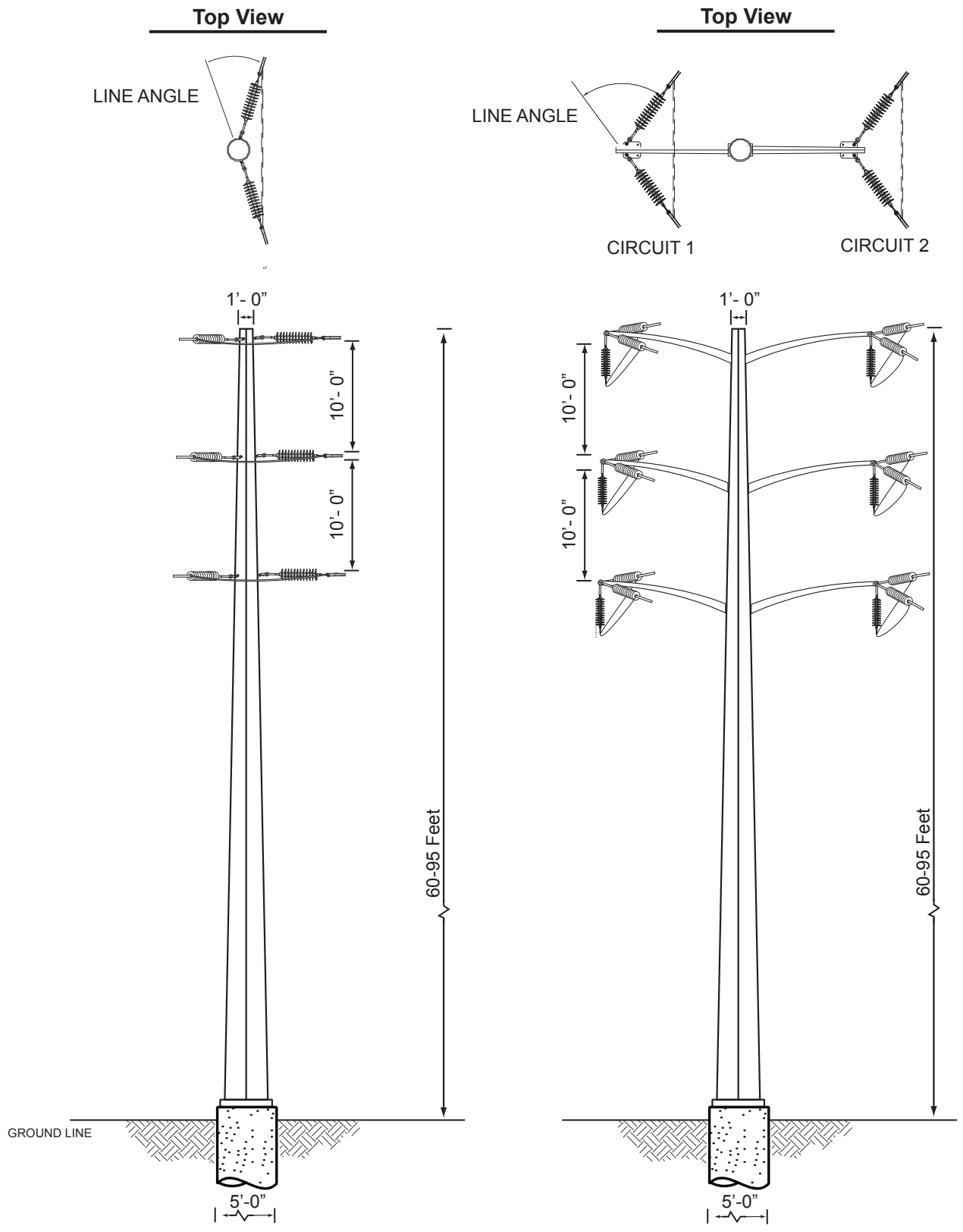


Figure 1-6b: Typical Tubular Steel Pole Structures
Crazy Horse Canyon Switching Station Project

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

Pacific Gas and Electric Company®

Not to Scale

1.5.3 Access and Construction Work Areas

During construction, access to the switching station and power line reconfiguration work areas will be via San Juan Grade Road and Crazy Horse Canyon Road. Existing access to the switching station site is provided through an existing gate. PG&E will construct a 16-foot-wide permanent access road, approximately 750 feet in length**,** from San Juan Grade Road to the switching station. Access to the power line reconfiguration work area will be through an existing gate and twin-track road currently used by the rancher for farming and by PG&E to access the Lagunitas Switch. Access to two of the temporary pull sites will require traversing approximately 30 feet of pastureland from Crazy Horse Canyon Road to a 2.0-acre temporary pull site, and from the new permanent access road to a 1.0-acre temporary pull site. A third 2.0-acre pull site will be located northwest of new tower location 0/4. It will be accessed by an existing dirt road. Work areas around the lattice towers to be removed, and the new towers and tubular steel poles to be installed, will each require a 200-foot radius work space.

Parking, lay down, and staging for construction materials and equipment at the switching station site will occupy the eastern portion of the graded pad. Construction work areas for the power line reconfiguration will consist of a 50-foot-wide strip along the proposed alignments, and a 200-foot radius around each tower or tubular steel pole location for installation or removal activities. In addition, conductor pull and tension sites for the reconfiguration will be approximately 150 feet by 300 feet in size or 300 feet by 300 feet in size depending on their location, as a larger area is needed to work around trees.

1.5.4 Typical Construction Equipment

Typical construction equipment and machinery that will be used during construction of the switching station, access road, power lines, and distribution line are listed in Table 1-1.

Table 1-1: Typical Construction Equipment

Equipment	Use
1/2-ton pickup trucks	Transport construction personnel
3/4-ton pickup trucks	Transport construction personnel
Crew-cab trucks (3/4 to 1 ton)	Transport construction personnel
Road grader, six wheel	Grade road and finish site grading
Elevating Scraper	Rough site grading
D5 and D9 Bulldozer	Rough and finish site grading
Dozer with sheepsfoot compactor	Grading/shaping/initial compaction
Powered road roller	Subgrade compaction

Equipment	Use
Skip loader	Move materials
Skid steer	Move materials
Fork lift	Lift/move materials
Water trucks	Dust and fire control
Man lift	Elevate personnel
Motorized asphalt layer	Road construction
Finish road roller	Asphalt lift compaction
Boom truck	All construction activities
2-ton flat bed trucks	Haul materials
Flat-bed boom truck	Haul and unload materials
Dump trucks (5 to 10 ton)	Haul spoil and import materials
Semi-tractor trailer	Haul structure components
Construction trucks and trailers (2 to 60 ton)	Haul materials/equipment
Rigging truck	Haul tools and equipment
15-, 30-, and 80- ton mobile cranes	Erect structures/set buildings
Mechanic truck	Service and repair equipment
Crawler-mounted auger	Excavate foundations
Helicopter	Pull sock line
Truck-mounted digger	Excavate foundations
Track-mounted backhoe	Excavation
Crawler backhoe	Excavate foundations
Puller	Pull conductor wire
Tensioner	Pull conductor wire
Air compressor	Operate air tools
Air tampers	Compact soil around poles
Portable generators	Power tools
Concrete trucks	Transport concrete for foundations
Light trucks	Provide illumination
Fuel trucks	Refuel equipment

Equipment	Use
Aerial lift trucks	String conductor wire

1.5.5 General Construction Sequence

Construction activities will generally occur in the following order:

- Construction of the temporary access road to the switching station pad area, topsoil salvage and rough grading and compaction of the switching station pad
- Construction of the permanent access road
- Fine grading to establish the site drainage and placement of surface gravel
- Installation of the 12 kV distribution service pole line
- Construction of the perimeter security fence, all buswork structures, dead-end switch structures, circuit breakers and building foundations
- Setting the buildings and installing the system control and data acquisition equipment
- Construction of the temporary access roads to pull site locations
- Setting of the temporary shoo-fly poles and transferring the conductors
- Installation of the new lattice steel towers and tubular steel poles and conductor, and removal of the existing towers and conductor and shoo-fly
- High voltage connection and testing
- Asphalting of permanent access road
- Cleanup and landscaping
- Switching station commissioning

1.5.6 Access Road Construction

The access road will be engineered and constructed to withstand heavy equipment for construction and maintenance purposes and will be used on a regular basis throughout construction.

Grading for the access road will include the removal of existing vegetation within the grading limits (a width of up to 100 feet). A 12-foot-wide temporary construction access road will be installed within this area and excess soil generated by the excavation of the station pad will be used to construct the permanent access road. After the permanent access road is complete, the temporary construction access road will be removed and the slope restored. The 16-foot-wide permanent access road (to be covered by asphalt after major construction is completed) will include two 2-foot-wide shoulders and drainage ditches. All cuts and fills will be at a 2:1 slope.

The two pull site locations, for which there is currently not an existing access road, will be accessed cross country along a single route to each site. Equipment will be driven over the existing surface and no grading will occur. These routes will be restored to pre-project conditions after work occurring in the pull sites is completed.

1.5.7 Switching Station Construction

Surveyors will stake the alignment of the access road and establish grading limits, and set grade stakes for the switching station pad. Once the access road is rough graded to the site, site preparation will begin with clearing of vegetation, including grasses, shrubs, trees and other organic material. This vegetation material will be stockpiled within the footprint of the switching station and eventually removed from the site. Topsoil will be stripped, stockpiled, and used for site restoration. Rough grading will commence, cutting into the hillside and placing material on the lower side, approximately balancing the cut and fill. Once the rough grade is achieved and compacted, finish grading and shaping will provide the designed site drainage, and gravel will be spread on the pad surface to create a stable work area for subsequent construction activities. While the engineering design will attempt to balance the cut and fill, some existing soil may not be suitable for the proposed use. In total, it is estimated that approximately 305,000 cubic yards of cut and approximately 302,000 cubic yards of fill will be required to create a level station site. To the extent possible, all cut materials will be reused as fill following suitability testing. Representative samples of excess soil will be collected, analyzed, and profiled for disposal in accordance with all federal, state, and local regulations. Engineered fill material will be imported as needed to accomplish the necessary compaction and final grade.

Grading will be followed by installation of an 8-foot-tall security fence, excavation and installation of the subsurface ground grid and conduit chases, installation of the paved interior roads, and excavation, and forming and pouring of concrete footings and foundations for all the aboveground structures. After the concrete has cured, the aboveground steel structures, circuit breakers, switchgear, buses, dead ends and other electrical equipment, including associated control system hardware, will be installed. Equipment to be placed on slabs or footings will either be bolted or welded securely to meet the appropriate seismic requirements. All metallic structures within the switching station will be connected to the station grounding grid. A final dressing of aggregate totaling approximately 3,200 cubic yards will be spread on all unpaved areas in the switching station to provide an all-weather stable surface for operations and maintenance activities while limiting the amount of impervious surface created in order to minimize site run-off.

1.5.8 Power Line Reconfiguration/Interconnection Construction

Following surveying and staking the foundation locations, the construction for the power line work is divided into three phases: installation of new towers and tubular steel poles, removal of existing towers and conductor, and installation of new conductor. All new towers and poles will be designed with raptor deterrence capabilities and will meet applicable standards regarding raptor safety.

1.5.8.1 Installation of New Towers and Poles

Installation of new lattice steel towers will require boring holes for the four structure leg foundations. Each hole will be approximately 2 feet in diameter and approximately 7.5 to

12.5 feet deep depending on the soil conditions. Workers will place reinforcing steel in each hole along with stub angle steel that will become part of the tower leg itself. Concrete forms that extend 2 or 3 feet above natural ground level will be placed over each hole and concrete will be poured around the reinforcing steel and stub angles up to the top of the form.

The double-circuit lattice steel towers will be assembled at the tower sites. The steel will be delivered to the site and assembled into "panels." The panels will be placed on the foundations and latticed together with strips of steel. Once the first level is complete, another pair of panels will be assembled and bolted on top. These panels will be latticed together and the process will be repeated until the tower is complete. Once assembled completely, crews will install and tighten all bolts, attach insulators to the arm extensions, and prepare the towers and insulators for the conductor-stringing operation. A crane operating pad measuring approximately 60 feet by 60 feet will be established at each tower location with minimal grading necessary to provide a stable surface for the crane and its outriggers. Tower heights will range between approximately 75 and 125 feet above ground level at maximum leg extension with an average height of approximately 100 feet.

Installation of new tubular steel poles will require boring a single foundation hole approximately 5 feet in diameter and 10 to 15 feet deep depending on the soil conditions. Workers will place reinforcing steel in the hole and secure the steel to a bolt assembly plate. Concrete forms that extend 2 or 3 feet above natural ground level will be installed and concrete will be poured around the reinforcing steel up to the level of the bolt assembly plate. The tubular steel poles typically consist of two or three sections, depending on the length or diameter of the pole. The pole base will be lifted by a crane onto the foundation and bolted in place. The crane then will lift the remaining sections and lower them into place. The top section is fitted with arms and insulators prior to being lifted into place. The five poles to be installed will be approximately 60 to 95 feet tall.

1.5.8.2 Removal of Towers

Prior to removing the existing towers, a shoo-fly will be installed to temporarily support the conductors, allowing the lines to remain in service during the reconfiguration process. The shoo-fly will consist of wood poles, fitted with appropriate insulators, installed adjacent to the existing towers. The conductors will be transferred to the shoo-fly poles from the existing towers. Once the conductors are clear of the existing towers, workers will unbolt the tower sections so they can be lifted by a crane and placed on an adjacent work area for dismantling. After all tower sections are removed, the concrete foundations will be removed to about 3 feet below ground and the balance abandoned in place. This will be performed with a backhoe where accessible and with air compressor powered hand tools at any sites where a backhoe cannot reach. The remaining hole will be backfilled to grade with the excavated material.

1.5.8.3 Stringing Conductor

The installation of new structures and reconfiguration of the lines to tie into the switching station will require installation of new conductor on the lines. The new conductor will be 477 KCmil aluminum conductor with steel support (ACSS). There will be 2 circuits of conductor strung along the towers and poles with 3 individual conductors per circuit for a total of 6 conductors. Before conductor installation begins, a temporary clearance structure will be installed to protect the 60 kV line where it crosses under the 115 kV lines. This clearance structure typically consists of one or two poles on either side of the line crossed with a "V" shaped cargo net tensioned between the support structures.

The actual conductor stringing operation will begin with the installation of sheaves or stringing blocks. The sheaves are rollers attached to the cross arm of the supporting structure. The sheaves allow the individual conductor to be pulled through each structure until the conductor is ready to be pulled up to the final tension position.

When the pull and tension equipment is set in place, a sock line (a small cable used to pull in the conductor) will be pulled from tower to tower using a light duty helicopter. The helicopter will be staged and fueled at the 2.0-acre pull site located northwest of the new tower location 0/4, and used over a period of a few days. The hours of operation will be between 7:00 a.m. and 5:30 p.m., and the flight path will occur between the staging area (landing zone) and the various towers and following tower lines within the project area. After the sock line is installed, the conductor will be attached to the sock line and pulled in, or strung, using the tension-stringing method. This involves pulling the conductor through each tower under a controlled tension to keep the conductor above the ground.

After the conductor is pulled into place, sags will be adjusted to a pre-calculated level. The conductor will then be clamped to the end of each insulator hardware assembly as the sheaves are removed. The final step of the conductor installation is to install vibration dampers or other accessories.

It is anticipated that new conductor will be installed on the new structures, and then a clearance will be taken on the affected 115 kV lines so that the new conductor can be pulled to design tension and connected at the nearest existing tower not affected by the reconfiguration. The lowest conductor will be a minimum of 27 feet above the ground, the phase to phase clearance at structures will be approximately 10 feet vertical and 16 feet horizontal, and the approximate spans between poles or towers will range from 100 to 800 feet. The shoo-fly poles and old conductor will be removed when the new installation is complete.

1.5.9 Vegetation Clearing

Vegetation will be cleared in order to facilitate access to the project site and complete the construction of the switching station and associated power line reconfiguration. Vegetation clearing will require both the removal of grasses and shrubs as well as the trimming and removal of larger trees. It is anticipated that access to the project will

require minimal vegetation clearing and will be accomplished primarily using an ASV mower or similar equipment that will allow for subsurface roots and plant materials to remain in place. Some trimming of trees will be required along access roads, and approximately 30 oak trees will need to be removed from the project site; however, oak trees will be trimmed to the extent possible to avoid removal. Four oak trees on San Juan Grade Road in the County's right-of-way will be trimmed as requested by Robert Palomino, Encroachment Inspector, Monterey County. All vegetative materials will be chipped and mulched on site and used during post construction restoration as appropriate. More information on vegetation clearance can be found in Chapter 6: Biological Resources.

1.5.10 Erosion and Sediment Control and Pollution Prevention

PG&E will implement a Stormwater Pollution Prevention Plan (SWPPP) during construction in order to prevent pollution of nearby drainages with sediment or other polluted runoff related to project construction. The plan will outline implementation of Best Management Practices (BMPs) that will include the placement of erosion and sediment controls such as fiber rolls, silt fence, mulch, and seed as appropriate during project construction. In addition, PG&E will prepare and implement a plan to safely store and use any hazardous materials or other potential chemical pollutants during project construction. BMPs will be installed prior to preconstruction vegetation clearing. Further details on erosion and sediment control and pollution prevention can be found in Chapter 9: Hazards and Hazardous Materials and Chapter 10: Hydrology.

1.5.11 Cleanup

Cleanup operations involve final grading to original contours and cleaning up all disturbed areas, including temporary workspaces and the ancillary access roads to the tower reconfiguration work areas and the temporary access road to the switching station. Towers, poles, and conductors removed from the project will be dismantled and taken to appropriate disposal facilities to be reused, recycled, or disposed of properly. PG&E will conduct a final survey to ensure that cleanup activities have been successfully completed. Additionally, landscaping will be conducted as described in the project's Landscape Mitigation Plan as illustrated in Figure 4-8 and described in Section 4.8.3 of Chapter 4: Aesthetics. Irrigation of planted trees and shrubs will be performed using water trucked to the project site until those plants become established.

1.5.12 Construction Workforce

The workforce will vary depending on the activities in progress and the particular phase of construction. During grading for the switching station and road construction, a workforce of approximately 12 workers will be needed over an approximate 4-month period. Following grading, work will take place on the power line reconfiguration involving 8 workers working intermittently for approximately one year. For the first approximately 5 months following grading, 10 workers will be needed for switching station foundation construction. Once foundation work is complete, 8 workers will be required for construction of the aboveground facilities in the switching station for

approximately 4 months. In the final testing and commissioning stages of the project, approximately 10 workers will be onsite. The maximum number of workers onsite at any given time will be approximately 20 workers over a timeframe of approximately 5 months.

1.6 CONSTRUCTION SCHEDULE

Construction is scheduled to begin in July 2011 to meet an in-service date of December 2012. While the proposed switching station and power line construction will require approximately one year of continuous activity, storm events during the rainy season at the end of the proposed construction period could push the in-service date to spring 2013. In order to complete all grading or other construction activities affected by rain before the onset of the rainy season, those activities will need to begin in July, as soon as permits and agency approvals have been granted.

1.7 OPERATIONS AND MAINTENANCE

1.7.1 System Monitoring and Control

Operation of the proposed switching station will initially be controlled from the PG&E Control Center in Moss Landing, but control will eventually be transferred to a PG&E facility in Vacaville as PG&E moves to consolidate its control infrastructure. Station and line alarms will be transmitted by the dedicated phone line to the control center. If an alarm is triggered that requires an onsite visit, personnel will be dispatched from PG&E's local maintenance center in Moss Landing.

1.7.2 Facility Inspection

Regular inspection of equipment and electric lines, support systems, and instrumentation and control is critical for the safe, efficient, and economical operation of the project. All of the equipment and structures within the new switching station will be inspected on an annual basis for corrosion, misalignment, and foundation condition. The inspection will include hardware, insulator keys, and conductors. The power line inspections will not change from those on the existing lines. Annual ground inspections will be performed on poles, anchors, and right-of-way conditions. This inspection will also check conductors and fixtures for corrosion, breaks, broken insulators, and bad splices. Trimming of trees will be conducted in accordance with the CPUC's General Order 95.

Under normal circumstances, the switching station will be controlled remotely, and routine inspections by PG&E personnel will occur on a monthly basis or as needed under emergency conditions. Permanent parking for facility inspections, operations, and maintenance will be entirely within the switching station site or along the access road at the entrance to the switching station.

1.8 REQUIRED APPROVALS

The CPUC is the lead state agency for project review under CEQA. In accordance with CPUC General Order No. 131-D, PG&E is submitting a Proponent's Environmental Assessment (PEA) as part of its application for a PTC. In addition to the PTC, Table 1-2 summarizes the permits from other federal, state, and local agencies that may be needed for the project.

Table 1-2: Permits and Approvals That May Be Required

Permit/Approval	Agency	Jurisdiction/Purpose
Federal Agencies		
Section 7 Consultation (Biological Opinion)	U.S. Fish and Wildlife Service (USFWS)	Federally-listed threatened and endangered species
Clean Water Act Section 404 Nationwide Permit	U.S. Army Corps of Engineers (USACE)	Waters of the U.S. and their tributaries
State Agencies		
Permit to Construct	California Public Utilities Commission (CPUC)	Overall project approval and CEQA review
National Pollutant Discharge Elimination System—General Construction Storm Water Permit	State Water Resources Control Board (SWRCB)	Permit is required for all construction projects that disturb more than 1 acre
Section 401 Water Quality Certification (or waiver thereof)	California Regional Water Quality Control Board, Central Coast Region (RWQCB)	Certification that the project is consistent with state water quality standards
Section 2080.1 Consistency Determination	California Department of Fish and Game (CDFG)	Impacts to state-listed species (if required)
Section 2081(b) Incidental Take Permit for state-listed Species	California Department of Fish and Game (CDFG)	Impacts to state-listed species (if required)
Section 106 Consultation (National Historic Preservation Act)	State Historic Preservation Officer	Consultation with lead federal agency regarding impacts to cultural resources

Permit/Approval	Agency	Jurisdiction/Purpose
Section 1602 Streambed Alteration Agreement	CDFG	Impacts to streambeds as a result of project activities
Local Agencies		
Roadway Encroachment Permit	Monterey County	Ministerial permit to install station access road from public road right-of-way
Welding, Grading, and Building Permits	Monterey County	Ministerial permission to conduct welding, grading, and certain building activities

1.9 RIGHT-OF-WAY ACQUISITION

PG&E has executed a purchase option agreement for 25 acres surrounding the proposed switching station site. The option agreement also includes the use of all anticipated construction work areas associated with the transmission line reconfigurations. Once regulatory approvals are obtained, PG&E will exercise the option and obtain fee title to the switching station site and use of the associated temporary construction work areas.

Land entitlement issues are not part of the regulatory proceeding in which the CPUC is considering whether to grant or deny PG&E's application for a PTC. 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).

1.10 APPLICANT PROPOSED MEASURES

In order to ensure there are no significant impacts associated with the project, PG&E is proposing the following applicant proposed measures (APMs) included in Table 1-3.

Table 1-3: Applicant Proposed Measures

Applicant Proposed Measures
Aesthetics
Construction activities will be kept as clean and inconspicuous as practical. Where practical, construction storage and staging will be screened from close-range residential views.

All disturbed terrain at the switching station site will be restored through recontouring and revegetation using a seed and plant mixture approved by a qualified landscape/ horticultural professional.
Project landscaping will screen views of the new facility and help integrate its appearance with the surrounding landscape setting. Project landscaping will involve the installation informal groupings of native trees and shrubs around the perimeter of the switching station and along San Juan Grade Road in order to provide visual screening.
Non-specular conductors will be used to reduce the potential for new sources of glare. A non-reflective finish will be used for substation equipment to reduce the potential for new sources of glare.
The project will incorporate use of an entry gate design to blend in with the existing rural setting found along on San Juan Grade Road and the general project area.
The project will incorporate a chain link fence that will enclose the graded switching station pad. The fence will include green slats, as requested by the County. The green slats will provide a measure of screening and help reduce the project's potential visibility.
Air Quality
Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil and wind exposure.
Suspend all grading activities during periods of high wind (over 15 miles per hour (mph)).
Apply chemical soil stabilizer on inactive construction areas (defined as disturbed lands within the project area that are unused for at least four consecutive days).
Apply non-toxic soil binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.
Cover all trucks hauling dirt, sand or loose materials.
Plant vegetative ground cover in disturbed areas as soon as possible.
Cover inactive storage piles.
Install wheel washers at the entrance to construction sites for all exiting trucks.
Sweep public roads if visible soil material is carried out from the construction site.
Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours.
The phone number of the MBUAPCD shall be visible to ensure compliance with Rule 402 (nuisance).
Limit the area of earth disturbing activities at any one time.

Identify park-and-ride facilities in the project vicinity and encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.
Minimize unnecessary idling time – less than the 5-minute maximum idling required by law – through application of a "common sense" approach to vehicle use. If a vehicle is not required immediately or continuously for construction activities, its engine will be shut off.
Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later will be registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program, or will meet at a minimum U.S. Environmental Protection Agency (EPA)/CARB Tier 1 engine standards.
Minimize welding and cutting by using compression of mechanical applications where practical and within standards.
Encourage use of natural gas powered vehicles for passenger cars and light duty trucks where feasible and available.
Encourage the recycling of construction waste where feasible.
Incorporate Crazy Horse Canyon Switching Station into PG&E's system-wide SF_6 emission reduction program.
Require that Crazy Horse Canyon Switching Station's breakers have a manufacturer's guaranteed leakage rate of 0.5 percent per year or less for SF_6.
Maintain substation breakers in accordance with PG&E's maintenance guidelines
Comply with CARB Early Action Measures as these policies become effective.
Biological Resources
All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers. Trash containers will be removed from the project area at the end of each working day.
Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas as identified in this document. Off-road parking shall only be permitted in previously identified and designated work areas.

Vehicles will be confined to established roadways and pre-approved access roads, overland routes and access areas. Access routes and temporary work areas will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of work areas, including access roads, will be clearly mapped prior to initiating project construction. Vehicular speeds will be kept to 15 miles per hour (mph) on unpaved roads.
All equipment will be maintained such that there will be no leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down gradient aquatic habitat unless otherwise isolated from habitat. Proper spill prevention and cleanup equipment shall be maintained in all refueling areas.
No pets or firearms will be permitted at the project site.
PG&E will consult with Monterey County regarding BMPs if more than three protected trees will be removed by the project. PG&E will replace removed trees at a one-to-one ratio.
In areas that will be restored following construction of the facility, PG&E will minimize clearing of oaks to only what is required to maintain a safe facility. In these areas, PG&E will endeavor to retain a representative sample of sizes, ages and species of oaks with special emphasis placed on retaining samplings.
An environmental awareness program for all construction and on-site personnel will be conducted by a qualified biologist prior to the beginning of construction activities. Training will include a discussion of APMs being implemented to protect biological resources as well as the terms and conditions of all permits. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed about the presence, life history, and habitat requirements of all special-status species with a potential to be affected within the project area. Training will include information on state and federal laws protecting nesting birds, wetlands, and other water resources. An educational brochure will be produced for construction crews working on the project. The brochure will include color photos of sensitive species as well as a discussion of mitigation measures.

A qualified biological monitor will be on site during all ground-disturbing construction activities in or near sensitive habitats previously identified. The monitor will ensure implementation of and compliance with all APMs. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel as appropriate if construction activities are likely to impact sensitive biological resources. The biological monitor will complete daily logs to document construction activities and environmental compliance. The daily logs will be included in the project report submitted to the appropriate agencies following completion of construction. The biological monitor will be responsible for reporting any capture and relocation, harm, entrapment, or death of a listed species to the USFWS and/or the CDFG and for reporting any permit violations in a timely manner and as indicated in their respective permits.
Sensitive resources identified during pre-construction surveys in the project vicinity will be mapped and clearly marked in the field. Such areas will be avoided during construction to the extent practicable and/or additional measures specific to sensitive species types as described herein and that may be required by the USACE, USFWS, CDFG, and RWQCB permits, will be implemented to avoid or minimize impacts.
PG&E will design the project to avoid the intermittent drainages and seasonal wetlands to the extent practicable. However, where impacts to the drainages and wetlands cannot be avoided PG&E will provide compensation as required by the USACE, USFWS, CDFG, and RWQCB.
Work in aquatic or wetland habitat is limited to the installation of the permanent access road in the wetland located adjacent to San Juan Grade Road. All ground-disturbing work at this location will take place in dry conditions.
PG&E will obtain coverage under the Construction Storm Water Permit Program and implement BMPs for erosion and sediment control.
A SWPPP will be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary for the project. Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, as well as aquatic habitat occupied by sensitive species. Erosion control measures will be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued in the project area until such time that soil stabilization is deemed adequate. Brush or other similar debris material will not be placed within any stream channel or on its banks. No project work activity is planned within the limits of any stream channel.
PG&E has and will implement its system-wide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the project SWPPP.

PG&E will prepare a Fire Prevention and Response Plan that will include reducing the potential for igniting combustible materials. The procedures will cover electrical hazards, flammable materials, smoking, vehicle and equipment access, and fire watches during construction and maintenance procedures during subsequent operation. Project personnel will be directed to park away from dry vegetation; not to smoke; and to equip vehicles with appropriate firefighting equipment; such as water dispensers and shovels, in times of high fire hazard.
A pre-construction survey will be conducted by a qualified botanist or biologist prior to commencement of construction in each area. All rare plant populations will be appropriately marked or flagged for exclusion, or as appropriate, the limits of construction will be marked between the population and the work area. Surveys and marking or flagging must be completed no more than 30 days prior to construction. In the event that any previously unidentified listed plants, or California Native Plant Society (CNPS) List 1-3 plants cannot be avoided, PG&E will consult with the USFWS and/or the CDFG (depending on whether the species is on the federal or state list of sensitive species) to determine appropriate measures to minimize effects to the species and its habitat during construction of the project, as well as during operation and maintenance. The CPUC will be informed of the results of any agency consultations.
Vegetation clearing in occupied Pajaro manzanita habitat should be conducted after Pajaro manzanita has set seed and before flowering begins (typically between May and November). If mechanical brushing is conducted in occupied Pajaro manzanita habitat, mastication implements should not come within 6 inches of the ground surface to avoid disturbing the seed bank. Where feasible, removal of entire Pajaro manzanita plants from the ground should be avoided.
Mobile equipment will not be parked overnight within 100 feet of aquatic habitat. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of aquatic habitat will be positioned over secondary containment.
Best Management Practices such as silt fencing, hay bales, or fiber rolls, will be placed near the intermittent drainages and seasonal wetlands to prevent sedimentation runoff from flowing into Gabilan Creek.
Pre-construction surveys for special-status amphibians and reptiles will be conducted no more than two weeks prior to the commencement of construction. Surveys will include work areas within 600 feet of suitable CTS breeding habitat and work areas within 300 feet of suitable CRLF aquatic habitat. Surveys will be conducted by a qualified, agency-approved biologist. The biologist will relocate any special-status species to a location previously agreed upon by the USFWS and the CDFG. Before the start of work each morning, the biologist will check under any equipment and stored construction supplies left in the work area overnight within 600 feet of suitable habitat. All holes and trenches in habitat areas will be backfilled or covered at the end of the work day to prevent entrapment of special-status species.

All ground-disturbing construction activities within 600 feet of suitable aquatic habitat for CRLF and CTS will be limited to May 1 through October 31, to the greatest extent feasible. For work in these areas, a qualified biologist will conduct a pre-construction survey of the work area immediately preceding construction activities. All potential habitat areas including burrows, woody debris piles, and wetlands within the project area will be thoroughly checked. Any special-status species found will be captured and relocated to a USFWS- and CDFG-approved location type (e.g., a small mammal burrow) and area, prior to the start of construction.
Prior to the commencement of construction activities, flagging, signage, and/or high visibility fencing will be erected around the CTS and CRLF aquatic habitat to identify and protect it from the encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing will be inspected before the start of each workday and maintained until completion of the activity. Once the project site is prepared and work is only occurring in the switching station will the fencing be removed. Only tightly woven netting or similar material will be used for all geo-synthetic erosion control materials such as coir rolls and geo-textiles. No plastic monofilament matting will be used for erosion control measures.
Construction activities within 600 feet of suitable aquatic habitat shall not begin prior to 30 minutes after sunrise and will cease no later than 30 minutes before sunset.
Plywood sheets will be used to temporarily cover potentially active burrows in work areas within 600 feet of suitable aquatic habitat. Burrows will be covered after re-location has taken place, if necessary, or otherwise specified in the Biological Opinion or Incidental Take Permit.
PG&E is currently in consultation with the USFWS and CDFG regarding compensation and conservation measures for any potential take of the species and its associated habitat.
Pre-construction bird nesting surveys in the project area will be conducted before work is performed between February 1 and August 15. To the extent possible, working in the vicinity of active nests will be avoided; however, if avoidance is not practicable, a buffer zone, as determined by a qualified biologist, will be maintained around the active nest to prevent nest abandonment. In the event that work will take place within 50 feet (300 feet for raptors) of an active nest, a biological monitor will monitor the activity of the nesting birds during work to determine if construction activities are resulting in significant disturbance to the birds. If the qualified biologist determines that work is disrupting nesting, then work in that area will be halted until nesting is completed and the young have fledged.

The recommended preconstruction surveys will also serve to identify any burrowing owl and owl signs (e.g., white wash at burrow entrances). If ground-disturbing activities in suitable habitat are delayed or suspended for more than 30 days after the pre-construction surveys, the site will be resurveyed. If no burrowing owls are detected, no further mitigation is necessary. If active burrows are found near a work area, work in the vicinity of the burrows will be limited as follows:

- No disturbance will occur within approximately 160 feet (50 meters) of occupied burrows during the non-breeding season of September 1 through January 31, or within approximately 250 feet (75 meters) during the breeding season of February 1 through August 31.

- The limits of the exclusion zone in the project work area will be clearly marked with signs, flagging and/or fencing.

- If work within these limits is unavoidable while burrows are active, work will only take place within the presence of a qualified monitor who would monitor to determine if the owls show signs of disturbance or, upon prior approval from CDFG a passive relocation effort (displacing the owls from the work area) may be conducted as described below, and subject to the approval of the CDFG.

- Passive relocation of owls may occur during the non-breeding season (September 1 through January 31) with prior approval from CDFG. Passive relocation would include installing one-way doors on the entrances of burrows. The one-way doors would be left in place for 48 hours to ensure the owls have vacated the nest site. Owls would not be relocated during the breeding season.

Before the spring breeding season (and prior to start of construction), a qualified biologist will perform a survey for roosting bats or maternity colonies at the proposed project site. Surveys will evaluate the probability for trees to host roosting bats. For trees considered to have a high probability for bats, acoustic monitoring will be performed in early summer to detect if there are any roosting sites.

If avoidance of an active roosting bat or maternity colony is not practicable, a sufficient buffer will be established in consultation with the CDFG. If acoustic monitoring detects that bats are using trees that need to be cut down, exclusionary one-way doors will be installed in late August, after completion of the maternity season. Roost trees will be removed after it has been confirmed that roosting bats have departed. If a roost is lost, PG&E will consult with the CDFG to see if the agency recommends bat boxes to be installed in the vicinity of the cut tree.

In the event that a roosting bat or maternity colony occurs within or near the project area, a qualified biological monitor will be provided and will remain on-site during construction activities to ensure there is no nest abandonment.

If a bird electrocution does occur at the project site, PG&E will implement the following corrective actions as outlined in their Avian Protection Plan Implementation document:

- If a raptor or a threatened or endangered bird is electrocuted on distribution (pole or mid-span), transmission, or substation facilities, the first line supervisor or designee (incident investigator) shall visit the incident site as soon as possible following the incident. The incident investigator shall be qualified, because of knowledge, training, and work experience, to evaluate and assess bird-related incidents, poles, or other structures.

- The incident investigator will recommend retrofits with avian-safe devices if the incident involved a raptor and schedule any retrofit work to be completed as soon as practical, based on material availability, facility accessibility, clearances, etc.

- If avian program management personnel determine that certain poles or structures present a particularly high risk to raptors, they may require that work to make the poles or structures avian-safe be completed within 30 days or less. The criteria for making this determination may include, but is not limited to the following circumstances:

    - Electrocuted eagle, threatened, or endangered species
    - Multiple raptor electrocutions at the same location
    - Multiple electrocutions in close proximity and within a recent time frame
    - Agency requests

Protective measures that will be implemented include:

- A qualified biologist will survey the project area for badger dens.
- If a badger den is found, PG&E will consult with CDFG to confirm if it is acceptable to live-trap the badger(s) and relocate to a suitable site.
- If badger dens are found in the project area but will not be affected directly by construction activities, PG&E will contact the CDFG and an exclusion area will be established around the dens.

All project vehicles will be washed before arrival on site at a PG&E wash facility or otherwise approved wash-down location. Vehicles will also be cleaned at the completion of the project or when off-road use for that vehicle has been completed.

Cultural
PG&E will design and implement a Worker Education Program that will be provided to all project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program. The Worker Education Program will include, at a minimum: • A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the project vicinity. • A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation. • A discussion of site avoidance requirements and procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the project. • A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies. • A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and other applicable laws and regulations.
In the unlikely event that previously unidentified cultural resources are uncovered during implementation of the project, all work within 165 feet of the discovery will be halted and redirected to another location. PG&E's cultural resource specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, the resource will be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, PG&E will evaluate the significance and California Register of Historical Resources (CRHR) eligibility of the resource and implement data recovery excavation or other appropriate treatment measures if warranted.
In the event human remains are encountered during the project, work within 50 feet of the find will be halted and the County Coroner will be notified immediately. Work will remain suspended until the Coroner can assess the remains. In the event the remains are determined to be prehistoric in origin, the Coroner will notify the Native American Heritage Commission, who will then designate a Most Likely Descendent. The Most Likely Descendent will consult with PG&E's archaeologist to determine further treatment of the remains.
Geology
Surface disturbance will be minimized to the extent consistent with safe and efficient completion of the project scope of work.

Topsoil will be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil will be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that will not be subject to additional disturbance will be stabilized by landscaping.
Erosion control BMPs will be implemented where grading occurs.
Hazards and Hazardous Materials
PG&E will submit a Hazardous Substance Control and Emergency Response Plan to the CPUC for recordkeeping at least 30 days prior to project construction. The plan will identify methods and techniques to minimize the exposure of the public to potentially hazardous materials during all phases of project construction through operation. The plan will require implementing appropriate control methods and approved containment and spill-control practices (i.e., spill control plan) for construction and materials stored on-site. All hazardous materials and hazardous wastes will be handled, stored, and disposed of, in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. If it is necessary to store any chemicals on-site, they will be managed in accordance with all applicable regulations. Material Safety Data Sheets will be maintained and kept available on-site, as applicable.
PG&E will prepare a site-specific Health and Safety Plan to ensure that potential safety hazards would be kept at a minimum. The plan will include elements that establish worker training and emergency response procedures relevant to project activities. The plan will be submitted to the CPUC at least 30 days prior to construction for CPUC recordkeeping.
PG&E will prepare and submit a Fire Prevention and Response Plan to the CPUC and to local fire protection authorities for notification at least 30 days prior to construction. The plan will include fire protection and prevention methods for all components of the project during construction. The plan will include procedures to reduce the potential for igniting combustible materials by preventing electrical hazards, use of flammable materials, and smoking onsite during construction and maintenance procedures. Project personnel will be directed to park away from dry vegetation; to equip vehicles with fire extinguishing equipment; not to smoke; and to carry water, shovels, and fire extinguishers in times of high fire hazard.
An environmental training program will be established to communicate to all field personnel any environmental concerns and appropriate work practices, including spill prevention and response measures and BMPs. The training program will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific plans, including but not limited to the project's Hazardous Substances Control and Emergency Response Plan, SWPPP, Erosion Control and Sediment Transport Plan, and Health and Safety Plan.

A monitoring program will be implemented to ensure that the plans are followed throughout the construction period. BMPs, as identified in the project's SWPPP and Erosion Control and Sediment Transport Plan, will be implemented during the project to minimize the risk of an accidental release and to provide the necessary information for emergency response.
Hydrology
Worker environmental awareness will communicate environmental issues and appropriate work practices specific to this project. This awareness will include spill prevention and response measures and proper BMP implementation. The SWPPP training will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific water quality requirements, including applicable portions of the Health and Safety Plan and PG&E's Hazardous Substances Control and Emergency Response program.

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. BMPs will include:
    - 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 along the southern and western edges of the proposed switching station site to address unforeseen runoff from the property into the nearby intermittent drainages, seasonal wetlands, and Gabilan Creek;
    - 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 San Juan Grade Road;
    - establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids. Use of oil pans under stationary vehicles is strongly recommended; and
    - no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or creeks. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of wetlands, culverts, or creeks will be positioned 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 at the proposed switching station site to limit the area of disturbance during construction at the site. The silt fence will be monitored regularly to ensure effectiveness.

PG&E will provide compensatory mitigation for permanent impacts to waters of the state and waters of the U.S. as required by the USACE, RWQCB, and CDFG as part of the permitting process for each agency.

Noise
"Quiet" equipment (i.e., equipment that incorporates noise control elements into the design—compressors have "quiet" models) will be used during construction whenever possible.
PG&E will limit construction to the hours between 7 a.m. and 7 p.m., Monday through Saturday, to the extent feasible. If nighttime work is needed because of clearance restrictions on the power line, PG&E will take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.
PG&E will encourage construction crews to limit unnecessary engine idling. (See Air Quality measures.)
Compressors and other small stationary equipment will be shielded with portable barriers in proximity to residential areas.

2.0 ALTERNATIVES ANALYSIS

2.1 REASON FOR ANALYSIS OF ALTERNATIVES

The California Environmental Quality Act (CEQA) does not require a review of alternatives when, as with Pacific Gas and Electric's project, the proposed project would result in no significant environmental impacts after mitigation (Guidelines, Sec. 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 (CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, Section 151626.6 as amended July 24, 2007.) However, General Order 131-D (GO 131-D) requires that an application for a Permit To Construct (PTC) include the "reasons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each" (GO 131-D, section IX.B.1.c.) The discussion that follows addresses the GO 131-D requirement.

2.2 SELECTION AND EVALUATION OF ALTERNATIVES

PG&E identified the following project objectives for the Crazy Horse Canyon Switching Station Project before selecting the proposed site (Site 2) for review and approval by the California Public Utilities Commission (CPUC). The project objectives are as follows:

- **Improve Transmission Reliability:** The switching station should be located and designed to allow PG&E to quickly detect power outages on existing 115 kV lines, and quickly and efficiently adjust the system's operating parameters in order to restore service in a timely manner.

- **Increase Operational Flexibility:** The switching station should be located and designed to allow PG&E to re-route power on existing 115 kV lines in order to serve existing customers while also performing required routine or emergency maintenance on lines connected to the station.

PG&E evaluated several site alternatives based on the factors listed below, including their proximity to existing transmission infrastructure and environmental impact potential. The process resulted in three potential switching station sites as shown in Figure 2-1. The locations of the sites relative to current land use designations are depicted in Figure 2-2. PG&E also evaluated a No Project alternative. This chapter discusses the selection and evaluation of the alternatives and provides a comparison of the alternatives. In addition, the existing conditions at Sites 1 and 3 and an impacts analysis are provided. Existing conditions and impacts are thoroughly discussed for Site 2 in the remaining chapters of this Proponent's Environmental Assessment (PEA).

PG&E defined the following objectives for selection of site alternatives:

- maximizing proximity to the confluence of existing 115 kV lines to minimize the number of new and relocated towers needed to tie in the facility,
- locating the facilities on an undeveloped site to avoid or minimize the relocation of residences and businesses or the purchase of high-cost land, and
- locating the facilities in an area that would feasibly support an adequately-sized, level substation footprint and adequate access for construction and operation.

Alternative sites were then analyzed to determine their suitability using the following siting criteria:

- Potential to affect sensitive environmental resources
- Proximity to schools and residences
- Existing and future land use
- Potential impacts to views from San Juan Grade Road and Crazy Horse Canyon Road
- Local government preference

Maps of the study area were prepared using an ESRI-based Geographic Information System (GIS) (ArcView Version 9.2). These maps included information on land use (current and planned), special-status species, slopes, infrastructure, soils, and hydrology. Using the mapped data in conjunction with site visits and input from the County of Monterey, PG&E identified three site alternatives that could meet the siting objectives (see Figure 2-1).

2.3 DESCRIPTION OF ALTERNATIVES

2.3.1 Site 2 (Proposed Project Site)

Site 2 (refer to Figure 2-3) is situated in a valley approximately 0.5 mile northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road and was identified by the County of Monterey as the preferred site for minimizing visual impacts. Because the site has a greater than 10 percent slope, PG&E initially rejected this site, but reconsidered it at the urging of the Monterey County Planning Department. PG&E was able to find an area outside of drainages that, with engineered cut and fill, will provide a feasible pad for station construction and operation. The current land use of this site alternative is agriculture (i.e., pastureland) comprised of primarily non-native grasslands and coast live oak woodlands. Drainage from this valley crosses under San Juan Grade Road and flows toward Gabilan Creek. This site alternative will require removal of four steel tower structures and the installation of six steel tower structures and five steel pole structures. An in-depth description of the proposed project site and components is provided in Chapter 1: Project Description.

X Site alternative

Figure 2-1
Alternative Sites Location Map
Crazy Horse Canyon Switching Station

N

0 1,000 2,000 Feet

Scale = 1:24,000

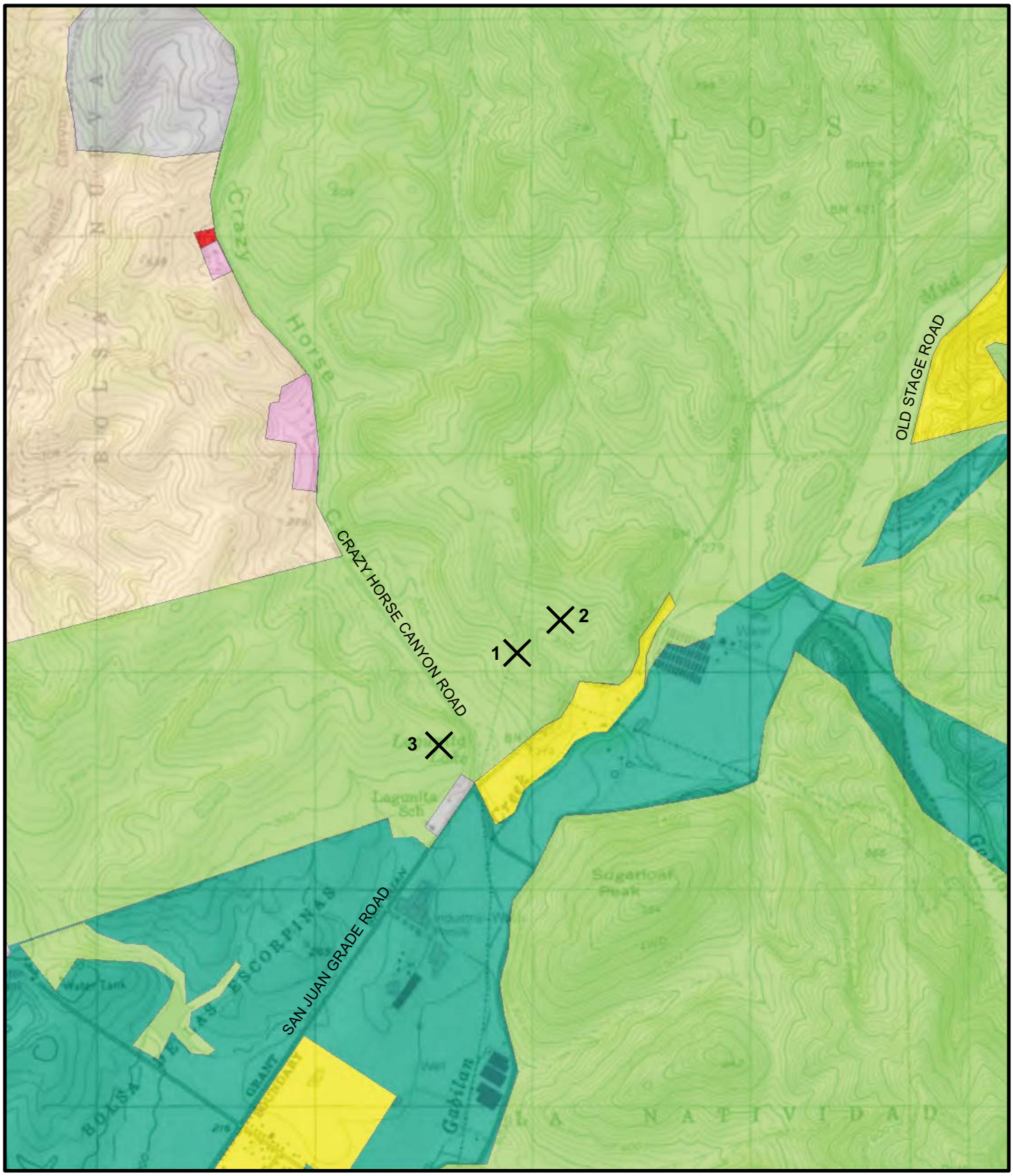


Figure 2-2
Land Use Designations
Crazy Horse Canyon Switching Station

Site alternative

Existing transmission or power line

Figure 2-3
Site Alternatives
Crazy Horse Canyon Switching Station

N

Scale = 1:6,000

0 250 500 Feet

2.3.2 Site 1 Alternative

Site 1 (refer to Figure 2-3) is approximately 0.3 mile north of the intersection of Crazy Horse Canyon Road and San Juan Grade Road. This site alternative is located where the existing 115 kV power lines converge on the crest of a hill. The current land use is agriculture (i.e., pastureland) comprised of primarily non-native grassland with some coast live oak woodland. This site alternative would require the relocation of one existing tower and installation of three new towers.

2.3.3 Site 3 Alternative

Site 3 (refer to Figure 2-3) is atop a hill 600 feet north of the Lagunita Elementary School, approximately 700 feet northwest of the intersection of Crazy Horse Canyon Road and San Juan Grade Road. The current land use of this site alternative is also agriculture (i.e. pastureland) comprised of primarily non-native grassland and coast live oak woodland. This site alternative would require rerouting of the power lines, resulting in the construction of 16 new structures.

2.3.4 No Project Alternative

Under the No Project alternative, a switching station would not be constructed and the project objectives would not be met.

2.4 COMPARISON OF ALTERNATIVES

All these sites would meet the project's basic objectives. Site 2, the preferred project site, will require engineered cut and fill areas needed to obtain a level site. PG&E believes all three sites could be developed without prohibitive engineering or economic constraints.

Construction of Sites 1, 2, and 3, would result in similar effects to cultural resources, air quality, geology and soils, hazards and hazardous materials, recreation, agricultural resources, population and housing, public services and utilities and service systems, and growth-inducing and cumulative impacts with the implementation of similar applicant proposed measures (APMs), where necessary. However, potential effects to aesthetics, biological resources, hydrology and water quality, land use planning, and noise-level resources were found to vary among sites.

The following section provides a comparison of the alternatives with specific regard to aesthetics, biological resources, hydrology and water quality, land use planning, and noise-level resources effects and also engineering considerations. The No Project alternative is also compared to the proposed project.

2.4.1 Site 2 (Proposed Project) Comparison

2.4.1.1 Environmental Considerations

PG&E selected Site 2 as the proposed project based on considerations related largely to aesthetic impacts and local government considerations. Sites 1 and 2 are both located northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road on opposite ridge lines that bound a small valley, and Site 3 is located on a hilltop northwest of the intersection of these roads. However, Site 1 is located in a position that makes it more visually prominent from the intersection of these proposed scenic roads and Site 3 would require reconfiguration of the existing power lines that could potentially create additional alterations to public views. Site 2's location, combined with planned vegetative screening, will present significantly fewer impacts to the viewshed in this area and will require less engineering than will Site 1 in order to ensure that aesthetic impacts are minimized. PG&E met with Monterey County officials on several occasions to discuss potential concerns regarding siting of the project and their recommendation of Site 2 as the preferred site is documented in a letter to the CPUC (see Attachment A).

Construction of the project at Site 2 has the potential to affect biological resources, as 18 special-status plant species and 32 special-status wildlife species have the potential to occur in close proximity to the project, and California tiger salamander (*Ambystoma californiense*) has been found on the site. Sites 1 and 3 are located in similar habitat and could potentially have similar effects on biological resources; although Site 1 is located within 0.25 mile, and on the same parcel of land, as Lagunita Lake, a potential breeding habitat for California tiger salamander and California red-legged frog (*Rana aurora draytonii*). Additional impacts to oak trees are anticipated at Site 2 in comparison to Sites 1 and 3 due to the area that must be graded to obtain a level surface for construction and operation of the switching station. Biological considerations with regard to Site 2 are discussed in more detail in Chapter 6: Biological Resources, and with the incorporation of APMs outlined in that chapter these effects will be less than significant.

Site 2 is upslope of an intermittent drainage that is connected to Gabilan Creek and will require impacts to a wetland in order to construct the access road that will connect the switching station to the public roadway system via San Juan Grade Road. Site 2 is sited on more sloped terrain than Sites 1 and 3 and will consequently require significant cut and fill grading in order to create a level building surface. Therefore, there is more potential for direct impacts to hydrological resources and water quality as a result of construction of the switching station at Site 2. Hydrological considerations with regard to Site 2 are discussed in more detail in Chapter 10: Hydrology and Water Quality, and with the incorporation of APMs outlined in that chapter potential impacts will be less than significant.

The land use designation for Site 2 is Permanent Grazing, as is the designation for Site 1 and Site 3; however, Site 3 is located approximately 600 feet from Lagunita Elementary School and 1.2 miles from the Rancho San Juan Specific Plan area of development, which would put the substation closer to known future development. In addition, construction noise at Site 3 could exceed the normally acceptable range for daytime noise due to its proximity to the school, whereas noise impacts at the Site 1 and Site 2 would be within the allowable range and less than significant.

Construction of the project at Site 2 will result in removal of Williamson Act Contract agricultural land from production, as would construction at Site 1. However, removal of the land at either site represents a negligible (less than 1 percent) loss of Williamson Act Contract lands in Monterey County and, therefore, is a less-than-significant impact.

2.4.1.2 Engineering Considerations

As discussed above, Site 2 is located in an area with a greater than 10 percent slope. However, PG&E has determined that it can engineer the site to construct a level pad by performing significant cut and fill grading. Sites 1 and 3 are in areas with slopes of less than 10 percent, but Site 1 would require additional grading to meet the County's requirement to construct earthen berms to minimize visual impacts and Site 3 would require significant reconfiguration of the existing power lines. Thus, Site 2 will require roughly similar levels of engineering as the alternative sites.

2.4.2 Site 1 Comparison

2.4.2.1 Environmental Considerations

Environmental impacts associated with Site 1 would generally be similar to the proposed project with the exception of impacts to aesthetics, biology, and hydrology and water quality.

Site 1 is located just northeast of the Crazy Horse Canyon Road and San Juan Grade Road intersection. Both roadways are located at the base of slopes, at an elevation that is below the proposed project site. Intermittent, close-range, and relatively unobstructed views toward the site are available from places along the two roadways. The site's hilltop location contributes to it being somewhat visually prominent when seen at close range from these limited roadway locations. However, from many places along the roadway corridors as well as from the overall surrounding vicinity, views of this site are screened by intervening vegetation and topography. Monterey County staff expressed concern that construction of a switching station at Site 1 would significantly affect the views in this area and recommended locating the project at Site 2.

Lagunita Lake is located adjacent to the intersection of Crazy Horse Canyon Road and San Juan Grade Road, approximately 0.25 mile south (and downhill) of Site 1. California tiger salamander and California red-legged frog could potentially utilize Lagunita Lake for breeding habitat and Congdon's tarplant (*Centromadia parryi* ssp. *Congdonii*) has been found directly adjacent to Lagunita Lake. Due to the proximity of Site 1 to Lagunita Lake, construction of the project at Site 1 could have greater potential to impact these species in comparison to Site 2. Potential impacts to other species and habitat at Site 1 would be similar to Site 2.

Site 1 would not impact any wetlands, but is approximately 300 feet from the ephemeral drainage area that flows into Gabilan Creek, which is across San Juan Grade Road and, as such, could have similar impacts to water quality as Site 2 due to the potential for surface runoff during construction and operation.

Construction of the project at Site 1 would result in removal of Williamson Act Contract agricultural land from production, similar to Site 2. However, removal of the land at either site would represent a negligible (less than 1 percent) loss of Williamson Act Contract lands in Monterey County.

2.4.2.2 Engineering Considerations

Site 1 would require fewer reroutes of the lines to be tied into the switching station in comparison to the proposed project site. Site 1 would also require less grading than Site 2. However, Monterey County indicated during discussions that an earthen berm would be required at Site 1 to minimize views of the switching station from Crazy Horse Canyon Road and San Juan Grade Road. Construction of a berm would incur similar grading cost as required for Site 2, as well as additional engineering to account for drainage of the site. Thus both sites have relatively similar engineering considerations.

2.4.3 Site 3 Comparison

2.4.3.1 Environmental Considerations

Environmental impacts associated with Site 3 would generally be similar to the proposed project, with the exception of impacts to aesthetics, hydrology and water quality, land use planning, and noise.

Site Alternative 3 lies on a hilltop, about 700 feet north of San Juan Grade Road and just west of Crazy Horse Canyon Road. Topography and intervening vegetation provide considerable screening with respect to public views of this site. However, Site 3 would require significant rerouting of existing power lines and the construction of 16 towers that could potentially create additional alterations to public views of this site. These potential impacts would be minimal considering that there is an existing transmission corridor; and thus, the overall character of the viewshed would not be significantly altered. Nonetheless, it would be a visible change and the County of Monterey expressed concern over the number of new towers required, whereas changes at Site 2 will be less visible.

Site 3 is located farther away from active drainages and would require less grading than Site 2, resulting in less potential for erosion and subsequent impacts to water quality. While Site 3 is closer to the Special Flood Zone Hazard Area, its elevation assures that it will not face significant flooding risk. As such, there is less potential for impacts to hydrology and water quality at Site 3 in comparison to Site 2.

Site 3 is 600 feet from Lagunita Elementary School, which is significantly closer than the other site alternatives. This could create potential conflicts with future land use in the area with regard to potential expansion of the school and additional development. The Rancho San Juan Specific Plan represents a plan of development for a community 1.2 miles southwest of Site 3 and so it is possible that further development might be considered or desired on parcels in proximity to the existing school site.

Due to the proximity of Site 3 to Lagunita Elementary School, students could be exposed to construction noise. For schools, a normally acceptable range for noise is 50 to 60 A-weighted decibels (dBA), and 60 to70 dBA is conditionally acceptable. Noise modeling for the proposed project site, which is located approximately 2,900 feet from the school, showed that construction noise would be an average of 57 dBA and a maximum of 61 dBA at 600 feet from the site. Based on this modeling, noise levels at Site 3 could exceed the normally acceptable range (although would still be within the conditionally-acceptable range), whereas site 2 construction noise would not affect the school.

2.4.3.2 Engineering Considerations

As discussed with regard to aesthetics, Site 3 would require significant rerouting of existing power lines in order to tie into the switching station. In addition, most of the lines in this location are located on mostly inaccessible sloped terrain with limited access. Thus, power line construction could require helicopter-based construction methods and the need to construct additional access points. These considerations make Site 3 less desirable from an engineering standpoint than Site 2.

2.4.4 No Project Alternative Comparison

The No Project Alternative would avoid potential impacts to environmental resources associated with construction and operation the Crazy Horse Canyon Switching Station. However, the No Project alternative would have a substantial impact on the communities PG&E serves. This alternative could result in prolonged power outages due to the lack of operational flexibility afforded by the switching station. The area that would benefit from the installation of this switching station has a largely agrarian economy that is particularly reliant on high-power usage refrigeration and processing plants. Prolonged outages would significantly affect these operations and could lead to a significant economic loss in the region. In addition, hospitals in the region would be adversely affected by the outages.

While there are no direct, immediate financial costs associated with the No Project alternative, power outages that may occur if the project is not constructed would likely require equipment repair and replacement, and generate other indirect costs. Because the No Project alternative does not achieve the objectives of improving reliability and increasing operational flexibility of the local transmission system, and due to the issues discussed above, this alternative was rejected.

2.5 CONCLUSION

All three of the switching station site alternatives meet the project's objectives. However, PG&E determined that constructing the switching station at Site 2 would be optimal for the following reasons:

- Site 2 is located in a valley where it will be less visible from Crazy Horse Canyon Road and San Juan Grade Road than Sites 1 and 3.

- Site 2 is located in reasonable proximity to the existing power lines and will not require significant rerouting as would Site 3.

- Site 2 is farther from Lagunita Elementary School and as such will be less likely to have noise and land use planning impacts than will Site 3.

- Site 2 is preferred by Monterey County.

The No Project alternative does not meet the project objectives as it fails to address the basic need to improve power reliability.

2.6 REFERENCES

California Department of Water Resources. *California Land and Water Use Data*. Online: http://www.landwateruse.water.ca.gov/basicdata/landuse/data_request/data.cfm?fromwhere=&towhere=shapes/. Site visited April 01, 2008.

_____. *Groundwater Basin Map*. Online: http://www.groundwater.water.ca.gov/bulletin118/basin_maps/index.cfm. Site visited April 01, 2008.

California Department of Conservation, Division of Land Resource Protection. *Williamson Act Data.* Online: ftp://ftp.consrv.ca.gov/pub/dlrp/WA/. Site visited April 01, 2008.

California Department of Education. *School Identification – Data & Statistics.* Online: http://www.cde.ca.gov/ds/si/. Site visited May 01, 2008.

California Department of Fish and Game. *CNNDB Data*. Online: http://nrm.dfg.ca.gov/cnddb/. Site visited May 01, 2008.

California Office of Historic Preservation. *OHP Listed Resources.* Online: http://ohp.parks.ca.gov/listed_resources/default.asp?num=651. Site visited May 01, 2008.

Federal Emergency Management Agency. *Geography Network Services hosted by ESRI.* Accessed through ESRI: ArcMap server. Site visited May 01, 2008.

Monterey County. *Monterey County Environmental Impact Report*. Online: http://www.co.monterey.ca.us/gpu/reports/Draft%20General%20Plan.htm. 2004.

_____. *General Plan and General Plan Update*. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited November 17, 2008

_____. *Greater Salinas Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/GSAP.complete. Site visited November 11, 2009.

_____. *North County Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/landuse.htm. Site visited November 24, 2008.

_____. 2008. *Revised Rancho San Juan*. Online: http://www.co.monterey.ca.us/planning/major/rsj3/rsj3_main.htm. Site visited: November 18, 2009.

National Hydrology Dataset. *California Spatial Information Library.* Online: http://archive.casil.ucdavis.edu/casil/hydrologic/. Site visited May 01, 2008.

National Park Service. *Juan Bautista de Anza National Historic Trail Guide*. Online: http://www.solideas.com/DeAnza/TrailGuide/. Site visited May 01, 2008.

US Department of Agriculture. *Natural Resources Conservation Service.* Online: http://SoilDataMart.nrcs.usda.gov. Site visited April 01, 2008.

United States Fish and Wildlife Service. *Critical Habitat Portal*. Online: http://criticalhabitat.fws.gov. Site visited May 01, 2008.

_____. *National Wetlands Inventory.* Online: http://nwi.fws.gov. Site visited May 01, 2008.

United State Geological Service. *Earthquake Hazards Program: Quaternary Fault and Fold Database Home.* Online: http://gldims.cr.usgs.gov/qfault/viewer.htm. Site visited May 01, 2008.

Web Soil Survey, Natural Resources Conservation Service, United States Department of Agriculture, Soil Maps of Monterey County, California, Online: http://websoilsurvey.nrcs.usda.gov/app/. Site visited January 5, 2010.

3.0 ENVIRONMENTAL IMPACT ASSESSMENT SUMMARY

3.1 AESTHETICS

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would alter a scenic vista defined as distant public view along or through an opening or corridor that is recognized and valued for its scenic quality.* ***Finding****: It is determined that there are no recognized scenic vistas within the project viewshed. As described in Section 4.7.3, the project will not substantially alter views of those hillsides and ridgelines that are currently experienced by the public.*	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would result in physical changes to the landscape altering a recognized scenic resource within a state scenic highway.* ***Finding****: As documented in Section 4.6.1, there are no designated State Scenic Highways within the project viewshed; therefore, the project will not substantially damage scenic resources within a State Scenic Highway.* *Crazy Horse Canyon Road and San Juan Grade Road are proposed but not designated county scenic routes in the Monterey County General Plan (Monterey County 2007), and Old Stage Road is identified as scenic and visually sensitive by the Greater Salinas Area Plan (Monterey County 1985). As described in Section 4.7.3 and shown in Figures 4-4A through 4-7C, the project will not have a significant visual effect on views from these roads.*	☐	☐	☑	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to result in physical changes to the landscape altering the existing visual character or quality of the site and its surroundings.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
***Finding**: The project will not substantially degrade the existing visual character or quality of the site and its surroundings. The project will generally not be visible in public views of the site from surrounding roadways and residential areas. Landscaping proposed as part of the project will provide effective screening.*				
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? ***Finding:** Project security lighting will create an additional source of nighttime light that may be visible from some nearby locations off-site. With the use of non-glare fixtures directed on-site and screening provided by project landscaping, these project-related light and glare effects are considered incremental and less than significant.*	☐	☐	☑	☐

3.2 AGRICULTURAL RESOURCES

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would convert important farmlands to urban uses.* ***Finding****: The project is not located within important farmland.*	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would result in a conflict with existing zoning for agricultural use or a Williamson Act contract.* ***Finding:*** *The project will not result in a conflict with existing zoning for agricultural use. Although it will result in the removal of 11.3 acres of Williamson Act lands, this is less than 1 percent of Williamson Act lands in the county; and therefore, will be less than significant.*	☐	☐	☑	☐
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to nonagricultural use? ***Finding****: The project will result in a permanent loss of approximately 11.3 acres of grazing land. This is considered a less than significant impact as it represents less than 1 percent of the total land in agricultural use within the County of Monterey.*	☐	☐	☑	☐

3.3 AIR QUALITY

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan? ***Threshold of Significance:*** *The project would have a significant adverse impact if air quality emissions from the construction or operation of the project were to exceed the Monterey Bay Unified Air Pollution Control District (MBUAPCD) air quality standards (see Chapter 5: Air Quality).* ***Finding****: The project will not conflict with or obstruct implementation of any air quality attainment plans. Project emissions will not exceed the MBUAPCD published thresholds of significance for project environmental impacts resulting from construction or operation.*	☐	☐	☐	☑
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Threshold of Significance:*** *The project would have a significant adverse impact if it violated any air quality standard or contributed substantially to an existing or projected air quality violation.* ***Finding****: The project will not violate any air quality standard or contribute substantially to an existing or projected air quality violation.*	☐	☐	☐	☑
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state Ambient Air Quality Standards (AAQS) (including releasing emissions that exceed quantitative thresholds for ozone precursors)? ***Threshold of Significance:*** *The project would have a significant adverse impact if it resulted in a considerable cumulative increase in any criteria pollutant in the project region that is non-attainment under an applicable federal or state air quality standard.* ***Finding****: Construction of the project will produce temporary air emissions of PM_{10s}; implementation of applicant proposed measures recommended by the Monterey Bay Unified Air Pollution Control District as described in Chapter 5: Air Quality will result in less than significant impacts.*	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations? ***Threshold of Significance:*** *Emissions in excess*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
of established thresholds of significance may have a significant impact on local air quality when emitted nearby and upwind of sensitive receptor ***Finding**: The project will not expose sensitive receptors to substantial pollution concentrations from ground disturbance or from construction equipment and vehicle exhaust.*				
e) Create objectionable odors affecting a substantial number of people? ***Finding**: Construction and operation of the project will not require the use of equipment or materials that would cause objectionable odors.*	☐	☐	☐	☑

3.4 BIOLOGICAL RESOURCES

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to cause the substantial loss of designated species either directly or through substantial habitat modifications.* ***Findings:*** *Two protected species, California tiger salamander (CTS) and Pajaro manzanita, are known to occur within the project area. This project will not have a substantial adverse effect on species identified as having a special status by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) with incorporation of Mitigation Plans to be developed with USFWS and CDFG and with applicant proposed measures listed in Chapter 6: Biological Resources.*	☐	☑	☐	☐
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? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to substantially diminish the habitat value of riparian habitat or other state- or federally recognized sensitive natural communities through physical modification to such areas.* ***Findings:*** *The Monterey County General Plan discusses policies for conservation and preservation of trees, special-status wildlife and plants and their habitats, and wetland. The project will have a less than significant impact on riparian habitat and other sensitive natural communities with implementation of the applicant proposed measures listed in Chapter 6: Biological Resources.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
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? ***Threshold of Significance:*** *The project would have a substantial adverse effect on federally protected wetlands if it were to directly remove, fill, or cause hydrologic interruption such that wetland functions and/or values were substantially reduced or diminished.* ***Findings:*** *The project will cause permanent fill to 0.048 acres of Corps jurisdictional wetlands. An additional 0.49 acres of seasonal wetland and 0.41 acre of intermittent drainage will be temporarily impacted by construction. Mitigation will be required for the permanent fill of the wetland; applicant proposed measures described in Chapter 10: Hydrology will ensure that impacts to other aquatic habitats are less than significant.*	☐	☑	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites? ***Threshold of Significance:*** *The project would have a significant adverse effect if it were to interfere substantially with the movement of fish and wildlife through migration corridors by removing, obstructing, or physically changing corridors so as to diminish use. Additionally, the project would have a significant adverse effect it were to obstruct or diminish the quantity or quality of native nursery habitat.* ***Findings:*** *This project will not impact any fish species, and it will have a less-than-significant impact on the movement of wildlife species. The project will not substantially interfere with the established native resident or migratory wildlife corridors, or impede the use of native wildlife nurseries. There is sufficient open space surrounding the project site that it will not significantly impede wildlife movement through the area.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	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? ***Threshold of Significance:*** *The project would have a significant adverse impact if it were to conflict with applicable local policies or ordinances protecting biological resources.* ***Findings:*** *PG&E will obtain any necessary ministerial tree permits required by the County of Monterey, therefore the impacts to the trees will be less than significant with incorporation of the applicant proposed measures listed in Chapter 6: Biological Resources.*	☐	☐	☑	☐
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? ***Findings:*** *The project is not within an applicable habitat conservation plan or natural community conservation plan.*	☐	☐	☐	☑

3.5 CULTURAL RESOURCES

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5 of the CEQA Guidelines? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to directly alter or change the context of the project area such that the scientific, cultural, or social value of a historical resource within the project area is diminished, or if the project would cause damage to, disrupt, or adversely affect an important prehistoric or historic archaeological resource such that its integrity could be compromised or eligibility for future listing on the California Register of Historic Resources diminished.* ***Finding****: No known historical resources are present based on archival research and a field inventory. Ground-disturbing construction activities could reveal previously unknown cultural resources. Impacts to any unknown resources will be less than significant with implementation of applicant proposed measures listed in Chapter 7: Cultural Resources.*	☐	☐	☑	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to 15064.5 of the CEQA Guidelines? ***Threshold of Significance:*** *The project would cause a substantial adverse change in the significance of a unique archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it contains information needed to answer important scientific research questions; has a special and particular quality, such as being the oldest or best available example of its type; or is directly associated with a scientifically recognized important prehistoric or historic event or person).* ***Finding****: No known unique archaeological resources are present in the project area. Ground-disturbing construction activities could reveal previously unknown resources. Impacts to any unknown resources will be less than significant with implementation of applicant proposed measures listed in Chapter 7: Cultural Resources.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would result in physical changes to the landscape, directly affecting or changing the context within which an archaeological resource or unique geologic feature exists, thereby diminishing its value.* ***Finding****: No known unique paleontological resources are present within the project area, but construction may unearth subsurface paleontological resources. Impacts to accidentally discovered resources will be less than significant with implementation of applicant proposed measures listed in Chapter 7: Cultural Resources.*	☐	☐	☑	☐
d) Disturb any human remains, including those interred outside of formal cemeteries? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would result in physical changes to the landscape causing the potential to disturb human remains, including those interred outside of formal cemeteries.* ***Findings:*** *No sites with human remains have been identified in the project area. Impacts to human remains accidentally discovered through construction activities will be less than significant with implementation of applicant proposed measures listed in Chapter 7: Cultural Resources.*	☐	☐	☑	☐

3.6 GEOLOGY AND SOILS

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to expose people or structures to geological hazards or related hazards, such as ruptures of a known earthquake fault, strong seismic shaking, seismic-related ground failure (e.g., liquefaction), landslides, soil erosion or loss of topsoil, unstable geologic unit, expansive soils, or soils incapable of supporting septic systems.* ***Findings:*** *There are no Alquist-Priolo fault zones and no active surface-fault traces in the project area.*	☐	☐	☐	☑
ii) Strong seismic ground shaking? ***Findings:*** *Various faults in the area are capable of generating strong ground shaking but the project facilities will be engineered to withstand expected ground motions without substantial adverse effects; therefore, the impacts from ground shaking are determined to be less than significant.*	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction? ***Findings:*** *The project is located on sloped terrain and thus the potential for liquefaction due to ground shaking is present. However, incorporation of proper grading practices will ensure that this impact is less than significant.*	☐	☐	☑	☐
iv) Landslides? ***Findings:*** *The project is located on sloped terrain and thus the potential for landslides due to ground shaking is present. However, incorporation of proper grading practices will ensure that this impact is less than significant.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil? ***Findings:*** *The project will involve grading and cut-and-fill slopes. Incorporation of topsoil salvage and erosion control Best Management Practices (BMPs) described in Chapter 8: Geology, Soils and Mineral Resources will reduce the impacts to less than significant.*	☐	☐	☑	☐
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? ***Findings:*** *There are no unstable geologic units identified in the area of the switching station site or tower locations.*	☐	☐	☐	☑
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? ***Findings:*** *The soils in the project area are expansive. Design-level geotechnical studies will evaluate the site-specific soil conditions and the expansive soil condition will be accounted for in the design of project facilities, resulting in less than significant impacts.*	☐	☐	☑	☐
e) Have 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? ***Findings:*** *Septic systems or alternative wastewater disposal systems are not proposed.*	☐	☐	☐	☑

3.7 HAZARDS AND HAZARDOUS MATERIALS

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	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? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to expose the public and environment to hazardous materials.* ***Findings:*** *Construction of the switching station will require the use of motorized equipment requiring fuels, such as diesel, and other fluids. Concrete will be used for the foundations of the switching station and the towers and tubular steel pole foundations. Maintenance of the switching station and transmission interconnection line will require the periodic transport of hazardous materials, such as petroleum products. All materials used during construction and operation will be transported, used, and disposed of in accordance with applicable regulations.*	☐	☐	☑	☐
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? ***Findings:*** *Implementation of spill prevention, control, and counter measure regulations (Title 40 Code of Federal Regulations Section 112) for the substation construction will render the potential for a release of hazardous materials to the environment unlikely.*	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? ***Findings:*** *No existing or proposed schools are located within 0.25 mile of the project.*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
d) Lie 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, would it create a significant hazard to the public or the environment? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were located on a recognized hazardous materials site and would cause the public or environment to come into contact with such materials.* ***Findings:*** *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.*	☐	☐	☐	☑
e) 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, would it result in a safety hazard for people residing or working in the project area? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to result in a safety hazard for people residing or working in a project area that is within 2 miles of an airport.* ***Findings:*** *The project is not located within 2 miles of an airport.*	☐	☐	☐	☑
f) Lie within the vicinity of a private airstrip and, as a result, would it result in a safety hazard for people residing or working in the project area? ***Findings:*** *The project is not located in the vicinity of a private airstrip.*	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it impeded emergency response or evacuation plans.* ***Findings:*** *There are no emergency response plans or emergency evacuation plans that the project would impair implementation of or physically interfere with.*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to expose people or structures to risk of loss, injury, or death due to wildland fires.* ***Findings:*** *The project will not significantly increase the potential for wildfires close to urban areas or residences. During construction, heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. During construction and operation, downed power lines or equipment failure could likewise generate sparks and start a fire. However, typical PG&E fire hazard abatement practices will be implemented during construction and operation as described in Chapter 9: Hazards and Hazardous Materials, including instructing construction workers to park safely away from dry vegetation and installation of high-speed relay equipment to report and de-energize broken lines.*	☐	☐	☑	☐

3.8 HYDROLOGY AND WATER QUALITY

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to cause conditions exceeding Central Valley Regional Water Quality Control Board water quality standards or other surface waterbody standards established in the applicable Basin Plan (See Chapter 10: Hydrology and Water Quality).* ***Findings:*** *Soil erosion and subsequent downstream sedimentation and reduced surface water quality could potentially increase due to temporary impacts to 0.041 acres of intermittent drainage and 0.49 acres of seasonal wetland during construction of the project facilities. However, implementation of measures outlined in a Stormwater Pollution Prevention Plan and other plans described in Chapter 10: Hydrology will reduce these impacts to less than significant levels.*	☐	☐	☑	☐
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 that would not support existing land uses or planned uses for which permits have been granted)? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to severely degrade or deplete an aquifer or interfere with groundwater recharge.* ***Findings:*** *The project will not utilize any groundwater for construction or landscaping purposes. The majority of the switching station pad will be covered with pervious gravel, and the net decrease in the amount of groundwater recharged to the basin will be negligible. Therefore, impacts to the groundwater supply levels as a result of an increase in impervious surfaces will be less than significant.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
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 that would result in substantial erosion or siltation on- or off-site? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to cause accelerated erosion or siltation of waterbodies in the project vicinity.* ***Findings:*** *Because of the contours present at the site, construction of the switching station will require changing the existing site contours to establish a level pad. Approximately 0.04 acre of intermittent drainage and approximately 0.49 acre of seasonal wetland will be temporarily affected by construction activities. Construction of the project access road will result in permanent fill of approximately 0.05 acres of seasonal wetland #2 (refer to Figure 10-1) adjacent to San Juan Grade Road. However, PG&E will design the facility in a way that minimizes impacts to existing drainage patterns so that any impacts will be less than significant.*	☐	☐	☑	☐
d) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to exceed the capacity of existing or planned stormwater drainage systems or contribute additional sources of polluted runoff.* ***Findings:*** *During construction, hazardous materials spills could affect surface water quality. However, with the implementation of BMPs and applicant proposed measures, impacts will be less than significant.*	☐	☐	☑	☐
e) Otherwise substantially degrade water quality? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to degrade water quality to the degree that it impairs its beneficial use.* ***Findings:*** *The project will not substantially degrade water quality.*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
f) 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? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to place housing within a 100-year flood plain.* ***Findings:*** *This project does not include the construction of housing.*	☐	☐	☐	☑
g) Place within a 100-year flood hazard area structures that would impede or redirect flood flows? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to place structures within a 100-year flood hazard area that would impede or redirect flood flows.* ***Findings:*** *No structures are planned within 100-year floodplains.*	☐	☐	☐	☑
h) 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? ***Threshold of Significance:*** *The project would cause a substantial adverse effect if it were to expose people or structures to a significant risk of loss of property, injury, or death as a result of flooding or failure of a levee or dam.* ***Findings:*** *The project is not near any dams or large waterbodies.*	☐	☐	☐	☑
i) Cause inundation by seiche, tsunami, or mudflow? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to expose people, structures, or land to inundation by seiche, tsunami, or mudflow as a result of changes to hydrological conditions.* ***Findings:*** *The project is not within any areas subject to potential tsunamis, seiche, or mudflow.*	☐	☐	☐	☑

3.9 LAND USE AND PLANNING

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to physically divide a community by a permanent barrier, such as a freeway, canal, or railroad, by which pedestrian or vehicle access to community features and services would be substantially impaired.* ***Findings:*** *The project is not within an established community.*	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to conflict with Monterey County General Plan objectives and policies or zoning ordinances adopted for the purpose of avoiding or mitigating an environmental effect.* ***Findings:*** *The project will conform to applicable General Plan objectives, policies, and zoning ordinances.*	☐	☐	☐	☑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan? ***Findings:*** *The project is not within habitat conservation plan or natural community conservation plan.*	☐	☐	☐	☑

3.10 MINERAL RESOURCES

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? ***Threshold of Significance:*** *The project would have a substantial adverse effect if significant mineral resources identified by the California Department of Conservation would be precluded from extraction.* ***Findings:*** *The project will not affect known mineral resource that would be of value to the region and the residents of the state.*	☐	☐	☐	☑
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? ***Threshold of Significance:*** *The project would have a substantial adverse effect if locally important mineral resources identified by the City of Antioch General Plan would be precluded from extraction. The adverse effect may occur as a result of physical barrier to the mineral resource area or the creation of a conflicting land use between the project and the mineral resource area.* ***Findings:*** *The project will not affect availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.*	☐	☐	☐	☑

3.11 NOISE

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Applicant Mitigation	Less Than Significant Impact	No Impact
a) 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? ***Threshold of Significance:*** *The project would have a substantial adverse effect if construction or operation of the project would result in noise levels in excess of the County of Monterey noise standards applicable to relevant land uses.* ***Findings:*** *Construction will involve equipment that will generate noise. However, impacts will be temporary and less than significant as they will be within the established standards.*	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? ***Threshold of Significance:*** *The project would have a substantial adverse effect if construction or operation of the project would result in the generation of vibration or groundborne noise levels capable of damaging sensitive structures or interfering with land uses activities.* ***Findings:*** *Construction will involve equipment that will generate slight groundborne noise and vibration. However, the nearest residence is located approximately 1,200 feet away so vibration impacts will be less than significant.*	☐	☐	☑	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? ***Findings:*** *There will be negligible sound generated by project operations. Therefore there will be no permanent increase in ambient noise and no impact.*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Applicant Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? ***Findings:*** *Noise impacts during operation will be less than significant as they will be within the established standards.*	☐	☐	☑	☐
e) 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, would it expose people residing or working in the project area to excessive noise levels? ***Findings:*** *The project is not located in an airport land use plan or within 2 miles of a public airport or public use airport.*	☐	☐	☐	☑
f) Lie in the vicinity of a private airstrip, and, as a result, would it expose people residing or working in the project area to excessive noise levels? ***Findings:*** *The project is not located in the vicinity of a private airstrip.*	☐	☐	☐	☑

3.12 POPULATION AND HOUSING

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to induce unplanned population growth in the region (greater than that projected by the Monterey County General Plan). The adverse effect would result in increased demand on public infrastructure, public services, housing, circulation, or other city resources identified in the General Plan elements.* ***Findings:*** *The switching station is being built to ensure reliability for existing customers, does not provide a capacity increase, and will be unmanned. Therefore it will not induce population growth directly or indirectly.*	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? ***Threshold of Significance:*** *The project would have a substantial adverse effect if physical construction and operation of the facility would require substantial numbers of existing housing to be displaced or require replacement housing to be constructed elsewhere.* ***Findings:*** *The project will not displace any existing housing.*	☐	☐	☐	☑

3.13 PUBLIC SERVICES

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) 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: ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to create an increased need for new governmental facilities and services provided by fire protection, police protection, schools, parks, and other public facilities, or would require construction of such services and associated facilities causing other significant environmental impacts to occur.*				
i) Fire protection? ***Finding:*** *The demand for fire protection will not change as a result of the project.*	☐	☐	☐	☑
ii) Police protection? ***Finding:*** *The demand for police protection will not change as a result of the project.*	☐	☐	☐	☑
iii) Schools? ***Finding:*** *The demand for schools will not change as a result of the project.*	☐	☐	☐	☑
iv) Parks? ***Finding:*** *The demand for parks will not change as a result of the project.*	☐	☐	☐	☑
v) Other public facilities? ***Finding:*** *The demand for other public services, such as hospitals and maintenance of public facilities, will not change as a result of the project.*	☐	☐	☐	☑

3.14 RECREATION

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) 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? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it were to create an increased need for new governmental facilities and services provided by parks or would require construction of such services and associated facilities causing other significant environmental impacts to occur.* ***Finding:*** *The project will not increase the use of existing neighborhood and regional parks or other recreational facilities.*	☐	☐	☐	☑
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? ***Finding:*** *The project does not include recreational facilities or require the construction or expansion of recreational facilities.*	☐	☐	☐	☑

3.15 TRANSPORTATION AND TRAFFIC

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would cause an increase in traffic beyond the capacity of existing transportation systems.* ***Findings:*** *Construction traffic is not anticipated to significantly affect the number of trips or volume to capacity ratio on roads.*	☐	☐	☑	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? ***Threshold of Significance:*** *The project would have a substantial adverse effect if project traffic volumes increased existing traffic levels such that the county's level-of-service standards were exceeded.* ***Findings:*** *The traffic volume generated during project construction will be minimal compared to existing traffic levels.*	☐	☐	☑	☐

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
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? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it would result in changes to air traffic patterns that could result in substantial safety risks.* ***Findings:*** *The project will not impact air traffic patterns.*	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***Threshold of Significance:*** *The project would have a substantial adverse effect if construction or operation would result in hazardous design features being created on existing or planned roadways. An adverse effect would also result from incompatible roadway uses, inadequate emergency access, inadequate parking capacity, or inability to implement adopted alternative transportation programs.* ***Findings:*** *The project will not permanently affect design features of roadways.*	☐	☐	☐	☑
e) Result in inadequate emergency access? ***Threshold of Significance:*** *The project would have a substantial adverse effect if construction or operation would result in prolonged lane closures.* ***Findings:*** *The project will not impact emergency access or regional and residential roads.*	☐	☐	☐	☑
f) Result in inadequate parking capacity? ***Findings:*** *The project will not affect street parking in residential areas or parking areas.*	☐	☐	☐	☑
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? ***Findings:*** *The project will not conflict with adopted alternative transportation policies.*	☐	☐	☐	☑

3.16 UTILITIES AND SERVICE SYSTEMS

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? ***Threshold of Significance:*** *The project would have a substantial adverse effect if construction or operation would result in wastewater discharges exceeding waste discharge requirements established by the Regional Water Quality Control Board.* ***Findings:*** *The project will not be subject to wastewater treatment requirements because no wastewater will be generated.*	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it required the construction, operation, or expansion of a water treatment facility, which could cause other significant environmental effects.* ***Findings:*** *The project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.*	☐	☐	☐	☑
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ***Threshold of Significance:*** *The project would have a substantial adverse effect if it required new or expanded stormwater drainage facilities, the construction and operation of which would cause other significant environmental effects.* ***Findings:*** *The project will not require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities.*	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? ***Threshold of Significance:*** *The project would have a substantial adverse effect if new or expanded water supply entitlements would be needed that would cause other significant adverse*	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
environmental effects. ***Findings:*** *The project will not require new water supplies.*				
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? ***Findings:*** *The project will not generate wastewater.*	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? ***Threshold of Significance:*** *The project would have a substantial adverse effect if its solid waste disposal needs accelerated the capacity of a landfill to be reached.* ***Findings:*** *The project will generate minimal amounts of solid waste during construction activities and will not require long term operational usage of any disposal facility.*	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste? ***Findings:*** *The project will comply with all federal, state, and local statutes and regulations related to solid waste.*	☐	☐	☐	☑

4.0 AESTHETICS

4.1 INTRODUCTION

This chapter describes the existing visual resources within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential visual impacts associated with project construction and operation. A summary of public regulations and policies pertaining to visual quality in the project vicinity is also provided.

Visual or aesthetic resources are generally defined as both the natural and built landscape features that can be seen and that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence will alter the perceived visual character and quality of the environment, visual or aesthetic impacts may occur.

The changes in the appearance of the Crazy Horse Canyon Switching Station Project area that will result from the presence of the new switching station and related facilities will not substantially alter the existing visual character or quality of the landscape setting. With incorporation of the measures as described in Section 4.8 Applicant Proposed Measures (APMs), impacts to visual resources resulting from the project will be less than significant.

4.2 METHODOLOGY

The visual analysis is based on review of technical data, including project maps and drawings provided by PG&E, aerial and ground level photographs of the project area, local planning documents, and computer-generated visual simulations. Field observations were conducted in April and May of 2008 and January and November of 2009 to document existing visual conditions in the project area and to identify potentially affected sensitive viewing locations.

This visual study employs assessment methods based, in part, on the U.S. Department of Transportation, Federal Highway Administration's (FHWA) and other accepted visual analysis techniques as summarized by Smardon et al. (1986). This study also addresses the California Environmental Quality Act (CEQA) Guidelines for visual impact analysis. Included are systematic documentation of the visual setting and an evaluation of visual changes associated with the project. In order to convey a sense of existing visual conditions, a set of 16 photographs show representative public views of the project area.

Consistent with FHWA methods, this impact analysis describes changes to existing visual resources and assesses viewer response to that change. Viewer sensitivity is a factor considered in the assessment of visual change, and viewer sensitivity ranges from low to high. Central to this assessment is an evaluation of representative views from which the project will be visible to the public. The visual impact assessment is based on evaluation of the changes to the existing visual resources that will result from construction and operation of the project. These changes were assessed, in part, by comparing and evaluating before and after views selected for visual simulation and detailed analysis (see Section 4.7.2: Simulation Methods).

4.3 PHYSICAL CHARACTERISTICS OF THE PROJECT

The proposed project includes a new 115 kV switching station on a 5.2-acre graded pad enclosed by a 7-foot tall chain-link fence with green slats, as requested by the County, topped with six rows of barbed wire. A 16-foot wide paved access road, approximately 750 feet in length, will connect south to San Juan Grade Road where a new entry gate will be located.

The major project components and their dimensions are summarized in Table 4-1. The tallest switching station components will be the dead-end structures, approximately 36 feet in height, with most of the components 22 feet in height or lower. The switching station equipment and structures will be neutral gray in color with a non-reflective finish. Further description of the switching station is provided in Section 1.5: Project Facilities, and the layout plan and profile are shown in Figures 1-4 and 1-5.

To connect the switchyard to the adjacent existing power lines, six new lattice steel tower structures will replace four existing towers, and five new tubular steel poles will be installed. The lattice steel towers will be approximately 78 to 125 feet tall, and the tubular steel poles will be approximately 60 to 65 feet tall. A new wood pole distribution line will be constructed from San Juan Grade Road to the switching station running roughly parallel to the access road to provide electrical service to the new facility. Additional details of the power line interconnection and distribution lines are described in Section 1.5.2.

Table 4-1: Approximate Dimensions of Major Switching Station Components

Component (number of elements)	Height (feet)	Length (feet)	Width (feet)
Dead-end Structures (4)	36	39	1
Double dead-end Structures (4)	36	78	1
Capacitor Couple Voltage Transformers and Structures (20)	10	1	1
115 kV Disconnect Switches (24)	15	20	6
115 kV Bus Structures (16)	22	34	20
Circuit Breakers (9)	15	12	10
MPAC building (1)	11	64	15
Battery building (1)	11	28	15

4.3.1 Project Landscaping

Landscaping is included as part of the project. Figure 4-8 (see Section 4.8) presents the conceptual landscape plan for the project site. As shown on these figures, informal clusters of native shrubs and trees will be installed around the perimeter of the new switching station and at places along San Juan Grade Road in order to provide screening. Figure 4-8 includes a list of suggested plant species and their respective sizes and growth rates. Applicant proposed measures in Section 4.8 include additional description of the project landscape concept.

4.3.2 Lighting

Lighting consisting of sodium vapor lamps will be provided for security at the switching station site. Exterior lighting will include the use of non-glare light bulbs. Lighting fixtures will be located and designed to avoid casting light or glare toward off-site locations. Light fixtures will be approximately 10 feet tall and will be mounted on bus structures and on galvanized steel posts around the perimeter of the switching station.

4.4 EXISTING CONDITIONS

4.4.1 Regional and Local Landscape Setting

Figure 4-1 is a map showing the project's regional landscape context. The project lies within California's north central coast area at the foot of the Gabilan Range. These mountains are part of the northwest-southeast trending Coast Ranges and form the border between Monterey and San Benito Counties. Peaks in this area rise to 3,000 feet above sea level. To the south is the relatively flat Salinas Valley and the City of Salinas, located about 4 miles away. A grid of rural roadways traverses the relatively flat Salinas Valley agricultural landscape. To the north, a network of winding rural roads provides access to hillside areas including rural residences.

The project vicinity is comprised of undulating terrain punctuated by several densely wooded and vegetated riparian corridors. Among these is Gabilan Creek located on the south side of San Juan Grade Road. Vegetation on hillsides includes oak-woodland savannah with seasonal grasslands interspersed with clusters of oaks. The immediate area is rural and agriculture includes grazing on the hillsides and strawberry fields on flatter terrain.

Rural residences are also located in the general area including approximately eight houses along the south side of San Juan Grade Road. In addition, one residence is located on Old Stage Road approximately 0.5 mile from the site and approximately four hillside homes are located off of Crazy Horse Canyon Road to the north. Lagunita School, a public school on the west side of San Juan Grade Road, lies approximately 500 feet south of the intersection with Crazy Horse Canyon Road.

4.4.2 Visual Character of the Project Site

Situated in a valley between two hill crests, the project site lies approximately 0.5 mile northeast of the Crazy Horse Canyon Road - San Juan Grade Road intersection. Near the intersection, both roadways are located at the base of slopes, which results in substantial topographic screening

with respect to views toward the site. In this general location existing transmission facilities, including lattice towers associated with four convening overhead lines, are established landscape features. The switching station site is nestled on the side of a hill between two lower ridges to the southwest and northeast, with an entry gate on San Juan Grade Road. Currently used for grazing, the site's vegetation is predominately non-native grassland with scattered individuals and groups of oaks. Oak clusters are also found just north of the project site. The adjacent ridges and mature trees located along the roadways screen views of the site from many locations in the project area. Figure 4-2 depicts the project site in its localized landscape context.

4.4.3 Project Viewshed and Potentially Affected Public View Corridors

The project viewshed is defined as the area from which the new switching station and transmission facilities will be visible. Due to intervening vegetation and topography, the viewshed for the project is contained to a limited area located south of the site. From close range, the switching station site is only visible from a short segment of San Juan Grade Road. In addition, more distant views are available from a portion of Old Stage Road located about 0.5 mile away. Because the project site is set back from the roadway and is partially screened by topography, it is not generally visible from locations further away because views toward the project are obstructed. For reference, it may be noted that visual details typically become apparent to the viewer when they are seen in the foreground, at distances of 0.25 to 0.5 mile or less. For purposes of the project PEA visual analysis, the primary focus is considered to be this foreground viewshed area, where visual details are apparent, and up to approximately 1.0 mile from the proposed project area, where change could be noticeable.

A set of 16 photographs, presented on Figures 4-3A through 4-3D, portray representative public views in the project area. Figure 4-2 is an aerial photograph showing the location of the photo viewpoints and the project site. The following description of the general character found in the project viewshed is organized according to the three key public viewing corridors: Crazy Horse Canyon Road, San Juan Grade Road, and Old Stage Road. As demonstrated by these photographs, existing transmission towers and overhead conductors including those associated with the project are established landscape features in this area. Other visible built features include distribution lines, fences, agricultural structures, and rural residences.

4.4.3.1 Crazy Horse Canyon Road: Photos 1 through 5 (Figures 4-3A and 4-3B)

Crazy Horse Canyon Road runs south from Highway 101, winding downhill through the canyon and ending near the project area, just south of the intersection with San Juan Grade Road. Photo 1, taken from southbound Crazy Horse Canyon Road, is a view near the driveway to four hillside residences located approximately 0.75 mile from the site. This view encompasses wooded and grass-covered hillside terrain with overhead conductors and existing transmission structures seen in the foreground and the distance. Other visible landscape elements seen in this view include an existing distribution line on the west side of the road and intermittent mature roadside vegetation. Intervening landform and vegetation screen the site. Photo 2 is a north-facing view from the roadway that shows a recently-built hillside residence. Photo 3, taken further south on Crazy Horse Canyon Road, includes an open hillside view toward the site with existing transmission towers seen on the skyline; topography screens the switching station site. Photo 4 is a view from

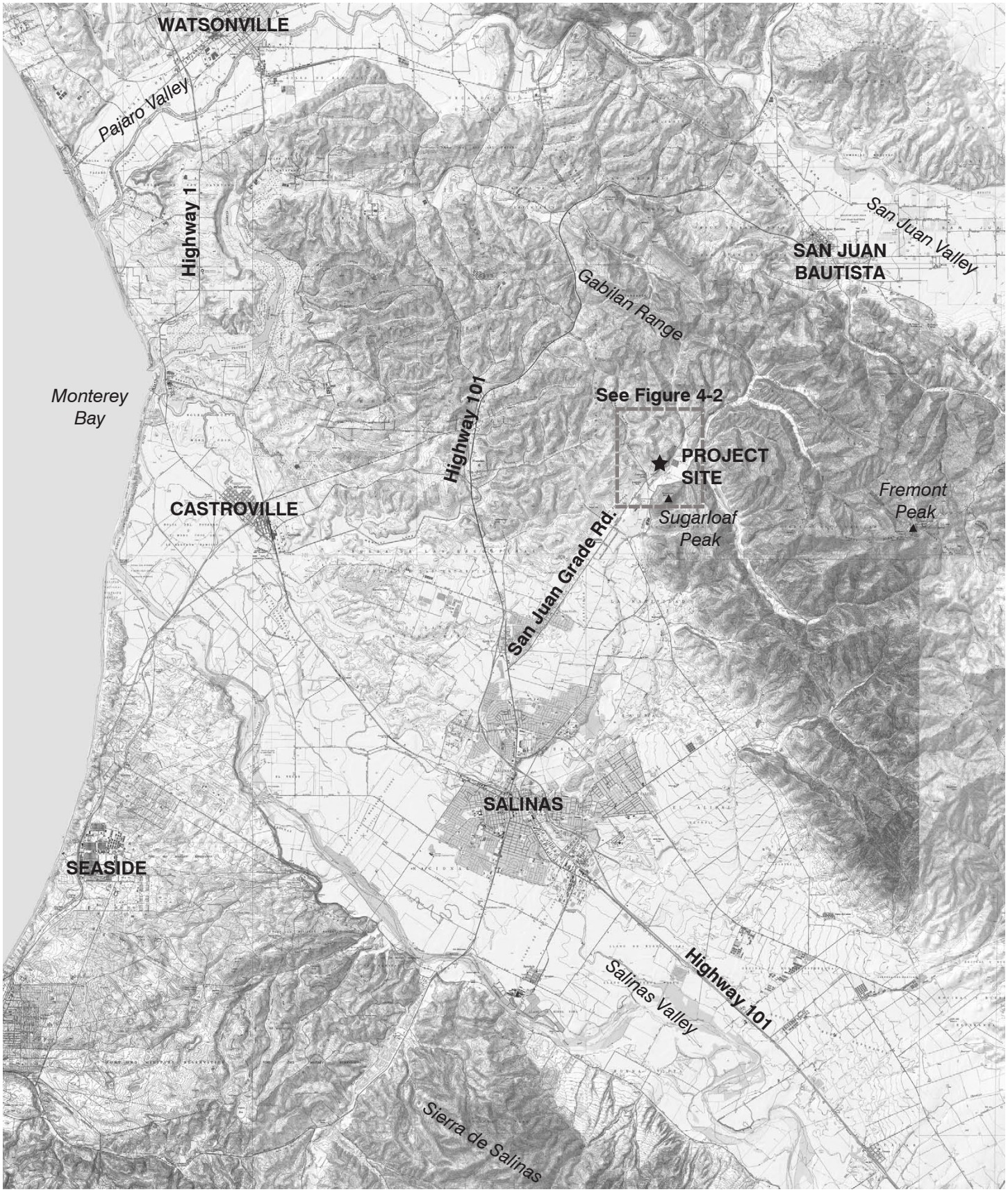


Figure 4-1
Regional Landscape Context
Crazy Horse Canyon Switching Station

040610

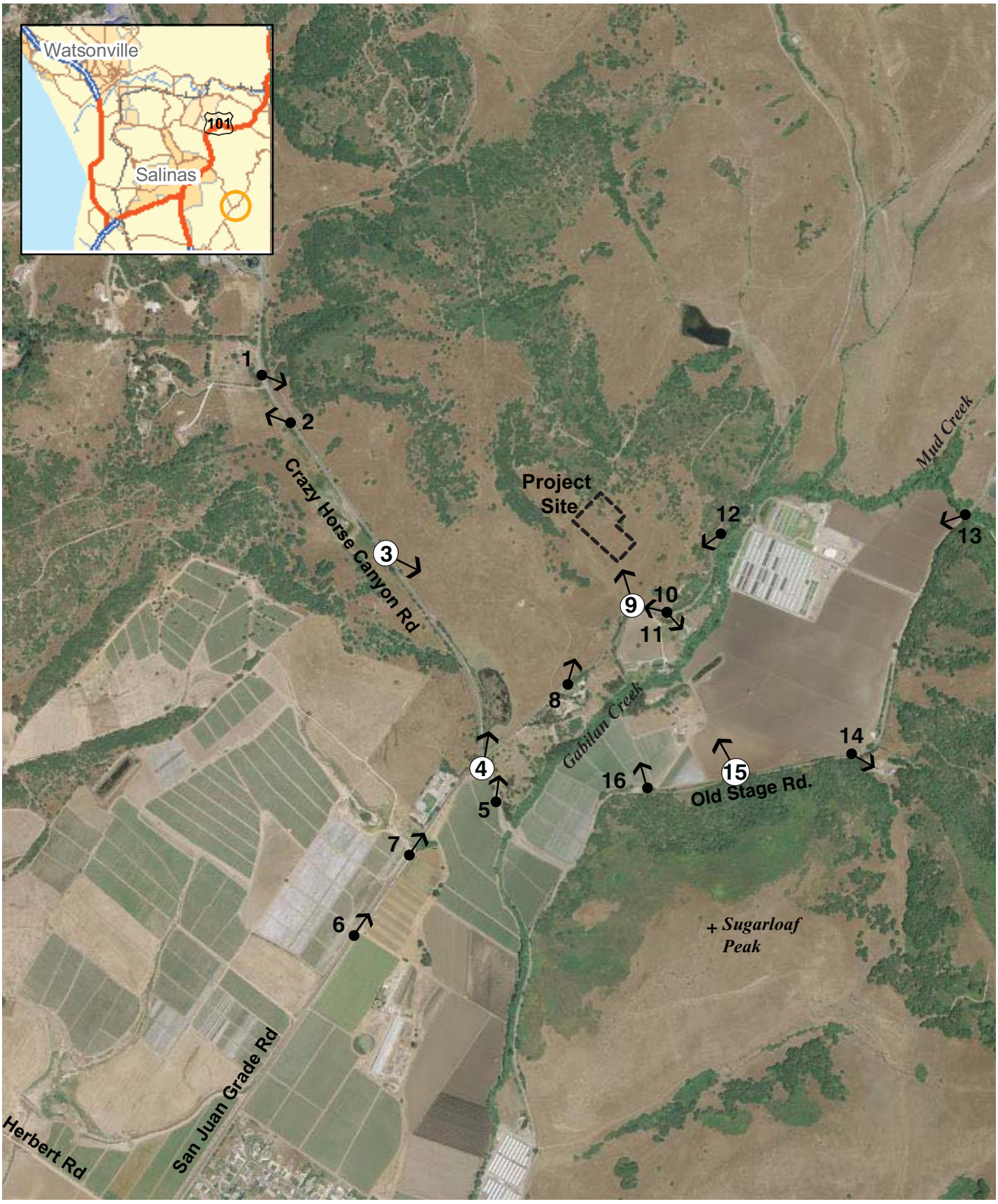


Photo Viewpoint
Simulation Viewpoint
Project Site

0 1000 2000 ft.

N

Figure 4-2
Photo Viewpoint Locations
Crazy Horse Canyon Switching Station

041910

1. Crazy Horse Canyon Road near residences looking southeast

2. Crazy Horse Canyon Road looking north

3. Crazy Horse Canyon Road looking southeast*

4. San Juan Grade Road at Crazy Horse Canyon Road looking north*

*Used in simulation view

PG&E 040610

Figure 4-3A
Photographs of the Project Site and Surrounding Area
Crazy Horse Canyon Switching Station

5. Crazy Horse Canyon Road looking northeast

6. San Juan Grade Road looking northeast

7. San Juan Grade Road at Lagunita School looking northeast

8. San Juan Grade Road near Crazy Horse Road looking north

PG&E 040610

Figure 4-3B
Photographs of the Project Site and Surrounding Area
Crazy Horse Canyon Switching Station

9. San Juan Grade Road looking north*

10. San Juan Grade Road looking northwest

11. San Juan Grade Road looking south toward residence

12. San Juan Grade Road looking southwest

*Used in simulation view

040610

Figure 4-3C
Photographs of the Project Site and Surrounding Area
Crazy Horse Canyon Switching Station

13. Old Stage Road near Mud Creek looking southeast

14. Old Stage Road looking southeast

15. Old Stage Road looking north *

16. Old Stage Road at driveway to agricultural facility looking north

*Used in simulation view

PG&E 040610

Figure 4-3D
Photographs of the Project Site and Surrounding Area
Crazy Horse Canyon Switching Station

the roadside pullout at the Crazy Horse Canyon Road/San Juan Grade Road intersection, a four-way stop, and the location of an historic roadside plaque. From this viewing location and locations further south, the switching station site lies behind the ridgeline, and intervening vegetation partially screens transmission structures. Photo 5 demonstrates that, from south of the intersection, roadside trees partially screen views of the site.

4.4.3.2 San Juan Grade Road: Photos 6 through 12 (Figures 4-3B and 4-3C)

San Juan Grade Road is a two-lane road that intersects Crazy Horse Canyon Road and passes the Lagunita School as it extends south into Salinas. The road is part of the Juan Bautista de Anza National Historic Trail. Agricultural fields and intermittent mature vegetation border the roadway in this area. Photos 6 and 7 are views taken from San Juan Road south of the intersection with Crazy Horse Canyon Road; these are open views toward the site. These photos show that existing transmission towers are visible and that a low ridge screens the switching station site. Photo 8, a view from San Juan Grade Road just southwest of the site, includes a grass-covered ridge in the foreground that screens views of the switchyard site.

North of its intersection with Crazy Horse Canyon Road, San Juan Grade Road narrows as it winds through the Gabilan Range toward the town of San Juan Bautista. Photo 9 taken from northbound San Juan Grade Road shows a close-range, unobstructed view of the site. Photo 10 is another close-range roadway view near the proposed entry gate. Photo 11 shows a nearby residence located on the south side of San Juan Grade Road with roadside landscape screening seen in the foreground. Photo 12, taken further north along San Juan Grade Road, demonstrates that dense, mature vegetation and topography screen views toward the site.

4.4.3.3 Old Stage Road: Photos 13 through 16 (Figure 4-3D)

Old Stage Road, a winding two-lane rural road, runs at the base of Sugarloaf Peak south of the Gabilan Range. The road provides access to approximately 20 rural residences and various agricultural uses. South of the road, Sugarloaf Peak rises steeply, limiting views to the south. Four representative views from this part of Old Stage Road illustrate the landscape's rural character while also demonstrating that lattice transmission towers, wood distribution poles, and overhead conductors are established elements seen within the landscape setting.

Portions of the project site are visible from some locations along approximately 1.0 mile of Old Stage Road. Photo 14 shows a residence set back from the roadway in this area. Photo 15, taken directly south of the site from about 0.5 mile away, is a panoramic view that encompasses open land in the foreground with dense vegetation and open hillsides seen below the partially-wooded ridgeline. Photo 16 includes open agriculture fields in the foreground with dense riparian vegetation along Gabilan Creek. From these two vantage points, existing lattice transmission towers and portions of the site are visible on the hillside. Vegetation along Old Stage Road screens many views of the site from this roadway. East of where Gabilan Creek crosses Old Stage Road, dense riparian vegetation and topography screen the site from roadway views.

4.5 POTENTIALLY AFFECTED VIEWERS

Accepted visual assessment methods, including those adopted by the FHWA, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria for evaluating visual impact significance, can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. According to the U.S. Department of Transportation Visual Impact Assessment for Highway Projects, research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources, while others tend to be distracting. The project viewshed includes two primary types of concerned viewers—motorists and residents.

Motorists are the largest affected viewer group. Included in this group are motorists traveling on Crazy Horse Canyon, Old Stage and San Juan Grade Roads. These motorists may include local residents and agricultural workers who are familiar with the visual setting as well as other roadway travelers such as travelers from Highway 101 into northern Salinas and recreational users exploring the De Anza Trail. On Old Stage Road, views are limited to less than 1.0 mile of the roadway. On San Juan Grade Road south of the intersection with Crazy Horse Road, the maximum posted speed is 55 miles per hour (mph), with some areas near residences located south of the project posted for a maximum of 35 mph. North of the intersection where San Juan Grade Road becomes narrower and more winding, travel speeds are considerably slower. On Crazy Horse Canyon Road north of the San Juan Grade Road intersection and on San Juan Grade Road south of the intersection, the maximum posted traffic speed is also 55 mph. In general, topography and mature vegetation limit direct roadway views toward the site. Given these conditions, the view duration for motorists is brief—estimated at less than a minute. Viewer sensitivity of motorists is considered low to moderate.

The other primary viewer group includes a limited number of residents with homes located off of Crazy Horse Canyon, Old Stage and San Juan Grade Roads. Approximately four residences located 0.8 mile north of the site on Crazy Horse Canyon Road have views toward the site (refer to Figure 4-3A, Photo 2). However, views of the site from these residences are generally screened by topography. Approximately eight residences located on the south side of San Juan Grade Road in the project vicinity may also have views of the project. As shown in Photo 11, these residences generally lie at a lower elevation than the roadway and are screened from the road by a combination of vegetation and fences. One rural residence along Old Stage Road, approximately 0.6 mile from the site, may have views of the project site. However, this residence is set back from the roadway and screened by mature vegetation (refer to Figure 4-3D, Photo 14). Partially due to longer view duration, the sensitivity of residential viewers is considered moderate to high.

4.6 AREA PLANS AND POLICIES AND PROJECT CONSISTENCY

Because the California Public Utilities Commission (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 visual resources is provided for informational purposes and to assist with CEQA review. As noted in italics

following each discussion below, the construction and operation of this project does not conflict with any environmental plans, policies, or regulations adopted by agencies with jurisdiction over local aesthetic regulations.

4.6.1 Federal

The National Trail System Act of 1968 designated many historic and scenic trails across the country. The act provides guidelines for acquiring privately owned lands along the trails. These guidelines do not set forth any specific policies regarding protection of visual resources (National Park Service 2008b).

In addition to being a proposed county scenic route, San Juan Grade Road is part of the National Park Service (NPS)–administered, 1,210-mile Juan Bautista de Anza Trail historic route from Nogales, Arizona to San Francisco, California (National Park Service 2008a). This trail commemorates the first overland route connecting New Spain (Mexico) with San Francisco in 1775-1776. An historic marker is situated on the south side of San Juan Grade Road at the Crazy Horse Canyon Road intersection at the pullout. Views toward the plaque face away from the project.

The Figure 4-5B simulation, a view from a location near the historic marker, demonstrates that the project will not directly affect views of the historic marker and will not substantially alter existing views from the pullout area. Section 4.7.3 Visual Change includes additional visual impact discussion.

4.6.2 State

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

There are no designated or eligible state scenic highways within the project viewshed. In Monterey County, Highway 156 between Highway 1 and Interstate 101 is a designated scenic highway, and Interstate 101 north of Highway 156 is an eligible scenic highway. These roadway corridors lie more than 3.5 miles east of the project on the other side of a ridgeline and the project is not visible from either roadway.

4.6.3 Local

As stated above, 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 visual resources is provided for informational purposes and to assist with CEQA review.

4.6.3.1 Monterey County General Plan

According to the Monterey County General Plan, both Crazy Horse Canyon Road and San Juan Grade Road are proposed but not designated county scenic routes (Monterey County 2007). As such, these roadway corridors are recognized visual resources. Goal C-5.3 of the Scenic Highways Section of the Circulation Element of the General Plan states:

> Guidelines shall be developed to assure that development and land use in the Scenic Highway Corridors are compatible with the surrounding area using techniques that include, but are not limited to:
>
> a. placement of utilities underground, where feasible;
> b. architectural and landscape controls;
> c. outdoor advertising restrictions;
> d. encouragement of area native plants, especially on public lands and dedicated open spaces; and,
> e. cooperative landscape programs with adjoining public and private open space lands (Monterey County 2007, p. CIRC-9).

Figures 4-4 through 4-6 are visual simulations that portray the project from Crazy Horse Canyon Road and San Juan Grade Road, two proposed county scenic routes. The simulations demonstrate that the project represents a minor degree of visual change with respect to views from these roads (see Section 4.7.3 Visual Change). In addition, the project conforms with Monterey County General Plan policies in that the project is located in an area where transmission structures are established features in the landscape, no outdoor advertising is proposed as part of the project, and the project landscaping will incorporate native plants (see applicant proposed measures in Section 4.8 and Figure 4-8).

4.6.3.2 Greater Salinas Area Plan

The Greater Salinas Area Plan (1985), part of the Monterey County General Plan, identifies Old Stage Road as very scenic and visually sensitive. The plan recommends that land adjoining the roadway be responsibly managed to preserve its scenic qualities.

"Old Stage Road at Williams Road affords pristine views of Fremont Peak and the Gabilan Mountain Range. This view is maintained as Old Stage Road undulates north past the Kaiser Dolomite Quarry. Past the quarry, Old Stage Road veers east and follows Gabilan Creek along the base of Sugarloaf Peak." (Monterey County 1985).

The site is partially visible from some locations along Old Stage Road (refer to Figure 4-3D, Photo 15). However, as shown in Photo 16, views from this roadway are partially screened by mature vegetation along Gabilan Creek. The project will not affect views of the Gabilan Range or Fremont Peak from this roadway. Figure 4-7, a simulation from Old Stage demonstrates that

the project does not substantially alter the overall character of the landscape currently seen from Old Stage Road (see Section 4.7.3 Visual Change).

4.6.3.3 Monterey County Zoning Ordinance

Title 21 of the Monterey County Zoning Ordinance, part of the Monterey County Code, provides public policy and guidance with respect to visual quality in inland areas including the project. This ordinance includes requirements for protecting visual resources such as oaks and other native trees as well as the ridgelines of hills.

Section 21.66.010 sets forth standards for ridgeline development and requires that "ridgeline development, as conditioned by permit, will not create a substantially adverse visual impact when viewed from a common public viewing area." (Monterey County 2008, Section 21.66.031). Section 21.46 designates requirements for visually sensitive districts.

Project construction will require removal of some oak trees, and the project includes replacement oak planting consistent with the County Zoning Ordinance (see Figure 4-8 Conceptual Landscape Plan). The project is located below a ridgeline and will be largely screened by existing vegetation and topography as well as new project landscaping. Therefore it will not substantially alter views of existing ridgelines (see Section 4.7.3 Visual Change).

4.7 IMPACTS

4.7.1 Significance Criteria

To determine the significance of the anticipated visual changes, the project's effects were evaluated in light of the direction provided by the CEQA Guidelines. Appendix G of the Guidelines indicates that a project may have a significant effect on the visual environment if it will:

- 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; or
- create a new source of substantial light or glare, which will adversely affect day or nighttime views in the area.

Factors considered in applying these criteria to determine significance include the extent of project visibility from residential areas and designated scenic routes; the degree to which the various project elements will 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. Project conformance with public policies regarding visual quality was also taken into account.

4.7.2 Simulation Methods

As part of the aesthetic impact evaluation of the project, visual simulations were produced from four vantage points using computer-modeling and rendering techniques. The simulations illustrate the location, scale, and general appearance of the project from key representative public views. The technical methods used for producing the computer-generated simulation images are outlined below.

The visual simulations employ photographs taken using a digital single lens reflex (SLR) camera with a 50 millimeter (mm) equivalent lens which represents a horizontal view angle of 40 degrees. Existing Geographic Information Systems (GIS) and engineering data and digital aerial photographs provided the basis for developing an initial digital model. Three-dimensional (3-D) models of the proposed switching station and transmission structures were developed using engineering design data supplied by PG&E and combined with the digital site model to produce a complete computer model of the proposed project. For the simulation viewpoints, photograph locations from Global Positioning System (GPS) field data were also entered into the 3-D model using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlaid on the photographs to verify scale and viewpoint locations. Digital visual simulation images were then produced based on computer renderings of the 3-D model combined with selected digital site photographs. The final "hardcopy" visual simulation images contained in this visual analysis were printed from the digital image files and produced in color on 8.5-inch by 11-inch sheets as Figures 4-4A through 4-7C.

The simulation vantage points (VP) are listed below and delineated on Figure 4-2.

- Crazy Horse Canyon Road (VP 3)	Figures 4-4A and 4-4B
- San Juan Grade Road at Crazy Horse Canyon Road (VP 4)	Figures 4-5A and 4-5B
- San Juan Grade Road (VP 9)	Figures 4-6A through 4-6 C
- Old Stage Road (VP 15)	Figures 4-7A through 4-7C

For each of the simulation viewpoints listed above, the “A” figure presents the existing view and the “B” figures are simulations that portray the proposed project without landscaping. Figures 4-6C and 4-7C show the project with landscaping that is proposed as part of the project. The conceptual landscape plan, presented on Figure 4-8, is described in Sections 4.3.1 and 4.8, respectively. The simulation images depict native shrub and tree species at approximately 8 years of maturity with estimated tree heights of 15 to 22 feet (Reimer and Mark 2009).

THIS PAGE IS INTENTIONALLY LEFT BLANK

Note: Refer to Figure 4-2 for viewpoint location

040610

Figure 4-4A
Existing View from Crazy Horse Canyon Road (VP 3)
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-4B
Visual Simulation from Crazy Horse Canyon Road
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location

040610

Figure 4-5A
Existing View from San Juan Grade Road at Crazy Horse Canyon Road (VP 4)
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-5B
Visual Simulation from San Juan Grade Road at Crazy Horse Canyon Road
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location

040610

Figure 4-6A
Existing View from San Juan Grade Road (VP 9)
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location.
PG&E gate and access road are out of view to the right.
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-6B
Visual Simulation from San Juan Grade Road
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location.
PG&E gate and access road are out of view to the right.
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-6C
Visual Simulation from San Juan Grade Road with Landscaping
Crazy Horse Canyon Switching Station

THIS PAGE IS INTENTIONALLY LEFT BLANK

Note: Refer to Figure 4-2 for viewpoint location

040610

Figure 4-7A
Existing View from Old Stage Road (VP 15)
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-7B
Visual Simulation from Old Stage Road
Crazy Horse Canyon Switching Station

Note: Refer to Figure 4-2 for viewpoint location
Preliminary and subject to change based on California Public Utilities Commission requirements, final engineering, and other factors.

040610

Figure 4-7C
Visual Simulation from Old Stage Road with Landscaping
Crazy Horse Canyon Switching Station

4.7.3 Visual Change

The project will introduce a new switching station in a lower-lying area between two hillcrests. In this general location, large-scale transmission structures are established landscape features. To varying degrees, project components will be visible to the public from a limited area. The following discussion is an evaluation of the visual changes associated with the project, including proposed landscaping, as seen from four key representative public vantage points.

Figures 4-4A and 4-4B present "before and "after" views looking southeast toward the project from Crazy Horse Canyon Road, approximately 0.5 mile north of the San Juan Grade Road/ Crazy Horse Canyon Road intersection. This view currently includes lattice structures seen along the skyline with Sugarloaf Peak in the backdrop on the right.

The Figure 4-4B simulation portrays the removal of three existing lattice towers and the addition of four new towers on the left side of the view. The simulation demonstrates that the switching station, approximately 1,700 feet away from the viewpoint and sited over the ridgeline, will not be seen from this viewpoint.

Figure 4-5A depicts a view looking north from the pullout at the intersection of San Juan Grade and Crazy Horse Canyon Roads. This viewpoint, located near a plaque commemorating the historic 1846 Battle of the Natividad, represents the view near the historic marker as well as a limited number of general close-range views from the south. From this location, an open grass-covered hillside is visible in the foreground and more than a half-dozen lattice towers and other smaller transmission structures appear on the hillside silhouetted against the sky. One tower located about 200 feet away appears prominently in the foreground.

The Figure 4-5B simulation shows new lattice towers toward the center and left of the image. From this vantage point, the switching station located approximately 0.5 mile away is not visible. Three lattice towers have been removed and six towers and one tubular steel pole have been added. A comparison of the before and after views demonstrates that, given the presence of existing towers seen in the background and foreground, the new lattice towers are not particularly noticeable.

Figures 4-6A through 4-6C portray the view looking north from San Juan Grade Road approximately 0.4 mile northeast of the Crazy Horse Canyon Road intersection. This view currently includes a grass and tree-covered hillside in the foreground with existing lattice towers and a pole in the background along the skyline. Wood fence posts and a chain-link gate also appear in the foreground along the roadside. As noted previously, although an unobstructed view of the site is available from the simulation vantage point, views of the site are largely screened by topography and roadside vegetation from most places along San Juan Grade Road.

The Figure 4-6B simulation shows portions of the new switching station against the hillside at the center of the view. The new structures are located about 650 feet away from the photo vantage point and are situated on a graded pad. The simulation also shows graded hillside and fill areas below the structures near the center of the view. Two new lattice towers can also be seen

against the skyline near the center and right side of the image. Two steel poles appear against the hillside and sky, one on the far right and one toward the left. New perimeter chain-link fencing and two new wood poles supporting a new distribution line running alongside the access road are also visible on the hillside. In this simulation view that shows the project without proposed landscaping, the new switching station and associated transmission and distribution structures appear somewhat prominent. Although this simulation represents a view that is seen only briefly by travelers along San Juan Grade Road, the visual effect could represent a significant visual change.

Figure 4-6C depicts the project with proposed landscaping. This simulation demonstrates that landscaping installed on the north side of the roadway and around the perimeter of the switching station will substantially screen the project from roadway views. Small portions of some transmission structures would be visible beyond the trees. Therefore, with proposed landscaping, the switching station structures will barely be noticeable from San Juan Road.

Figures 4-7A through 4-7C depict “before” and “after’ views looking north from Old Stage Road approximately 0.5 mile south of the site. This view from a slightly elevated roadway location shows a flat, agricultural field in the foreground and barns and other agricultural structures located about 800 feet away. Dense vegetation located along the Gabilan Creek riparian corridor and a row of cypress trees associated with a residence located off of San Juan Grade Road are visible beyond. The site’s grass-covered slope is visible near the center of the view, and a dark drift fence delineates part of the site. Mature oaks cover most of the ridgeline and lattice towers and poles are visible on the ridgeline above the site.

Figure 4-7B shows the new switching station on the far hillside below the tree-covered ridgeline on the right side of the view. The simulation shows that, where the switching station appears, a cluster of oak trees has been removed. The simulation also shows a graded hillside below the structures. In addition, one of the existing lattice towers currently seen along the skyline is removed, one is added, and another is relocated. In this view, the switching station facility will be seen below the existing oak woodlands and will not appear on the skyline. The switching station, graded hillsides, and transmission and distribution structures are visible from this location along old Stage Road; however due to the viewing distance and given the presence of numerous existing transmission structures, the change will not substantially alter the overall character or composition of the landscape setting.

The Figure 4-7C simulation shows the switching station with the proposed landscaping. Informal groupings of oaks and shrubs partially screen the switching station and help integrate the new facility into the hillside context. The plants will reach greater heights at full maturity and therefore will further screen project components. In light of the level of landscape screening provided by project landscaping and given the presence of various existing transmission structures currently seen from this viewpoint, project-related visual change seen from Old Stage Road will represent an incremental visual effect that will not be particularly noticeable.

In summary and as demonstrated by the Figure 4-4 through 4-7 simulations and the Figure 4-3 existing conditions photographs, the new switching station and related transmission facilities will

represent a minor incremental visual change when seen from limited portions of Crazy Horse Canyon Road, San Juan Grade Road, and Old Stage Road. Portions of the project will be visible from limited locations, such as from the view shown in the simulations from San Juan Grade Road and from Old Stage Road (Figures 4-6 and 4-7, respectively). However, the affected roadway views will be relatively brief in duration, lasting less than a minute. With landscaping proposed as part of the project, the project will not be particularly noticeable and will not substantially alter the existing landscape character.

4.7.4 Visual Impacts

4.7.4.1 Construction

Construction-related visual impacts will result from the presence of equipment, materials, and work crews at the project site. Given the relatively limited number of affected viewers in the immediate area, these effects will not be particularly noticeable to the public. Visual effects as a result of construction will be less than significant because the impacts will be temporary, short-term, and limited to a relatively small number of viewers.

4.7.4.2 Substantial Adverse Effect on a Scenic Vista

CEQA requires the project be evaluated as to whether its implementation has a substantial, adverse effect on a scenic vista. For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. As such, there are no recognized scenic vistas within the project viewshed. As outlined in Section 4.7.3: Visual Change, the project will not substantially alter views of the hillsides and ridgelines that are currently experienced by the public. No mitigation is required.

4.7.4.3 Substantial Damages to Scenic Resources, Including, But Not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway

As documented in section 4.6.1, there are no designated State Scenic Highways within the project viewshed; therefore, the project will not substantially damage scenic resources within a State Scenic Highway.

Crazy Horse Canyon Road and San Juan Grade Road are proposed but not designated county scenic routes in the Monterey County General Plan (Monterey County 2007), and Old Stage Road is identified as scenic and visually sensitive by the Greater Salinas Area Plan (Monterey County 1985). As described in Section 4.7.3 and shown in Figures 4-4A through 4-7C, the project will not have a significant visual effect on views from these roads. Therefore, no mitigation is required.

4.7.4.4 Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings

The project will not substantially degrade the existing visual character or quality of the site and its surroundings because it will involve installation of a landscaped switching station that is largely screened from public view corridors. In public views of the site from surrounding

roadways and residential areas, the project will generally not be visible. Views of the switching station site from the north are obstructed by existing topography and vegetation. Limited, brief views of the project will be seen from the south along San Juan Grade Road and Old Stage Road. Transmission facilities will be visible from a slightly larger area, yet will also be generally screened by topography and vegetation. Landscaping proposed as part of the project will provide effective screening and ensure that this effect is less than significant.

4.7.4.5 Creates a New Source of Substantial Light or Glare, Which Will Adversely Affect Day or Nighttime Views in the Area

The project is located in a rural setting with little roadway lighting. Lighting sources tend to be localized and associated with residences and other buildings such as the nearby school. Project security lighting will create an additional source of nighttime light that may be visible from some nearby locations off-site. With the use of non-glare fixtures directed on-site and screening provided by project landscaping, these project-related light and glare effects are considered incremental and less than significant.

4.8 APPLICANT PROPOSED MEASURES

Implementation of the following APMs will minimize potential visual effects. These measures include the use of non-reflective components, revegetation, and the installation of landscape screening using native plant material.

4.8.1 Construction Activities

Construction activities will be kept as clean and inconspicuous as practical. Where practical, construction storage and staging will be screened from close-range residential views.

4.8.2 Revegetation

When project construction has been completed, all disturbed terrain surrounding the switching station site will be restored through recontouring and revegetation using a seed and plant mixture approved by a qualified landscape/horticultural professional.

4.8.3 Conceptual Landscape Plan

The project includes new landscaping. Figure 4-8 presents a conceptual landscape plan for the Crazy Horse Switching Station Project. The project landscaping will screen views of the new facility and help integrate its appearance with the surrounding landscape setting. Project landscaping involves installing informal groupings of native trees and shrubs around the perimeter of the switching station and along San Juan Grade Road in order to provide visual screening. Suggested plant material includes a variety of deciduous and evergreen native oaks. Irrigation/regular watering will be provided during the initial two years following landscape installation in order to ensure the establishment of the plants. The water will be sourced from PG&E yards in Moss Landing or Salinas. As noted on Figure 4-8, landscaping under transmission lines will consist of smaller trees and/or shrubs to allow for overhead clearance. All

planting will be consistent with PG&E operational requirements for landscaping in proximity to overhead electric facilities.

4.8.4 Non-Reflective Components

Non-specular conductors will be used to reduce the potential for new sources of glare. A non-reflective finish will be used for substation equipment to reduce the potential for new sources of glare.

4.8.5 Gate Design

The project incorporates use of an entry gate designed to blend in with the existing rural setting found along on San Juan Grade Road and the general project area.

4.8.6 Fence Design

The chain link fence that will enclose the graded switching station pad will include green slats, as requested by the County. The green slats will provide a measure of screening and help reduce the project's potential visibility.

4.9 REFERENCES

California Department of Transportation. 2007. Online: http://www.dot.ca.gov/hq/LandArch/scenic_highways/ Site visited May 29, 2008.

California Public Utilities Commission (CPUC). 1995. *Public Utilities Commission of the State of California, General Order No. 131-D.* Adopted August 11, 1995, Decision 95-08-038.

U.S. Department of Transportation, Federal Highway Administration (FHWA). 1988. *Visual Impact Assessment for Highway Projects.* Washington, D.C.: Publication No: FHWA-HI-88-054.

Monterey County. 1985. *Greater Salinas Area Plan: A Part of the Monterey County General Plan.* Approved January 9, 1985.

_____. 2007. *Monterey County General Plan.* Draft, November 6, 2007.

_____.2008. *Monterey County Code.* Passed August 19, 2008.

National Park Service. 2008a. *Juan Bautista de Anza National Historic Trail Guide.* Online: http://www.solideas.com/DeAnza/TrailGuide/. Site visited May 8, 2008.

_____.2008b. *National Trails System Act.* L. 90-543, as amended through P.L. 110-229, May 08, 2008. Online: http://nps.gov/nts/legislation.html.

Reimer, Jeffrey L. and W. Mark. "SelecTree: A Tree Selection Guide." Online: http://selectree.calpoly.edu/ Site visited on March 30, 2009.

Smardon, RC, J.F. Palmer, and J.P. Felleman, editors. 1986. *Foundations for Visual Project Analysis.* New York: Wiley.

U.S. Department of Transportation, Federal Highway Administration. 1988. *Visual Impact Assessment for Highway Projects.* Washington, D.C.: Publication No: FHWA-HI-88-054.

U.S. Geological Survey. Terraserver Maps. 1999. Online: http://terraserver-usa.com/.

PLANT PALETTE LEGEND

SYMBOL	TYPE OF PLANT	SUGGESTED SPECIES	NUMBER INSTALLED	CONTAINER SIZE/ PLANTED HEIGHT	GROWTH RATE	APPROXIMATE MAXIMUM HEIGHT/SPREAD
	Deciduous tree	Quercus lobata Quercus douglasii	8	15 Gallon/6 Feet	2'-3'/YR 1'/YR	>65'/60' 50'/50'
	Broad leaf evergreen tree	Quercus agrifolia	44	15 Gallon/6 Feet	2'/YR	65'/65'
	Large evergreen shrubs	Ceanothus thyrsiflorus Garrya elliptica Rhamnus californica	44	10 Gallon/3 Feet	2'-3'/YR 2'/YR 2'/YR	20'/15' 25'/20 20'/15'
	Small to medium evergreen shrubs	Baccharis pilularis Ceanothus gloriosus	34	5 Gallon/1'-6" Feet	N.A. N.A.	2'/6' 1.5'/12'

Estimates based on information contained in: Reimer, Jeffrey L. and W. Mark. "SelecTree: A Tree Selection Guide." http://selectree.calpoly.edu/ (Site visited 30 March, 2009).

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

INFORMAL GROUPINGS OF MIXED OAKS AND NATIVE SHRUBS

NEW ACCESS ROAD

FENCE LINE

SIMULATION VIEWPOINT

9

EXISTING LARGE SHRUBS AND TREES (TYP.)

SAN JUAN GRADE ROAD

INFORMAL GROUPINGS OF SHRUBS BELOW OVERHEAD CONDUCTORS

OVERHEAD CONDUCTOR

North

0 150

Feet

ENVIRONMENTAL VISION
04-26-2010

LANDSCAPE CONCEPT

The landscape plan calls for installing informal groupings of native trees and shrubs along the southwestern edge of the facility's perimeter fence and along a limited portion of San Juan Grade Road where open views toward the site are available in order to partially screen views from the roadway and surrounding area. Landscaping at the Crazy Horse Switchyard is intended to appear naturalistic and similar to undisturbed vegetation patterns in the site vicinity.

NOTES:

1. Final landscape layout will be determined in conjunction with final site planning and survey data.

2. Smaller trees and shrubs shall be planted below overhead conductors to allow for clearance. All planting shall be consistent with PG&E requirements for landscaping in proximity to electric transmission facilities.

3. Owner will provide regular truck-watering using recycled water or other non-potable source for a minimum two-year period while landscape becomes established.

4. Owner will retain a licensed landscape contractor to provide periodic maintenance including removal and replacement of dead plant material and periodic evaluation of site landscaping to determine additional landscaping maintenance needs.

Figure 4-8
Conceptual Landscape Plan
PG&E Crazy Horse Canyon Switching Station

THIS PAGE IS INTENTIONALLY LEFT BLANK

[BACK OF FIGURE 4-8]

5.0 AIR QUALITY

5.1 INTRODUCTION

This chapter describes the existing air quality within Pacific Gas & Electric's Crazy Horse Canyon Switching Station Project (project) area and evaluates the potential air quality impacts and potential greenhouse (GHG) emissions associated with project construction and operation. Although short-term emissions from project construction will result in some temporary impacts, the project will result in a less than significant impact to air quality and GHG emissions. The project will not cause any objectionable odors, expose sensitive receptors to increased pollutant concentrations, or otherwise significantly affect air quality.

5.2 METHODOLOGY

Construction emissions were estimated using construction equipment emission factors from URBEMIS 2007 (version 9.2.4) and truck emission factors from EMFAC2007 (version 2.3). Particulate matter (PM_{10}) emissions from soil disturbance were quantified using the grading emissions factor in URBEMIS 2007 (version 9.2.4). Paved and unpaved road emissions were estimated using *AP-42*. Documentation of the inputs to and results from construction-phase emissions analysis and operations emissions analysis are included in Attachments B and C, respectively.

The potential impact of project construction activities on air quality is based on a best-estimate scenario using projections of the numbers and types of equipment that will be used during project construction.

5.3 EXISTING CONDITIONS

5.3.1 Regulatory Background

5.3.1.1 Federal Programs

5.3.1.1.1 Clean Air Act

National ambient air quality standards were established in 1970 for six pollutants: carbon monoxide (CO), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide ($SO_{2)}$, and lead (Pb). These pollutants are commonly referred to as criteria pollutants, because they are considered the most prevalent air pollutants known to be hazardous to human health. The Clean Air Act (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 U.S. Environmental Protection Agency (USEPA) to set standards for toxic air contaminants and required facilities to sharply reduce emissions.

5.3.1.1.2 Federal Regulations Limiting Greenhouse Gas Emissions

On September 22, 2009, the Administrator of the USEPA signed the Final Rule for the Mandatory Reporting of Greenhouse Gas (Rule). The Rule was published in the Federal Register on October 30, 2009 and went into effect on December 29, 2009. The Rule requires that suppliers of fossil fuels or industrial greenhouse gases (GHG), manufacturers of vehicles and engines, and facilities that emit more than 25,000 metric tons or more per year of GHG emissions submit annual reports to the USEPA.

On December 7, 2009, the Administrator of the USEPA signed two findings regarding GHGs. The first finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations. The second finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare. These findings do not themselves impose any requirements on industry or other entities.

5.3.1.2 State Programs

5.3.1.2.1 The California Clean Air Act

The California CAA requires regions to develop and implement strategies to attain California's Ambient Air Quality Standards (AAQS). For some pollutants, the California standards are more stringent than the national standards. California specifies an additional four criteria pollutants: visibility reducing particles (VRP), sulfates, hydrogen sulfide (H_2S) and vinyl chloride. Regional air quality management districts, including the Monterey Bay Unified Air Pollution Control District (MBUAPCD), must prepare an air quality plan specifying how federal and state standards will be met.

5.3.1.2.2 The Air Toxic "Hot Spots" Information and Assessment Act

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

5.3.1.2.3 Executive Order S-3-05 Greenhouse Gas Emissions Reductions Targets

Executive Order S-3-05 establishes GHG reductions targets for the state of California. The targets call for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80% below 1990 levels by 2050. The California Environmental Protection Agency secretary will coordinate development and implementation of strategies to achieve the GHG reduction targets.

5.3.1.2.4 Assembly Bill 32 – The Global Warming Solutions Act of 2006

Assembly Bill 32 (AB-32) codifies a comprehensive program of regulatory and market mechanisms to achieve specific reductions of GHG emissions in California. It designates the California Air Resources Board (CARB) as responsible for monitoring and reducing GHG emissions. A Scoping Plan which identifies the mechanisms for achieving the target reductions was approved on December 11, 2008. The measures identified must be adopted through the normal rulemaking process.

5.3.1.2.5 Senate Bill 97 Chapter 185 Statutes of 2007

Senate Bill 97 requires that the Office of Planning and Research (OPR) prepare guidelines regarding the feasible mitigation of GHG emissions or the effects of GHG emissions as required by the California Environmental Quality Act (CEQA). On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for greenhouse gas emissions. The California Resources Agency (Agency) was required to certify and adopt these revisions to the State CEQA Guidelines by January 1, 2010. On December 31, 2009, the Agency delivered its rulemaking package to the Office of Administrative Law for their review pursuant to the Administrative Procedure Act. The Adopted Amendments will not become effective until after the Office of Administrative Law completes its review of the Adopted Amendments and rulemaking file, and transmits the Adopted Amendments to the Secretary of State for inclusion in the California Code of Regulations. The Guidelines will apply retroactively to any incomplete environmental impact report, negative declaration, mitigated negative declaration, or other related document.

5.3.1.3 Local Plans

5.3.1.3.1 The Air Quality Management Plan for the Monterey Bay Region

The MBUAPCD periodically prepares and updates plans to achieve ambient air quality goals. These plans usually include measures to reduce air pollution emissions from industrial, area, mobile and other sources. The following documents are available on the District's website (www.mbuapcd.org):

- 1994 Federal Maintenance Plan for the Monterey Bay Region and Amendment #1
- 1998 Report on Attainment of the California Fine Particulate Standard in the Monterey Bay Region
- 2004 Air Quality Management Plan for the Monterey Bay Region

In December 2005, the district adopted a plan to meet the criteria for particulate matter in response to Senate Bill 656. In May 2007, the district adopted a plan for maintaining the federal ozone standard. In August 2008 the district's Air Quality Management Plan for achieving the 2006 California ozone standard was adopted.

5.3.1.3.2 Local Greenhouse Gas Guidance

The MBUAPCD currently has no regulatory requirements for GHG emissions or guidance concerning CEQA evaluation of GHG emissions.

5.3.2 Climatology

The North Central Coast Air Basin (NCCAB) is comprised of Monterey, Santa Cruz and San Benito Counties. As described in Section 6.2 of the MBUAPCD CEQA Guidelines, the NCCAB lies along the central coast of California and covers an area of 5,159 square miles. The northwest sector of the NCCAB is dominated by the Santa Cruz Mountains. The Diablo Range marks the northeastern boundary, and together with the southern extent of the Santa Cruz Mountains forms the Santa Clara Valley that extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley evolves into the San Benito Valley, which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at its northwestern end to King City at its southeastern end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range defines the western side of the Carmel Valley.

The semi-permanent high pressure cell in the eastern Pacific is the basic controlling factor in the climate of the NCCAB. In the summer, the high pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific High forming a stable temperature inversion of hot air over a cool coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid to inhibit vertical air movement.

The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure, which intensifies the onshore air flow during the afternoon and evening. In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that the north or east winds develop to transport pollutants from either the San Francisco Bay area or the Central Valley into the NCCAB.

During the winter, the Pacific High migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. Northwest winds are nevertheless still dominant in winter, but easterly flow is more frequent. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the NCCAB as a whole in winter and early spring.

5.3.3 Air Quality

The MBUAPCD is the state regulatory body responsible for air quality related activities in the NCCAB. Three air quality designations can be given to an area for a particular pollutant:

- **Non-attainment:** 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 there is not enough monitoring data to determine if the area is non-attainment or attainment.

According to the CARB State AAQS, the NCCAB is designated non-attainment for O_3 and PM_{10}. These pollutants are discussed in more detail in the following sections. The NCCAB is designated attainment for NO_2, SO_2, CO, $PM_{2.5}$, H_2S, sulfate particulates, visibility reducing particles, and Pb particulates. By federal standards, the NCCAB is designated as unclassified or attainment for all criteria pollutants. The NCCAB is unclassified for the federal 8-hour O_3 standard, the 24-hour PM_{10} standard, and both $PM_{2.5}$ standards. Table 5-1 provides the California and federal air quality standards and attainment status. Currently, the federal government, state of California and MBUAPCD do not designate attainment statuses for ambient GHG concentrations.

5.3.3.1 Ozone

Air quality in the NCCAB with respect to O_3 has improved slightly since 2000. Although maximum hourly concentrations of O_3 have remained relatively stable, the number of exceedances of the state (0.09 parts per million (ppm) average) one-hour standard have decreased. A similar trend is observed for the state (0.07 ppm average) 8-hour standard. Since 2000, the NCCAB has had at least one exceedance of the state 1-hour or 8-hour standards annually, with the exception of 2004 in which the 1-hour standard was not exceeded.

These exceedances are generally attributed to unique meteorological patterns, combined with increases in O_3 precursor emissions during the summer months. Vehicular emissions, industrial emissions, and high ambient temperatures in urban areas of the NCCAB contribute to summertime O_3 generation and subsequent air standard violations.

In Monterey County, the state 1-hour and 8-hour standards for O_3 have each been exceeded once since 2000 and 2004 respectively, as shown in Table 5-2. Peak hourly average O_3 concentrations ranged from 0.066 to 0.077 ppm during this time. Table 5-3 presents data from the MBUAPCD air monitoring station located on East Laurel Drive in Salinas. This station, one of three monitoring stations within Monterey County, provides data that is most representative of the project area. The Salinas station is the nearest air-monitoring site.

Table 5-1: Monterey Bay Unified Air Quality Control District Attainment Status as of July 2007

Pollutant	Averaging Time	California Standards		Federal Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hour	0.07 ppm	N[1]	0.075 ppm	U/A
	1 Hour	0.09 ppm	N[1]	---	---
Carbon Monoxide	8 Hour	9.0 ppm	A	9 ppm	A
	1 Hour	20.0 ppm	A	35 ppm	A
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm	A	0.053 ppm	A
	1 Hour	0.18 ppm	A	---	---
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20.0 $\mu g/m^3$	N	---	---
	24 Hour	50.0 $\mu g/m^3$	N	150 $\mu g/m^3$	U
Sulfur Dioxide	Annual Arithmetic Mean	---	---	0.030 ppm	A
	24 Hour	0.04 ppm	A	0.14 ppm	A
	1 Hour	0.25 ppm	A		
Lead	30 Day Average	1.5 $\mu g/m^3$	A	---	---
	Calendar Quarter	---	---	1.5 $\mu g/m^3$	A
$PM_{2.5}$	Annual Arithmetic Mean	12 $\mu g/m^3$	A	15 $\mu g/m^3$	U/A
	24 Hour	---	---	35 $\mu g/m^3$	U/A

Source: MBUAPCD, 2008.

Emissions/Units/Status

$PM_{2.5}$	Particulate matter with a diameter less than or equal to 2.5 microns
ppm	Parts per million
$\mu g/m^3$	Micrograms per cubic meter of air
N	Non-attainment
A	Attainment
U	Unclassified
---	Not applicable

[1] Effective July 26, 2007, the CARB designated the NCCAB a non-attainment area for the state ozone standard.

Table 5-2: Monterey County Exceedances of the State Ambient Air Quality Standards Between 2000 and 2007

Year	Ozone (1-hour)[1]		Ozone (8-hr)[2]		PM_{10}[3]	
	Number of Exceedance Days	Maximum Hour Concentration (ppm)	Number of Exceedance Days	Maximum Hour Concentration (ppm)	Estimated Number of Exceedance Days	Maximum 24-Hour Concentration ($\mu g/m^3$)
2000	1	0.095	0	0.079	24.3	77
2001	0	0.085	0	0.080	ND[4]	72
2002	0	0.082	0	0.074	24.8	60
2003	0	0.092	0	0.082	40.8	90
2004	0	0.093	1	0.079	12.6	58
2005	0	0.073	0	0.065	0	60
2006	0	0.093	0	0.078	5.8	51
2007	0	0.075	0	0.071	0	39

Source: California Air Resources Board, 2008.

[1] The sampling frequency of ozone is continuous (hourly). The state Ambient Air Quality Standard (AAQS) for ozone is 0.09 ppm.

[2] The state eight-hour AAQS for ozone is 0.070 ppm.

[3] Sampling of particulate matter (PM_{10}) is scheduled throughout California once every sixth day (a 24-hour sample). Therefore, each station has a nominal 60 to 61 sampling days per year. All stations have the same schedule; that is, they all attempt to sample for PM_{10} on the same days. The number of station-sampling days per county is dependent on the number of PM_{10} stations in the county. The state AAQS for PM_{10} is 50 micrograms per meter of air ($\mu g/m$).

[4] Insufficient data.

Table 5-3: Salinas #3 Air-Monitoring Station Annual Air Quality Measurements Between 2000 and 2007

Year	Ozone		Particulate Matter	
	Maximum 8-Hour Overlap Concentration (ppm)	Maximum 1-Hour Concentration (ppm)	Annual Arithmetic Mean ($\mu g/m^3$)	Maximum 24-Hour Concentration ($\mu g/m^3$)
2000	0.066	0.075	ND[1]	37.0
2001	0.069	0.076	ND[1]	51.0
2002	0.062	0.075	18.5	46.0
2003	0.063	0.073	20.4	67.0
2004	0.071	0.077	17.1	45.0
2005	0.058	0.069	15.8	37.0
2006	0.057	0.066	18.0	51.0
2007	0.059	0.067	18.2	39.0

Source: California Air Resources Board, 2008.

Units

ppm Parts per million

$\mu g/m^3$ Micrograms per cubic meter of air

[1] Insufficient data.

5.3.3.2 Particulate Matter

Air quality in the NCCAB with respect to PM_{10} has improved since 2000. Although maximum 24-hour concentrations of PM_{10} have remained relatively stable, the number of exceedances of the state 24-hour standard have decreased. PM_{10} is generated within the project area largely as a result of wind during dry conditions (resulting in fugitive dust) and combustion sources. Between 2000 and 2007, the maximum 24-hour PM_{10} concentration within Monterey County was 90 micrograms per cubic meter of air ($\mu g/m^3$), which was reached in 2003. The estimated number of violations of the PM_{10} state air quality standards (over 50 $\mu g/m^3$) between 2000 and 2007 ranged from zero days in 2005 and 2007 to 40.8 days in 2003.

5.3.3.3 Air Toxics

The CARB Toxics Monitoring Program was designed to determine the concentrations in air of various toxic contaminants, which the USEPA has defined as those that may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. The CARB identifies the most important toxic pollutants by considering risk of harm to public health. CARB's network of toxics monitoring sites is located within major urban areas across the state. The NCCAB does not contain a CARB toxic monitoring site.

5.3.3.4 Greenhouse Gases

Greenhouse gas emissions are not currently regulated in the NCCAB. For potential regulatory action, GHGs are generally defined as: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). GHG emissions are generally expressed in units of carbon dioxide equivalent (CO_2e). Concentrations of the gases are converted into CO_2e according to their global warming potential ($CO_2 = 1$). Monterey County 2006 GHG emissions estimates are shown in Table 5-4.

Table 5-4: 2006 Monterey County Greenhouse Gas Emissions Estimates

Source Category	Total Emissions (metric tons per year)		
	GHG Emissions	Percent of Total	Notes
Vehicle Emissions	647,175	46	Includes miles on county roads and 25% of state highway miles.
Natural Gas Consumption	190,848	14	Residential, commercial, and industrial consumption from PG&E.
Electricity Consumption	209,103	15	Residential, commercial, and industrial consumption from PG&E.
Industrial Processes	201,290	14	Based on MBUAPCD inventory data.
Landfill Emissions	32,829	2	Based o CIWMB data.
Agricultural Equipment Field Use	113,159	8	Based on farm acreage and state averages.
Total	**1,394,404**	**100**	

Source: County of Monterey, 2008.

5.4 IMPACTS

5.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts to air quality would be considered significant if they were to:

- 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 non-attainment under an applicable federal or state AAQS,
- expose sensitive receptors to substantial pollutant concentration, or
- create objectionable odors affecting a substantial number of people.

In addition, a project is considered to be significant at the state or regional level if it interferes with the attainment or maintenance of state or national AAQS.

The MBUAPCD has published thresholds of significance for project environmental impacts resulting from operations. For air quality impacts, it states that concentrations of air emissions are significant if they:

- violate any AAQS, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations,
- emit more than 137 pounds per day of volatile organic compounds (VOC),
- emit more than 137 pounds per day of nitrogen oxides, as NO_2,
- emit more than 82 pounds per day of PM_{10},
- emit more than 550 pounds per day of CO (direct emissions), and/or
- emit more than 150 pounds per day of sulfur oxides, as SO_2 (direct emissions).

The MBUAPCD has published a threshold of significance for project environmental impacts resulting from construction. For air quality impacts, it states that concentrations of PM_{10} are significant if they exceed 82 pounds per day (lbs/day).

Lagunita School is located approximately 2,900 feet southwest of the project site at 975 San Juan Grade Road. This elementary school is operated by Monterey County. Emissions in excess of established thresholds of significance may have a significant impact on local air quality when emitted nearby and upwind of sensitive receptors, such as Lagunita School.

The CEQA Guidelines do not specifically describe what thresholds of significance should be or how they may be used. Appendix G of the CEQA Guidelines lists a variety of potentially significant effects, but does not provide a means of judging whether they are indeed significant. The lead agency governing air quality standards in the project area, in this case the MBUAPCD,

is charged with the task of determining whether the effects of a project are indeed below the levels of significance to the environment.

As stated above in Section 5.3.1.2.5, on December 31, 2009, the California Resources Agency delivered its rulemaking package to the Office of Administrative Law for its review pursuant to the Administrative Procedure Act. The Adopted Amendments will not become effective until after the Office of Administrative Law completes its review of the Adopted Amendments and rulemaking file, and transmits the Adopted Amendments to the Secretary of State for inclusion in the California Code of Regulations. CARB staff has developed state-wide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The interim guidance divides projects analyzed under CEQA into two categories, industrial and residential/commercial, and provides significance criteria for each. For industrial projects, such as this project, CARB proposed a quantitative significance threshold of 7,000 metric tons CO_2 equivalent ($MTCO_2e/yr$) per year from operation of non-transportation-related GHG sources. At this time, the MBUAPCD does not address significance criteria for impacts from greenhouse gas emissions in its CEQA Air Quality Guidelines.

5.4.2 Construction

Particulate matter (PM_{10}) is the primary air pollutant resulting from construction activities. In addition to PM_{10}, there are pollutants associated with equipment usage and with vehicular emissions from transporting workers, equipment, and supplies. Greenhouse gases are also emitted during the construction phase of a project.

The cumulative impact of the construction emissions presented in Table 5-5 was compared to the MBUAPCD CEQA Air Quality Guidelines, "Initial Study/Determining Significance" and the cumulative impact was determined to be less than significant. The threshold of significance for PM_{10} from construction impacts is 82 lbs/day. Construction emissions of PM_{10} will not exceed 63 lbs/day. Therefore, construction impacts from PM_{10} will be less than significant. Construction equipment emits O_3 precursors as well as air toxics. These emissions are accommodated in the emissions inventories of state and federally-mandated air quality plans and will not have a significant impact on the attainment and maintenance of air toxics or O_3 AAQS.

Section 8 of the MBUAPCD Air Quality CEQA Guidelines, titled "Mitigation Measures," details appropriate measures to reduce construction emissions that will be implemented as part of this project, further reducing the impact of construction generated air pollution.

Estimated construction-phase unmitigated emissions of GHGs (CO_2) are detailed in Table 5-5. Calculated using URBEMIS 9.2.4 and EMFAC2007 Version 2.3 emissions factors, annual CO_2 emissions from construction will equal approximately 213 metric tons per year in 2011, 660 metric tons per year in 2012, and 17 metric tons per year in 2013. Incorporation of the Applicant Proposed Measures (APMs) listed in Section 5.5 will further reduce emissions from construction to approximately 181 metric tons per year in 2011, 561 metric tons per year in 2012, and 14 metric tons per year in 2013. The emissions from the construction phase of the project, even without APMs, are well below CARB's proposed threshold of 7,000 $MTCO_2e/yr$.

Table 5-5: Construction Emissions

Activity	Emissions						
	ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Year 1 – 2011							
Maximum pounds per day	12.2	31.5	71.5	0.2	43.4	3.0	6,703
Average pounds per day	5.6	14	34.6	0.07	21.3	1.4	3,330
Total tons per year	0.3	0.8	2.1	0.00	1.2	.08	181
Year 2 – 2012							
Maximum pounds per day	15.3	93.8	123.4	2.8	69.1	5.5	18,553
Average pounds per day	8.2	46.4	62.2	1.5	34.1	2.7	9,340
Total tons per year	0.8	3.6	5.8	0.02	3.6	0.29	561
Year 2 – 2013							
Maximum pounds per day	1.6	5.3	10.6	0.02	9.4	1.7	1,238
Average pounds per day	1.6	5.3	10.6	0.02	9.4	1.7	1,238
Total tons per year	0.02	0.07	0.1	0.00	0.1	.02	14

* For CO_2, tons per day is metric tons (2,204.62 pounds)

Sources: PG&E Construction Estimates calculated using emissions factors from URBEMIS 9.2.4 and EMFAC2007 Version 2.3.

Emissions

ROG Reactive organic gas
CO Carbon monoxide
NO_x Nitrogen oxides

SO_2	Sulfur dioxide
PM_{10}	Fugitive dust + diesel PM10
$PM_{2.5}$	Fine particulate
CO_2	Carbon dioxide

The project will not cause any objectionable odors, expose sensitive receptors to increased pollutant concentration, conflict with any air quality plans or standards, or otherwise significantly affect air quality. Lagunita School is located approximately 2,900 feet southwest of the project site. Its distance from the project, upwind location (based on prevailing winds), less than significant emissions level, and application of the proposed avoidance and mitigation measures will result in no impact to this sensitive receptor.

5.4.3 Operations

Operation of the switching station will not result in any pollutants being emitted into the air. Since the switching station is unmanned, there will be no vehicular emissions associated with regular commuting to and from the site. Vehicular emissions associated with maintenance and repair of the switching station and power lines will be the only sources of emissions during operation. As shown in Table 5-6, using an estimated total of 250 vehicle miles a month (both light-duty and heavy-duty trucks) for switching station maintenance and repairs, the total emissions during operations will be considerably less than the maximums of lbs/day for reactive organic gas, CO, NO_2, SO_2, and PM_{10}.

Greenhouse gas emissions from the operations phase of the project are detailed in Table 5-7. The worst-case scenario emissions from the operations phase of the project are well below CARB's proposed threshold of 7,000 $MTCO_2e/yr$.

Table 5-6: Operations Emissions Estimates

Activity and Equipment	Emissions (pounds per day)				
	ROG	**CO**	**NO_2**	**SO_2**	**PM_{10}**
Light-Duty Truck (200 miles per month)	0.006	0.102	0.017	0.001	0.009
Heavy-Duty Truck (50 miles per month)	0.003	0.057	0.006	0.000	0.002
Switching Station Operations Total (Pounds/Day)	**0.06**	**1.13**	**0.25**	**0.14**	**0.17**

Emissions

TOG	Total organic gas
CO	Carbon monoxide
NO_2	Nitrogen dioxide
PM_{10}	Fugitive dust
SO_2	Sulfur dioxide

Table 5-7: Operations Greenhouse Gas Emissions Estimates

Activity and Equipment	Emissions (metric tons/year CO_2e)			
	CO_2	CH_4	N_2O	SF_6
SF_6 Process Loss	--	--	--	0.71
Light-Duty Truck (200 miles per month)	1.41	0.001	0.008	--
Heavy-Duty Truck (50 miles per month)	0.91	0.001	0.003	--
Switching Station Operations Total	**2.32**	**0.002**	**0.011**	**0.71**

5.5 APPLICANT PROPOSED MEASURES

5.5.1 Construction

While potential impacts associated with construction of the switching station and tower modifications will be less than significant, PG&E will take the following measures to further reduce impacts to air quality.

5.5.1.1 Measures Addressing Impacts Associated With PM_{10}

PG&E will implement the following feasible mitigation measures from Table 8-2 of the MBUAPCD Air Quality CEQA Guidelines to reduce air quality impacts associated with PM_{10}:

- Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil and wind exposure.
- Suspend all grading activities during periods of high wind (over 15 mph).
- Apply chemical soil stabilizer on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Applied non-toxic soil binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.
- Cover all trucks hauling dirt, sand or loose materials.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Sweep public roads if visible soil material is carried out from the construction site.
- Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours.
- The phone number of the MBUAPCD shall be visible to ensure compliance with Rule 402 (nuisance).
- Limit the area of earth disturbing activities at any one time.

5.5.1.2 Measures Addressing Impacts Associated With Greenhouse Gas Emissions During Construction

PG&E will implement the following measures to address GHG emissions:

- Identify park-and-ride facilities in the project vicinity and encourage construction workers to carpool to the job staging area to the extent feasible. The ability to develop an effective carpool program for the proposed project will depend upon the proximity of carpool facilities to the staging area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the project's construction schedule.

- Minimize unnecessary construction vehicle idling time. 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 start-up. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes required by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.

- Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program, or will meet at a minimum USEPA/CARB Tier 1 engine standards.

- Minimize welding and cutting by using compression of mechanical applications where practical and within standards.

- Encourage use of natural gas powered vehicles for passenger cars and light duty trucks where feasible and available.

- Encourage the recycling of construction waste where feasible.

5.5.2 Operations and Maintenance

There will be no significant impacts to air quality due to the operations and maintenance of the switching station; consequently, no measures are proposed. However, to further reduce impacts, PG&E will employ standard Best Management Practices (BMPS) during operations, such as minimizing vehicle trips and keeping vehicles and equipment well maintained.

In order to further minimize already less-than-significant GHG impacts resulting from project operations, PG&E will implement as feasible the following GHG reduction measures identified in Section 6.4 of the CPUC PEA Checklist for Transmission Line and Substation Projects: 1) the use of energy efficient design for substation buildings; and 2) periodic energy efficiency and GHG emissions audits.

5.5.2.1 Measures Addressing Impacts Associated With SF_6 Emissions

To further avoid and minimize potential SF_6 emissions, PG&E will incorporate the following measures:

- Incorporate Crazy Horse Canyon Switching Station into PG&E's system-wide SF6 emission reduction program. Since 1998, PG&E has implemented a programmatic plan to inventory, track, and recycle SF6 inputs, and inventory and monitor SF6 leakage rates in order to facilitate timely replacement of leaking breakers. PG&E has improved its leak detection procedures and increased awareness of SF6 issues within the company. X-ray technology is now used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF6 handling and accidental releases. As an active member of EPA's SF6 Emission Reduction Partnership for Electrical Power Systems, PG&E has focused on reducing SF6 emissions from its transmission and distribution operations and has reduced the SF6 leak rate by 89 percent and absolute SF6 emissions by 83 percent.

- Require that Crazy Horse Canyon Switching Station's breakers have a manufacturer's guaranteed leakage rate of 0.5 percent per year or less for SF6.

- Maintain substation breakers in accordance with PG&E's maintenance guidelines.

- Comply with California Air Resources Board Early Action Measures as these policies become effective.

5.5.2.2 Measures Addressing Impacts Associated With Greenhouse Gas Emissions During Operation

In addition to these measures, PG&E is implementing the following voluntary company-wide actions to further reduce GHG emissions:

- Pacific Gas & Electric Company 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 allows its customers to balance out the GHG emissions produced by the energy they use, making their energy use "climate neutral." For ClimateSmart customers, PG&E calculates the amount needed to fund sufficient GHG emissions reduction projects in

California to make their energy use "climate neutral." This is added to the customer's monthly energy bill and is tax deductable.

- Pacific Gas & Electric Company is offsetting all of the GHG emissions associated with energy used in PG&E's buildings by participating in its ClimateSmart program. In 2007, this amounted to over 50,000 tons of CO2 reductions.

- California Air Resources Board plans to adopt AB-32 Early Action Measures to reduce GHG emissions. PG&E will implement the appropriate Early Action Measures as they become effective.

5.6 REFERENCES

California Air Resources Board. 2008. Ambient Air Quality Data Summaries. Online: http://www.arb.ca.gov/adam/welcome.html

_____. 2008. Ambient Air Quality Standards. Online: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Site visited November 2008.

_____. 2006. Emissions Inventory Data. Current Year Emissions. Online: http://www.arb.ca.gov/ei/emissiondata.htm. Site visited November 2008.

California Office of Planning and Research, CEQA Technical Advice Series, September 1994. Threshold of Significance: Criteria for Defining Environmental Significance.

County of Monterey Resource Management Agency Planning Department. 2008. 2007 General Plan Draft EIR.

Monterey Bay Unified Air Pollution Control District (MBUAPCD). 2008. The MBUAPCD CEQA Air Quality Guidelines.

_____. 2008. 2008 Air Quality Management Plan for the Monterey Bay Region.

_____. 2008. 2007 AAQS Attainment Status for NCCAB.

South Coast Air Quality Management District [SCAQMD]. 2009. EMFAC2007 Version 2.3 Emission Factors (on-road). Online: http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html. Site visited January 2010.

University of California Agriculture and Natural Resources. 2008. California Weather Data. Online: http://www.ipm.ucdavis.edu/WEATHER/wxretrieve.html. Site visited November 2008.

URBEMIS Version 9.2.4. 2009. Appendix G – Construction Equipment Emissions Factors. Environmental Management Software, Rimpo and Associates.

U. S. Environmental Protection Agency. 1985. AP-42, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources.

_____. 1985. AP-42, Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources.

_____ 1989. AP-42, Volume II, Fourth Edition, Tables II-1-7 and II-1-8.

_____. 1996. Use of Locality-Specific Transportation Data for the Development of Mobil Source Emission Inventories.

_____. 1998. AP-42, Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources, Appendix H.

_____. 2006. AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Chapters 13.2.1 and 13.2.2.

Western Regional Climate Center (WWCC). 2007. Temperature Table.

6.0 BIOLOGICAL RESOURCES

6.1 INTRODUCTION

This chapter describes the existing temporary and permanent biological resources within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent biological impacts to habitats and species associated with project construction and operation. All impacts to botanical resources, wildlife, and aquatic features will be avoided or will be less than significant with incorporation of the measures as described in Section 6.6 Applicant Proposed Measures.

6.2 REGULATORY BACKGROUND

6.2.1 Federal Regulations

6.2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service. Section 9 of the FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations (CFR) 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 U.S. Code (USC) 1538). Under Section 7 of the FESA, federal agencies are required to consult with USFWS if their actions, including permit approvals or funding, could adversely affect an endangered plant or wildlife species or its critical habitat. The project will require a Section 404 permit from the U.S. Army Corps of Engineers (USACE), who will initiate Section 7 consultation. Through consultation and the issuance of a biological opinion, USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the action will not jeopardize the continued existence of the species.

6.2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties devised to protect 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 MBTA, 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 birds of prey, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

6.2.1.3 Federal Clean Water Act

The Clean Water Act's (CWA) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of

dredged or fill material into “waters of the United States” without a permit from the USACE. The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit. Substantial impacts to waters of the United States may require an individual permit. Projects such as the Crazy Horse Canyon Switching Station Project that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits.

6.2.2 State Regulations

6.2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA, but unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called candidates by the State). Section 2080 of the California Department of Fish and Game (CDFG) 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 CDFG Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2081 of the CDFG Code allows CDFG to issue incidental take permits to otherwise lawful development projects, provided the take is minimized and fully mitigated and does not jeopardize the continued existence of the species. Section 2053 of the CDFG Code requires state agencies assuming the lead for the California Environmental Quality Act (CEQA) review to consult with the CDFG to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

6.2.2.2 Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CDFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFG prohibits any State agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

6.2.2.3 Native Plant Protection Act

CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900-1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. CESA includes an additional listing

category for threatened plants that are not protected under NPPA. In this case, plants listed as rare or endangered under the NPPA are not protected under CESA, but can be protected under CEQA. In addition, plants that are not state-listed, but meet the standards for listing, are also protected under CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the California Native Plant Society (CNPS) Inventory potentially qualify for protection under CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection under CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these species are rare enough to qualify for protection under CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

6.2.2.4 California Lake and Streambed Alteration Agreement

Sections 1600 through 1616 of the CDFG Code require that a Lake and Streambed Alteration Program Notification Package be submitted to the CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFG reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal on which the CDFG and the applicant agree is the Lake and Streambed Alteration Agreement. Often, projects that require a Lake and Streambed Alteration Agreement also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Lake and Streambed Alteration Agreement may overlap.

6.2.2.5 Waste Discharge Requirements Under the Porter-Cologne Water Quality Control Act

The State Water Resources Control Board and the nine Regional Water Quality Control Boards have jurisdiction over all surface water and groundwater in the state, including wetlands, headwaters, and riparian areas. The state or regional board must issue waste discharge requirements for any activity that could affect the quality of waters of the State, including impacts to wetlands and riparian habitats.

6.2.3 Local Regulations/Policies/Plans

Although PG&E is not subject to local land use regulations, the following overview of local regulations relating to biological resources is provided for information purposes and to assist with CEQA review.

6.2.3.1 Monterey County General Plan

The proposed switching station site is within the jurisdiction of Monterey County and the North County Planning Area of the Monterey County General Plan. The Biological (Natural) Resources section in the Conservation and Open Space Element of the Monterey County General Plan discusses policies for conservation and preservation of trees, special-status wildlife and plants and their habitats, and wetlands. Policy OS-5.2 states that conservation of special-status species shall be promoted as provided in the Area Plans [North County Area Plan]. Policies OS-

5.09 and OS-5.10 state that a permit for removal of trees will be established and maintained by an ordinance implementing Area Plans [North County Area Plan]. Policy OS-5.16 states that, "any development project that could potentially disturb a special status-species or its critical habitat identified by the County requiring analysis or identified for protection under an adopted Area Plan shall be required to conduct a biological survey of the project site. Based on the findings of this report, additional focused surveys for certain species may be required. This report, and any mitigation measures recommended in the report, shall be used as a basis for CEQA documentation for the project except if the County, in the exercise of its independent judgment, requires additional analysis. If sensitive biological resources are found on the project site, the project biologist shall recommend measures necessary to reduce impacts to a less than significant level. All feasible measures shall be incorporated as conditions of approval in any permit issued. An ordinance establishing minimum standards for a biological report shall be enacted." Policy OS-5.18 states that, "prior to disturbing any federal or state jurisdictional areas, all applicable federal and state permitting requirements shall be met, including all mitigation measures for development of jurisdictional areas and associated riparian habitats."

6.2.3.2 North County Area Plan

The North County Area Plan is one of the eight area plans of the Monterey County General Plan. It is more specific than the Monterey County General Plan as it adapts to the characteristics and features in the North County Planning Area. The policies of the North County Area Plan are supplements to the goals, objectives, and policies in the Monterey County General Plan. Supplemental Policy 8.2.1 discusses tree preservation and mitigation and states that a permit shall be required for the removal of any healthy, native oak and madrone trees with a trunk diameter in excess of six inches, measured two feet above ground level in the North County area.

Supplemental Policy 16.2.1.1 focuses on protection measures for all perennial or intermittent streams, creeks, and other natural drainages in the North County Planning Area.

6.2.3.3 Preservation of Oak and Other Protected Trees Ordinance

Chapter 21.64.260 of the Monterey County Zoning Ordinance, the Preservation of Oak and Other Protected Trees Ordinance (Ordinance), provides the regulations for the protection and preservation of oak and other specific types of trees as required in the Monterey County General Plan, area plans and master plans. Protected trees under the Ordinance include:

- oak and madrone trees that are six inches or more in diameter two feet above ground level; and

- landmark oak trees, those trees which are 24 inches or more in diameter when measured two feet above the ground, or trees which are visually significant, historically significant, or exemplary of their species.

6.3 METHODOLOGY

6.3.1 Overview

In July 2008, a general biological reconnaissance survey for special-status plant and wildlife species and jurisdictional waters and wetlands was conducted for all three alternative sites under consideration. In July 2009, PG&E's environmental consultant (TRC Solutions, Inc. [TRC]) met with the USACE at the preferred project site to obtain verification that the aquatic features adjacent to the preferred site were under the jurisdiction of the USACE. In October 2009, TRC conducted a wetland delineation and an additional biological reconnaissance survey. The purpose of the additional biological reconnaissance survey was to identify additional areas that may be potentially affected by construction of the proposed switching station. Figure 6-1 shows the boundaries of the biological survey area and wetland study area. In January 2010, TRC conducted a burrow survey for the burrowing owl in a portion of the project area. In March 2010, TRC conducted a survey for rare plants throughout the project area as well as surveyed additional work areas for plant communities and wetlands. Another rare plant survey will be conducted in late the spring or early summer of 2010 in order to capture all of the blooming periods of plants identified to potentially occur in the project area. Additionally, the project area will be surveyed again for special-status plants and wildlife just prior to construction, as described below under applicant proposed measures (APMs).

6.3.2 Survey Methods

6.3.2.1 Data Searches and Field Surveys

Prior to conducting the field reconnaissance surveys, TRC performed database searches on the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) records. In addition, TRC obtained a letter from the USFWS that contained a list of federally listed species in the vicinity of all three alternative sites. The CNDDB was accessed for information on sensitive plant and wildlife species known to occur in the project area and within a 5-mile buffer around the project area. The CNPS records were accessed for information on sensitive plant species that are known to occur in the U.S. Geological Survey (USGS) quadrangle where the proposed switching station site is located, and the eight other USGS quadrangles surrounding the site. The USGS quadrangles included in the search were San Juan Bautista, San Felipe, Hollister, Mount Harlan, Natividad, Salinas, Prunedale, Watsonville East, and Chittenden. All applicable available field guides were consulted to identify wildlife species not found during the database searches whose ranges are within the proposed switching station site. If the range as well as the habitat and/or elevation range of a given sensitive species coincided with that of the proposed switching station site, the species was considered as having the potential to occur within the project area.

The general biological reconnaissance surveys entailed walking and meandering transects in the proposed project area and within 500 feet of the project area (i.e., the survey area), and making close inspections of areas which appeared to have a moderate to high potential of supporting special-status fauna and flora known to be found in the general project vicinity.

6.3.2.2 Plant Communities/Habitat Types

Plant communities and habitat types were identified in the project area during the reconnaissance surveys (see Figure 6-2: Plant Communities). Habitat types were evaluated for their potential to host special-status or sensitive species and whether likely mitigation requirements could constrain construction, operation, or maintenance of the project.

6.3.2.3 Special-Status Plant Species

During the reconnaissance surveys, baseline data was collected for rare plant surveys. In March 2010, TRC conducted the first round of rare plant surveys. An additional survey will be conducted in late spring or early summer of 2010 in order to capture all of the blooming periods of plants identified to potentially occur in the project area.

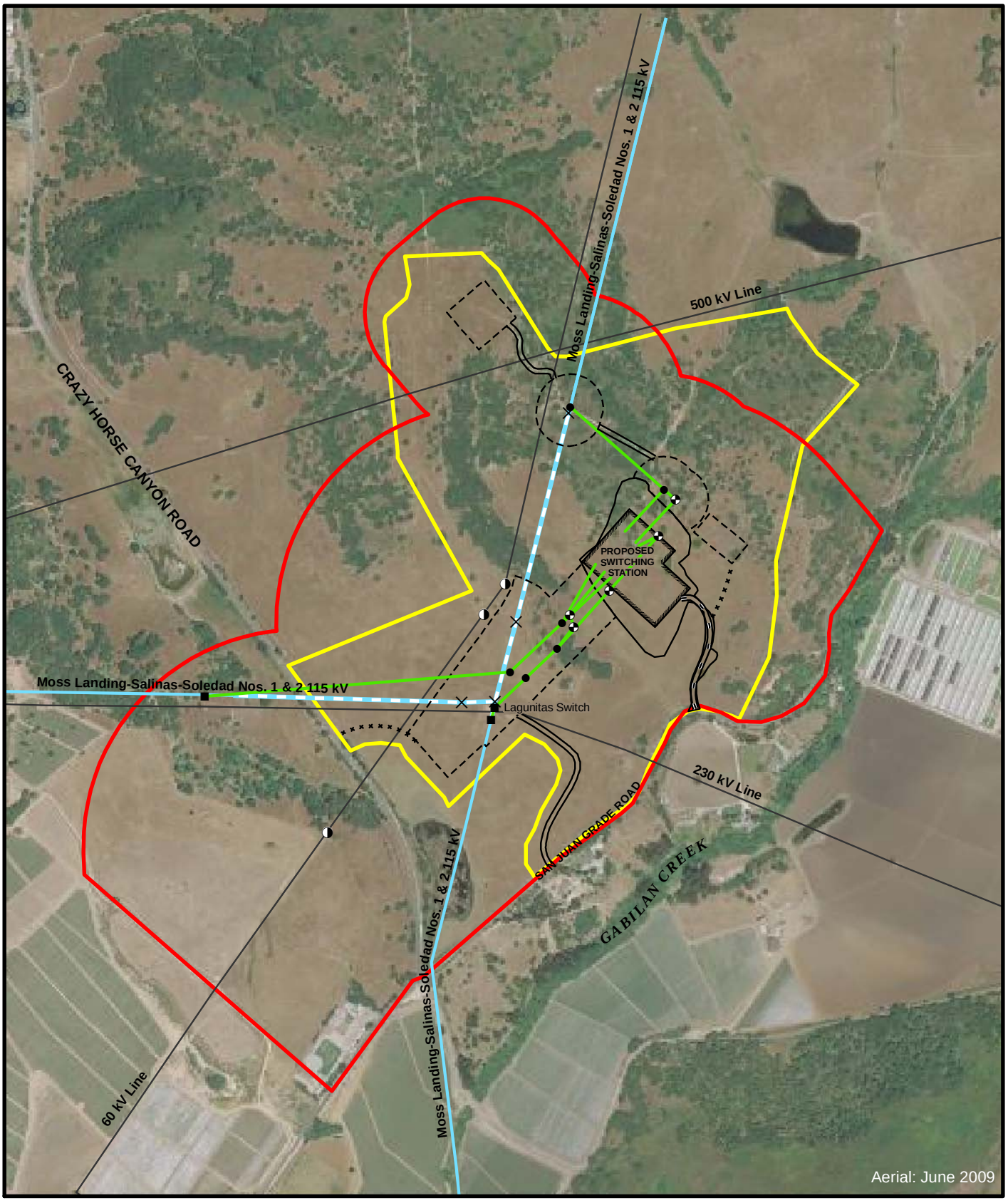
6.3.2.4 Special -Status Wildlife Species

During the reconnaissance field surveys, baseline data was collected for protocol-level wildlife species surveys that will need to occur prior to the start of construction of the project. Habitat for various special-status species was observed and recorded. Uplands and aquatic features were evaluated in the project area to determine habitat suitability. A burrow survey was conducted for the burrowing owl in January 2010. Protocol-level surveys for the California tiger salamander are presently occurring in and around the project area.

6.3.2.4.1 Phase II: Burrow Survey for the Burrowing Owl

The burrowing owl survey was conducted using the California Burrowing Owl Consortium's *Burrowing Owl Survey Protocol and Mitigation Guidelines* (1993) (BUOW Guidelines). These protocols and guidelines are currently recommended by the California Department of Fish and Game (CDFG) as being the best available methodology for performing the surveys. The process includes a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. The first phase of the process is the Phase I: Habitat Assessment where a project site and a 500 foot buffer zone around the project boundary are assessed for the presence of burrowing owl habitat. For the Crazy Horse Canyon Switching Station project, the Phase I: Habitat Assessment was conducted during the biological reconnaissance surveys, at which time TRC biologists determined that there was potential habitat at the project site and within the 500 foot buffer zone. Because potential habitat was identified, TRC biologists conducted the second phase of the process; Phase II: Burrow Survey for the Burrowing Owl. Two TRC biologists conducted a burrow survey for the burrowing owl in a portion of the proposed project area and in areas within 500 feet of this area in order to identify and map any suitable burrows[1].

[1] Additional construction work areas were identified as part of the project area after TRC conducted the burrow survey. Subsequent research and conversations between TRC, Biosearch Associates and the CDFG verified that the project area does not contain suitable nesting habitat for the owl and wintering habitat is marginal at best; therefore, CDFG agreed that an additional burrow survey in the construction work areas of the project not covered in the first burrow survey was not necessary. CDFG, however, suggested including APMs into the PEA in case a burrowing owl decides to move into the project area or buffer zone.



- Existing tower
- Tower to be removed
- New tower location
- Existing wood pole(s)
- New TSP location
- Reconfigured power line
- Moss Landing-Salinas-Soledad Nos. 1 & 2 115 kV power line
- Existing power line to be removed
- Existing transmission or power line
- Existing access road
- New access road
- Temporary Access Road
- Proposed switching station
- Grade and fill boundary
- Temporary workspace
- Biological survey area
- Wetland study area

Figure 6-1
Biological Survey and Wetland Study Areas
Crazy Horse Canyon Switching Station

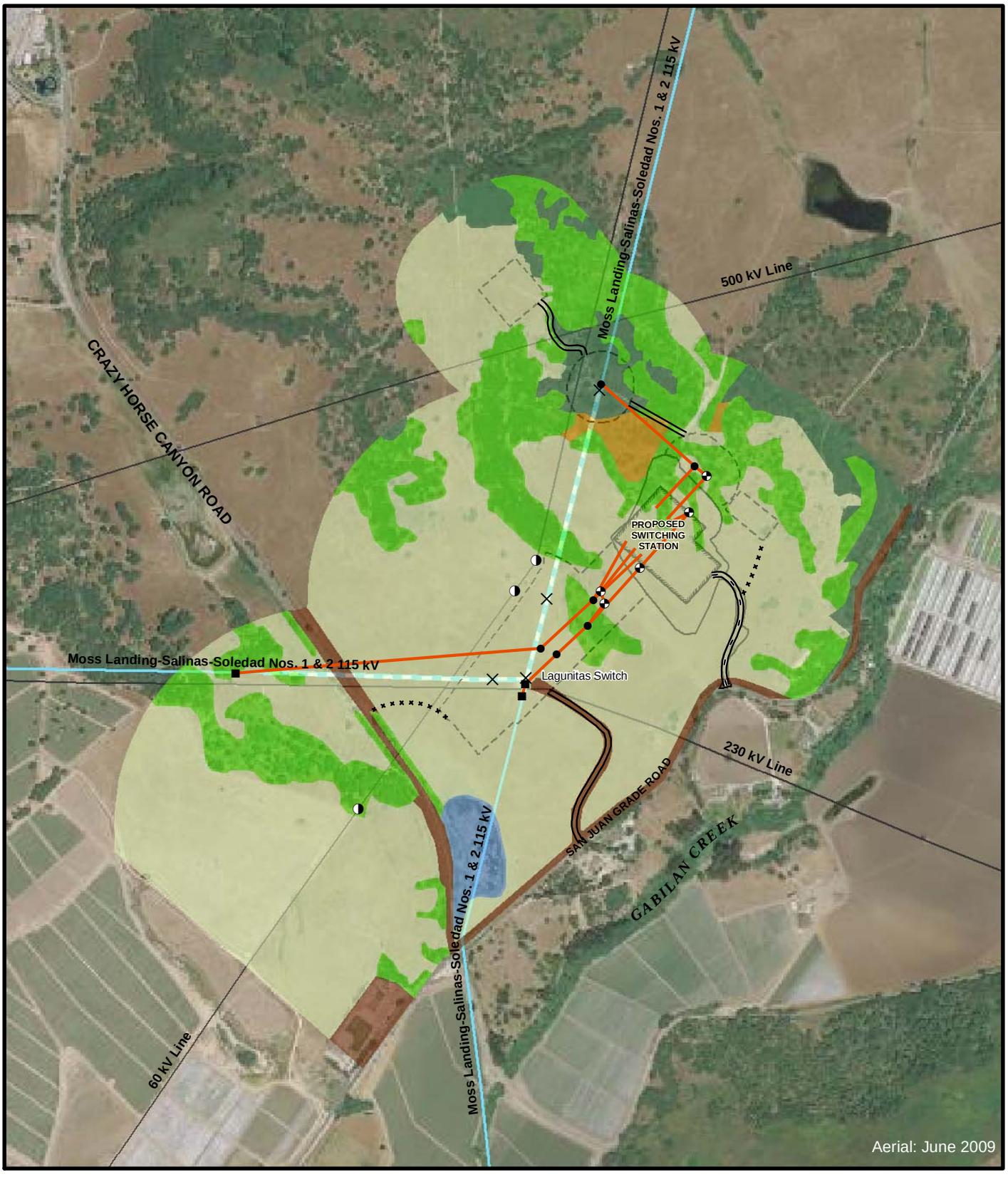
0 250 500 Feet

N

Scale = 1:10,000

THIS PAGE IS INTENTIONALLY LEFT BLANK

[BACK OF FIGURE 6-1]



- Existing tower
- Existing to be removed
- New tower location
- Existing wood pole(s)
- New TSP location
- Reconfigured power line
- Moss Landing-Salinas-Soledad Nos. 1 & 2 115 kV power line
- Existing power line to be removed
- Existing transmission or power line
- Existing access road
- New access road
- Temporary Access Road
- Proposed switching station
- Grade and fill boundary
- Temporary workspace
- Coast live oak woodland
- Coastal and valley freshwater marsh
- Coastal scrub
- Non-native grassland
- Northern mixed chaparral
- Ruderal/Developed

Figure 6-2
Plant Communities/Habitat Types
Crazy Horse Canyon Switching Station

PG&E

0 250 500 Feet

N

Scale = 1:10,000

THIS PAGE IS INTENTIONALLY LEFT BLANK

[BACK OF FIGURE 6-2]

The biologists walked transects, spaced less than 100 feet apart throughout this portion of the project area and 500-foot buffer. All burrows were examined for their suitability to house burrowing owls. All burrows were inspected for the presence of burrowing owl sign (molted feathers, cast pellets, prey remains, eggshell fragments, and excrement). Debris piles consisting of dead wood and twigs and the concrete culvert under San Juan Grade Road were also examined. Binoculars were used during the survey to identify species.

6.3.2.4.2 Protocol-Level Surveys: Aquatic Sampling

Biosearch Associates began aquatic protocol-level surveys for the California tiger salamander (CTS) and California red-legged frog (CRLF) in 2009. The USFWS concurred that the focused study designed for CTS would also be sufficient to determine presence of the CRLF. Aquatic sampling for CTS and CRLF larvae was performed at the two large ponds situated near the proposed switching station site: Lagunita Lake to the southwest, which is seasonal, and an unnamed pond to the northeast, which may be perennial (see Figure 10-1 in Chapter 10: Hydrology). Methodologies conformed to survey guidelines for the CTS provided by the USFWS and CDFG. Methodologies also followed conditions of a federal permit (PRT-758251-11 issued to Biosearch Associates), which included written approval from the USFWS Ventura Field Office dated March 12, 2009.

The ponds were sampled on March18, April 21, and May 20, 2009. Aquatic sampling was performed with long-handled (6-foot) dip-nets (14-inch basket; 1/8-inch mesh) and a 4- by 10-foot seine (1/8-inch mesh). The perimeter of each pond was walked and only dip-nets were used in March 2009 to reduce disturbance to amphibian eggs and again in May 2009 due to dense submergent vegetation and floating algal mats. In April 2009, the seine was used to sample both locations. At least two hours were spent sampling each pond during every visit.

All vertebrates captured were identified to species. Relative abundance of amphibian larvae were recorded as uncommon (<10 detected per person-hour sampling), common (between 10 and 100 per person-hour sampling) and abundant (>100 per person-hour sampling). Fish captured in nets were identified to species and incidental visual observations of amphibians and reptiles were also recorded. General habitat and physical characteristics of each pond and adjacent uplands were recorded during the initial visit, including approximate size, maximum depth at time of sampling, amount of emergent and surface vegetation relative to open water, water clarity and general types of upland vegetation communities. Photographs were taken of each pond.

The second year of aquatic sampling will commence and end in May 2010.

6.3.2.4.3 Protocol-Level Surveys: Upland Drift Fence Study

Biosearch Associates began protocol-level upland drift fence studies for the CTS prior to the wet season in 2009. The upland surveys followed methods issued by the USFWS and CDFG and conditions of permit TE 768251-11 issued to Biosearch Associates.

The perimeter of the switching station footprint and access road, estimated to be 3,600 feet, was enclosed with drift fencing. Some openings were left along the perimeter to allow movements of

wildlife, although more than 90 percent of the perimeter was enclosed. Pitfall traps, consisting of 2-gallon buckets with lids that are closed between trapping events, were installed at 65-foot spacing. Traps were paired inside and outside of the drift fencing for a total of 54 trap stations (108 traps).

On evenings when it was raining or rain was forecasted (greater than 50 percent based on the National Weather Service forecast), pitfall traps were opened prior to nightfall and checked the following morning, until no rain had fallen within the preceding 24 hours. When open, pitfall traps were shaded, protected from predator access, and kept moist with non-cellulose sponges. When not in use, traps were securely closed, and the drift fence and pitfall traps were inspected weekly to ensure the system was still operational. Repairs to fences were completed prior to the next night of sampling.

Pitfall traps were checked by permitted biologists only. All captured vertebrates were identified to species and released. California tiger salamanders were released near the point of capture at the entrance of a small mammal burrow or other suitable refugia. All CTS were measured, aged, sexed, photographed, checked for injury and had a single toe clipped. All toe tissue was collected according to Biosearch Associates' federal permit for future genetic analysis, if appropriate. Since non-native tiger salamanders are known from the region, it is important to determine if any resident tiger salamanders are native, non-native or hybrid. Trapping continued throughout the season to determine the number of individuals in the area and to gather additional tissue for genetic analysis. Disposable, nitrile gloves were used to handle each individual CTS.

The upland survey was completed on March 15, 2010. A second year of the upland drift fence study will not be conducted due to the confirmed presence of CTS in the switching station footprint.

6.3.2.5 Wetland Delineation

In October 2009 TRC surveyed 97 acres that encompassed the project area and a large buffer for wetlands. During the March 2010 rare plant survey, additional work areas and a buffer were also surveyed for wetlands (refer to Figure 6-1: Biological Survey and Wetland Study Areas). During the surveys, TRC used USACE's 1987 three-parameter (vegetation, hydrology, and soils) methodology to delineate jurisdictional waters of the U.S., focusing specifically on jurisdictional wetlands. The Arid West Supplement was also used in conjunction with the 1987 USACE Manual. Where differences in the two documents occurred, the Arid West Supplement took precedence over the USACE Manual. This methodology requires the collection of data on soils, vegetation, and hydrology at several locations to establish the jurisdictional boundary of wetlands.

Prior to beginning the field delineation, TRC examined aerial photographs of the project area and USGS 7.5-minute series quadrangle maps to determine the potential locations of jurisdictional waters of the U.S., including wetlands and historical blue-line features. The USFWS National Wetlands Inventory and available Natural Resources Conservation Service (NRCS) soil mapping data for the project area were also reviewed.

The entire study area was inspected and representative data points were collected throughout the area to determine the extent of wetland boundaries.

6.4 EXISTING CONDITIONS

The project area encompasses the proposed switching station site and the areas surrounding the switching station, the work areas and pull sites for the removal of four existing lattice steel towers and the installation of six new lattice steel tower structures and five new tubular steel poles, installation of a new permanent access road, the areas for the installation of temporary "shoo-fly" structures, and the installation of two temporary access roads. The northernmost work area will also be used as staging area for a helicopter.

The proposed project area is located north of the City of Salinas in Monterey County. Access to the site will be from San Juan Grade Road via a new access road. The proposed project area is located within pasture land that is actively being grazed. The project area is bounded on the west, north and east by a mixture of non-native annual grassland, oak woodland, and scrub/chaparral habitats, and on the south by San Juan Grade Road.

Surface water runoff within the vast majority of the project area generally flows from the north to the south towards San Juan Grade Road. A culvert transports water from the switching station area under the road and into an unnamed drainage that eventually flows into Gabilan Creek less than a quarter mile from the project area. A drainage complex consisting of three seasonal wetlands and four intermittent drainages were identified within the wetland delineation study area.

Lagunita Lake (a seasonal wetland located outside of the wetland study area) is found along the east side of Crazy Horse Canyon Road, immediately north of the intersection of San Juan Grade Road and southeast of the project area. An unnamed perennial pond is located northeast of the project area. Both features are shown on Figure 10-1 in Chapter 10: Hydrology.

6.4.1 Plant Communities/Habitat Types

The following plant communities are based on Holland's (1986) Preliminary Descriptions of the Terrestrial Natural Communities of California. Four different plant communities were identified in the biological survey area, all of which are present in the project area: 1) coastal scrub, 2) northern mixed chaparral, 3) coast live oak woodland, and 4) ruderal/developed. The plant communities also provide habitat for wildlife species. The following discussion focuses on the presence of four plant communities and habitat types within the project area.

6.4.1.1 Coastal Scrub

This plant community occupies a diversity of habitats from sea bluffs immediately above the ocean to drier hillsides as far as 20 miles from the ocean; the project area is approximately 12 miles from the coast. Coastal scrub consists of shrubs that are 0.5 to 2 meters tall and usually contains grassy openings. In the northern part of the project area, coastal scrub intergrades with the coast live oak woodland. Most growth and flowering occur in late spring and early summer.

Coastal scrub occurs on exposed, often south-facing slopes. Plants observed in this community included coyote brush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), sticky monkey-flower (*Mimulus auranticus*), black sage (*Salvia mellifera*), and poison oak (*Toxicodendron diversilobum*). Coastal scrub was observed in the northern part of the project area.

This type of habitat provides valuable resources for a number of species. Wildlife species associated with coastal scrub include the bobcat (*Lynx rufus*), wrentit (*Chamaea fasciata*), white-crowned sparrows (*Zonotrichia leucophrys*), southern alligator lizard (*Elgaria multicarinata*), Ensatina (*Ensatina eschscholtzii*), brush rabbit (*Sylvilagus bachmani*), as well as a number of small mammals.

6.4.1.2 Non-Native Grassland (Pasture)

Non-native grasslands occur in the majority of the project area and were either actively being grazed or had recently been grazed by cattle. Most of these species grow to less than 1 meter in height. Non-native grasslands in California are characterized by the dominance of naturalized non-native annual grasses from Mediterranean regions outside of California. The most common plant species observed within non-native grasslands in the project area included foxtail chess (*Bromus madritensis* ssp. *rubens*), wild oat (*Avena fatua*), and soft brome (*Bromus hordeaceus*). Associated forbs include clover (*Trifolium* sp.), mustard (*Brassica* sp.), and longbeak stork's bill (*Erodium botrys*). The project area falls primarily into this plant community. In the wetland in the southern portion of the project area, where the ground is saturated and may even pond for a period of time, hydrophilic plants typical of seasonal wetlands were observed. These plants include rushes (*Juncus* sp. and *Juncus xiphioides*), California blackberry (*Rubus ursinus*), poison hemlock (*Conium maculatum*), Bermuda grass (*Cynodon dactylon)*, and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*).

Although the non-native grasslands dominate the annual grasslands in the project area and are less beneficial to wildlife than native grasslands, the non-native grasslands still provide breeding and foraging habitat for a number of species. Species associated with this habitat may include a variety of rodent species such as, the California vole (*Microtus californicus*) and California ground squirrels (*Spermophilus beecheyi*) that utilize burrows in the grasslands. CTS can also utilize burrows in grasslands for aestivation. Raptors, including red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus leucurus*), barn owl (*Tyto alba*), American kestrel (*Falco sparverius*), northern harriers (*Circus cyaneus*), and others commonly use open grassland areas for foraging purposes, while species such as western meadowlark (*Sturnella neglecta*) and burrowing owl (*Athene cunicularia*) use open grassland areas for nesting. The CRLF can utilize grasslands for dispersal. Reptiles that commonly breed within grassland habitat include western fence lizard (*Sceloporus occidentalis*), Pacific gopher snake (*Pituophis catenifer catenfier*), and western rattlesnake (*Crotalus viridis*). Mammals in grassland include the coyote (*Canis latrans*).

6.4.1.3 Northern Mixed Chaparral

The northern mixed chaparral plant community consists of broad-leafed sclerophyllous shrubs, 2 to 4 meters tall, forming dense often nearly impenetrable vegetation dominated by chamise

(*Adenostema fasciculatum*) and one of several manzanitas (*Arctostaphylos* sp.) and ceanothus (*Ceanothus* sp.). The plants are typically deep-rooted. There is usually little or no understory of vegetation present in this plant community, but often there is considerable accumulation of leaf litter. Only elements of northern mixed chaparral were found in a mosaic with the coast live oak woodland and coastal scrub in the northern part of the project area. The dominant species observed were chamise with lesser components of manzanita. Pajaro Manzanita (*Arctostaphylos pajaroensis*, a CNPS 1B.1 listed plant, was also observed.

This community could support a variety of birds, mammals, and reptiles, including the deer mouse (*Peromyscus maniculatus*), western fence lizard, dusky-footed woodrat (*Neotoma macrotis*), western scrub-jay (*Aphelocoma californica*), California nightsnake (*Hypsiglena ochrorhyncha nuchalata*), California striped racer (*Masticophis lateralis lateralis*), and gopher snake. Black-tailed deer (*Odocoileus hemionus columbianus*) may retreat within shrubs of the northern mixed chaparral, where deer can more easily hide from predators, such as the mountain lion (*Felis concolor*), which is also a potential inhabitant.

6.4.1.4 Coast Live Oak Woodland

The coast live oak woodland community is dominated by coast live oak *(Quercus agrifolia),* an evergreen that reaches 10 to 25 meters in height. The understory of this plant community has a higher component of grasses (including ripgut brome (*Bromus diandrus*)) than shrubs where it intergrades with non-native grassland, forming an ecotone. However, in the northern part of the project area, there are more shrubs in the understory as the woodland intergrades with coastal scrub and northern mixed chaparral. Poison oak is ubiquitous whereas Mexican elderberry (*Sambucus mexicanus*) was observed only in a few places. The northern part of the project area falls within coast live oak woodland.

Oak woodland is one of the most important habitats for wildlife in California. This habitat type provides a browsing area for deer, rodents, lagomorphs, and various upland bird species that consume acorns heavily. Large predators, such as mountain lions and bobcats, can also be found in this plant community. Species that may use this habitat include the acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), western skink (*Eumeces skiltonianus*), Northern Pacific rattlesnake (*Crotalus oreganus oreganus*), and cottontail rabbits (*Sylvilagus* sp.). Bats may use trees for roosting.

6.4.1.5 Ruderal/Developed

This plant community consists of weedy species, such as mustard (*Brassica* sp.) and thistle (*Circium* sp.) that thrive in disturbed areas. Within the biological survey area this cover type is found solely as a thin strip along the San Juan Grade Road in the southern most portion of the project area.

6.4.2 Wetlands and Drainages

The features mapped within the approximately 156-acre wetland delineation study area include two jurisdictional seasonal wetlands and two jurisdictional intermittent drainages. As part of the same drainage complex of the jurisdictional wetlands and drainages, one non-jurisdictional seasonal wetland and two non-jurisdictional intermittent drainages were documented.

6.4.2.1 Seasonal Wetland

Three seasonal wetlands totaling approximately 1.19 acres have been delineated within the wetland delineation study area (see Figure 10-1 in Chapter 10: Hydrology). One of the wetlands is located in the northern portion of the project area, one is located in the southern portion and the other is approximately 100 feet west of the switching station. All three of the wetlands are part of a larger drainage complex and occur in areas where the topography becomes flatter than the surrounding land. Surface water runoff associated with these wetlands eventually flows offsite through a culvert under San Juan Grade Road.

Seasonal wetlands lack a restrictive layer, such as a hardpan or claypan; therefore, the hydrologic regime in these features is dominated by long periods of saturated soil conditions rather than inundation. The plant species found growing in these features are adapted to withstand long periods of saturation, but not prolonged periods of inundation. Mediterranean barley (*Hordeum marinum*) and Bermuda grass (*Cynodon dactylon*) were the dominant wetland plant species observed during the field survey.

6.4.2.2 Intermittent Drainage

Four intermittent drainages delineated within the wetland delineation study area amount to approximately 0.11 acre and are located in the middle of the project area. These drainages are part of a larger drainage complex that includes the seasonal wetlands described above. Surface water runoff associated with these features eventually flows offsite through a culvert under San Juan Grade Road.

Intermittent drainages are typically fed by groundwater and storm water runoff, and do not convey flows during extended dry periods. Intermittent drainages normally do not meet the three-parameter wetland criteria for vegetation, hydrology, and soils but do convey water and typically exhibit an ordinary high-water mark. The seasonal wetlands intercept flows from the intermittent drainages and appear to help release flows from the study area in a more consistent and even manner, and also have the ability to trap and hold sediments and other pollutants that could reach downstream navigable waters. Portions of the drainages within the study area are devoid of vegetation due to scouring while other areas are vegetated with annual grasses such as Mediterranean barley.

6.4.3 Special-Status Plant Species

Based on the initial data searches (CNDDB, CNPS website), field guides, and the USFWS species list, 37 special-status plant species were identified to potentially occur in or around the project area. Eighteen of these species are considered to have varying degrees of potential to

occur in the project area. The remaining 19 species are considered unlikely to occur or have no potential to occur in the project area because the project area is outside the elevation or habitat range of the species. Information on these species is summarized in Table 6-1.

6.4.4 Special-Status Wildlife Species

Special-status wildlife species that could occur within 5 miles of the project area based on data searches (CNDDB), field guides, the USFWS species list, and field surveys are listed in Table 6-2. Based on the habitat types in the project area, one invertebrate, nine amphibian/reptiles, fourteen birds, and eight mammals were identified as having varying degrees of potential to occur within the project area.

6.5 IMPACTS

Standards of significance were derived from Appendix G of the CEQA Guidelines.

6.5.1 Significance Criteria

Impacts to biological resources may be considered significant if they result in any of the following environmental effects:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as threatened or endangered, or as a candidate, sensitive, or special-status species (including MBTA 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 (e.g., serpentine grassland) identified in local or regional plans, policies, 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;

- result in the introduction or spread of a noxious weed or substantially increase the dispersal and spread of existing populations of noxious weeds such that an existing plant community or wildlife habitat is substantially degraded; or

- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other governmental habitat conservation plan.

Significant impacts to biological resources are not limited to projects affecting only federally or state-listed endangered species. A species that is not listed will also be considered rare or endangered if it can be shown to meet the following criteria (CEQA Guidelines 15380): its survival and reproduction in the wild are in immediate jeopardy from one or more causes, it exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens, or it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

6.5.2 Construction, Operation and Maintenance

Impacts to biological resources resulting from the construction of project facilities depend primarily on the proximity and quality of the habitat, the presence of special-status species, the presence of breeding habitat, and the effectiveness of measures instituted to protect these resources from exposure to project activities. Impacts to biological resources due to construction of the project facilities, as well as operation and maintenance of these facilities, are less than significant with incorporation of the APMs provided in Section 6.6.

6.5.3 Plant Communities/Habitat Types

6.5.3.1 Coastal Scrub

Construction occurring in the work areas and pull sites, installation of the new permanent access road and the two temporary access roads, and installation of temporary shoo-fly structures, will result in the approximate temporary loss of 0.14 acre of coastal scrub. There will be no permanent impacts to coastal scrub. The coastal scrub plant community could provide habitat for a variety of species; however, these impacts will be less than significant with implementation of the APMs incorporated into the project (see Section 6.6).

6.5.3.2 Non-native Grassland (Pasture)

Construction occurring in the work areas and pull sites, construction of the proposed switching station site, grading and filling, installation of the new permanent access road and the two temporary access roads, installation of temporary shoo-fly structures will result in the approximate permanent loss of 8.95 acres of non-native grassland habitat and the approximate temporary loss of 17.60 acres of non-native grassland habitat. The grasslands could provide habitat for a variety of species; however, these impacts will be less than significant with implementation of the APMs incorporated into the project (see Section 6.6).

Table 6-1: Potential of Sensitive Plant Species to Occur within Survey Area

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
Allium hickmanii Hickman's onion	CNPS 1B.2	Bulbiferous herb grows in closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, but mostly in valley and foothill grassland in sandy loam, damp ground and vernal swales; elevation range is 15 to 600 feet.			■	■	■								Unlikely; although survey area is within species' elevation range and suitable habitat is present, nearest CNDDB occurrence is approximately 12 miles southwest of survey area and all other records are even further south indicating that survey area may be outside of species' range. Species has not been found on east side of Salinas Valley where the project area is located.
Arctostaphylos gabilanensis Gabilan Mountains manzanita	CNPS 1B.2	Evergreen shrub grows in chaparral, cismontane woodland on granitic substrate; elevation range is 900 to 2,100 feet; known only from two occurrences in the Gabilan Mountains.	■												No potential; survey area below species' elevation range and granitic substrate is not present in survey area. Nearest CNDDB occurrence is approximately 8.8 miles southeast of the survey area.
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	CNPS 1B.2	Evergreen shrub grows in closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub in sandy soils, sandy shales, sandstone outcrops; elevation range is 255 to 1,610 feet.	■	■	■	■	■	■							Low potential; survey area within species' elevation range and suitable habitat present. Nearest occurrence is approximately 4.5 miles northwest of survey area; however, all other CNDDB occurrences are further west indicating that the survey area may be at, or outside, of species' range boundary.
Arctostaphylos montereyensis Toro manzanita	CNPS 1B.2	Evergreen shrub grows in maritime chaparral, cismontane woodland, coastal scrub in sandy soils; elevation range is 90 to 2,190 feet; known from fewer than		■	■										Unlikely; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 14 miles southwest of the survey area, and all other records are even further south

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		ten occurrences.		■	■										indicating that survey area may be outside of species' range.
Arctostaphylos pajaroensis Pajaro manzanita	CNPS 1B.1	Evergreen shrub grows in sandy chaparral; elevation range is 90 to 2,280 feet.	■	■	■									■	Moderate potential; survey area within species' elevation range and suitable habitat present; nearest CNDDB occurrence within 1.25 miles northwest of survey area.
Arctostaphylos pumila Sandmat manzanita	CNPS 1B.2	Evergreen shrub grows in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub/sandy, openings; elevation range is 9 to 615 feet; known from fewer than 20 occurrences.		■	■	■	■								Unlikely; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 14 miles southwest of the survey area and all other records are even further west indicating that survey area may be outside of species' range.
Arctostaphylos regismontana Kings Mountain manzanita	1B.2	Evergreen shrub grows in broadleaf upland forest, chaparral, North Coast coniferous forest on granitic or sandstone substrate; elevation range is 900 to 2,200 feet.	■	■	■	■									Unlikely; survey area below species' range, but suitable habitat present; nearest CNDDB occurrence is approximately 16 miles northwest of the survey area and all other records are even further north indicating that the survey area may be outside of species' range.
Astragalus tener var. *tener* Alkali milk-vetch	CNPS 1B.2	Annual herb grows in adobe clay in playas, valley and foothill grassland, alkaline vernal pools; elevation range is 3 to 180 feet.			■	■	■	■							Unlikely; survey area above elevation range of species but adobe clay soils were not observed; nearest CNDDB occurrence is approximately 6.5 miles southwest of survey area; however, the only source of information for this site is a 1889 collection and spot imagery for this vicinity in 2002. The area is now all developed and/or land is used for extensive ROW crop agriculture. According to the CNDDB, the species is probably

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
															extirpated.
Atriplex joaquiniana San Joaquin spearscale	CNPS 1B.2	Annual herb grows in chenopod scrub, meadows and seeps, playas, valley and foothill grassland/ alkaline; elevation is 3 to 2,505 feet.													Unlikely; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 11 miles east of the survey area and all other records are generally further east in Central Valley.
California macrophylla Round-leaved filaree	CNPS 1B.1	Annual herb grows in cismontane woodland, valley and foothill grassland/clay; elevation range is 45 to 3,600 feet.													Low potential; survey area within species' elevation range, but clay soils was not observed. Soil is very sandy in survey area; nearest CNDDB occurrence is approximately 2.8 miles northeast of survey area. The species has a large range occurring from Oregon to Baja California, but there are no records in Monterey or Santa Cruz County.
Castilleja rubicundula ssp. *rubicundula* Pink creamsacs	CNPS 1B.2	Annual herb grows in chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland/ serpentinite; elevation range is 60 to 2,700 feet.													Unlikely; survey area below species' elevation range and serpentine soil is not present; nearest CNDDB occurrence is approximately 10 miles north of survey area. This record is from 1992 and is an outlier. All other occurrences are approximately 150 miles further north in Sacramento Valley
Centromadia parryi ssp. *congdonii* Congdon's tarplant	CNPS 1B.2	Annual herb grows in valley and foothill grassland (alkaline); elevation range is 3 to 690 feet.													High potential; observed during a site visit next to Lagunita Lake; the nearest CNDDB occurrence is approximately 2.6 miles southwest of the survey area and there are several other occurrences in this general area.
Chorizanthe biloba var. *immemora* Hernandez spineflower	CNPS 1B.2	Annual herb grows in chaparral, cismontane woodland; elevation range is													No potential; survey area below species' elevation range but suitable habitat present; nearest CNDDB

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		1,800 to 2,400 feet; known from fewer than five occurrences.													occurrence is approximately 6 miles east of survey area and all other records are further to the southeast.
Chorizanthe pungens var. *pungens* Monterey Spineflower	FT, CNPS 1B.2 CH	Annual herb grows in chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland/sandy; elevation range is 9 to 1,350 feet.													High potential; survey area within species' elevation range and suitable habitat is present. Critical habitat outside of survey area; nearest CNDDB occurrence is approximately 2 miles west of survey area and all other occurrences in this area are further west indicating that the survey area is near or at boundary of species' range.
Chorizanthe robusta var. *robusta* Robust spineflower	FE, CNPS 1B.1	Annual herb grows in chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub/sandy or gravelly; elevation range is 9 to 900 feet; most populations extirpated, and now known from only six extended occurrences.													Moderate potential; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 10 miles southwest of survey area. Upon review of the extirpated and current population locations, survey area appears to be at eastern boundary of species' range.
Cordylanthus rigidus ssp. *littoralis* Seaside bird's-beak	SE, CNPS 1B.1	Hemiparasitic annual herb grows in closed-cone coniferous forest, chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub/sandy, often disturbed sites; elevation range is sea level to 1,275 feet; known from fewer than 20 occurrences.													Unlikely; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 8.5 miles west of the survey area and all other occurrences are even further west and southwest indicating that the survey area may be outside of species' range.
Delphinium hutchinsoniae Hutchinson's larkspur	CNPS 1B.2	Perennial herb grows in chaparral, coastal prairie, coastal scrub; elevation range													Unlikely; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		is sea level to 1,280 feet; known from approximately ten occurrences.			■	■	■	■							occurrence is approximately 11 miles southwest of survey area and all other occurrences are closer to coast from Monterey to Big Sur area.
Ericameria fasciculata Eastwood's goldenbush	CNPS 1B.1	Evergreen shrub grows in closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy, opening; elevation range is 90 to 825 feet; known from fewer than 20 occurrences in the Monterey Bay area.							■	■	■	■			Moderate potential; survey area within species' elevation range and suitable habitat present; nearest CNDDB occurrence is approximately 3.25 miles west of survey area.
Eriogonum nortonii Pinnacles buckwheat	CNPS 1B.3	Annual herb grows in chaparral, valley and foothill grassland/sandy, often on recent burns; elevation range is 900 to 2,925 feet; known from approximately 20 occurrences.					■	■	■	■	▒				Low potential; survey area below species' elevation range but suitable habitat present; nearest CNDDB occurrence is 4.3 miles southwest of survey area.
Eryngium aristulatum var. *hooveri* Hoover's button-celery	CNPS 1B.1	Annual/perennial herb grows in vernal pools; elevation range is 9 to 135 feet; almost all collections old.							■						No potential; survey area above species' elevation range and no suitable habitat present; nearest CNDDB occurrence is approximately 15 miles northeast of survey area.
Erysimum ammophilum Sand-loving clover	CNPS 1B.2	Perennial herb grows in sandy openings in chaparral, coastal dunes, and coastal scrub; elevation range is sea level to 180 feet.		■	■	■	■	■							Unlikely; survey area above species' elevation range but suitable habitat with sandy openings are present; nearest CNDDB occurrence is approximately 12 miles southwest of the survey area. Species' range is closer to the coast.
Fritillaria liliacea Fragrant fritillary	CNPS 1B.2	Bulbiferous herb grows in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill		■	■	■									Moderate potential; survey area within species' elevation range, rather than serpentine or clay substrate, soils in survey area are more sandy;

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		grassland; often grows in serpentinite, but various soils reported though usually clay, in grassland; elevation range is 9 to 1,230 feet.		■	■	■									nearest CNDDB occurrence approximately 1.5 miles southwest of survey area.
Gilia tenuiflora ssp. *arenaria* Sand gilia	FE, ST, CNPS 1B.2	Annual herb grows in maritime chaparral, cismontane woodland; coastal dunes, and on light sandy soil or sandy clay in openings in coastal scrub; often occurs with non-natives; elevation range is sea level to 135 feet; known from fewer than 20 occurrences.				■	■	■							No potential; survey area above species' elevation range but suitable habitat present; nearest CNDDB occurrence is approximately 12 miles southwest of the survey area and all other occurrences are closer to the coast indicating that survey area may be outside of species' range.
Holocarpha macradenia Santa Cruz tarplant	FT, SE, CNPS 1B.1	Annual herb grows in coastal prairie, coastal scrub, valley and foothill grassland/often clay, sandy; elevation range is 30 to 660 feet; known from fewer than 15 occurrences.						■	■	■	■	■			Low potential; survey area within species' elevation range and suitable habitat present; nearest CNDDB occurrence is approximately 10 miles northwest of the survey area and all other occurrences are further to the northwest indicating that the survey area is near, or outside, of the species' range boundary.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	CNPS 1B.1	This annual herb grows in closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy or gravelly, openings; elevation range is 30 to 600 feet; historical occurrences need field surveys.				■	■	■	■	■	■				Low potential; survey area within species' elevation range and suitable habitat present; however, nearest CNDDB occurrence is approximately 12 miles southwest of the survey area and all other occurrences generally occur closer to the coast indicating that the survey area may be near the species' range boundary.
Lasthenia conjugens Contra Costa goldfields	FE, CNPS 1B.1	Annual herb grows in cismontane woodland, playas (alkaline), valley and foothill			■	■	■	■							Moderate potential; survey area within species' elevation range and suitable habitat present; nearest

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		grassland; vernal pools, swales, low depressions, in open grassy areas; elevation range is sea level to 1,410 feet; many historical occurrences extirpated.			■	■	■	■							CNDDB occurrence is approximately 13 miles southwest of the survey area.
Lessingia hololeuca Woolly-headed lessingia	CNPS 3	Annual herb grows in broad-leafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland on clay or serpentinite substrate; elevation range is 45 to 915 feet.						■	■	■	■	■			Low potential; survey area within species' elevation range but clay and serpentine substrate are not present. The CNDDB does not map List 3 CNPS plants, but species occurs somewhere in Monterey County. Species ranges from Tehama to Monterey and Tulare County.
Malacothamnus aboriginum Indian Valley bush-mallow	CNPS 1B.2	This deciduous shrub grows in chaparral, cismontane woodland/rocky, granitic, often in burned areas; elevation range is 450 to 5,100 feet; appears in abundance after fires.				■	■	■	■	■	■	■			Low potential; survey area within species' elevation range but area does not appear to burn frequently; nearest CNDDB occurrence is approximately 10 miles east of the survey area. With the exception of one occurrence in San Mateo County all other occurrences are further to the south of the survey area indicating that the survey area may be near or outside of the boundary of the species' range.
Monardella antonina ssp. *antonina* San Antonio Hills monardella	CNPS 3	Rhizomatous herb grows in chaparral, cismontane woodland; elevation range is 1,500 to 3,000 feet.						■	■	■					No potential; survey area below species' elevation range but suitable habitat present. The CNDDB does not map List 3 CNPS plants, but species occurs somewhere in Monterey County. Species ranges from Contra Costa to Monterey County.
Navarretia prostrate Prostrate vernal pool navarretia	CNPS 1B.1	Annual herb grows in coastal scrub, meadows and seeps, valley and foothill grassland,				■	■	■	■						Moderate potential; survey area within species' elevation range and suitable habitat present.

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
		(alkaline), vernal pools/mesic; elevation range is 45 to 2100 feet.				■	■	■	■						
Pinus radiata Monterey pine	CNPS 1B.1	Evergreen tree grows in closed-cone coniferous forest, cismontane woodland; elevation range is 75 to 555 feet; only three native stands in California, at Año Nuevo, Cambria, and the Monterey Peninsula; introduced in many areas.			■	■	■								No potential; survey area within species' elevation range and suitable habitat present but not observed; nearest records are from the Prunedale area and all other records are even closer to the coast indicating that the survey area is outside of the species' range. CNPS (2001) records for the Moss Landing (387D), Prunedale (386C), Soquel (387B) and Watsonville West (387A) quadrangles are erroneous in that they represent non-native stands.
Piperia yadonii Yadon's rein orchid	FE, CNPS 1B.1 CH	Perennial herb grows in coastal bluff scrub, closed-cone coniferous forest, chaparral (maritime)/sandy; elevation range 30 to 1530 feet.		▒			■	■	■	■					Low potential; survey area within species' elevation range but suitable habitat not present. Critical habitat outside of survey area.
Plagiobothrys glaber Hairless popcorn-flower	List 1A	Annual herb grows in meadows and seeps (alkaline), marshes and swamps (coastal salt); elevation range is 45 to 420 feet; last confirmed sighting in 1954. Possibly relocated near Antioch; identification uncertain. All collections since 1930's located in the Hollister area; plant should also be looked for there. Possibly a variety of *P. stipitatus.*			■	■	■								No potential; survey area within species' elevation range but no suitable habitat present; species presumed extirpated; nearest CNDDB 13 miles northwest of survey area from 1954.

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Survey Period (Flowering)**												**Potential to Occur within Survey Area**
			J	F	M	A	M	J	J	A	S	O	N	D	
Rosa pinetorum Pine rose	CNPS 1B.2	Shrub grows in closed-cone coniferous forest; elevation range is 6 to 900 feet.													No potential; survey area within species' elevation range but no suitable habitat present; nearest CNDDB occurrence is approximately 4.8 miles northwest of the survey area.
Streptanthus albidus ssp. *peramoenus* Most beautiful jewel-flower	CNPS 1B.2	Annual herb grows in chaparral, cismontane woodland, valley and foothill grassland/ serpentinite; elevation range is 280 to 3,000 feet; historical occurrences need field surveys.													Unlikely; survey area within species' elevation range but no serpentine soil is present in survey area; nearest CNDDB occurrence is approximately 12 miles north of the survey area.
Trifolium buckwestiorum Santa Cruz clover	CNPS 1B.1	Annual herb grows in broad-leafed upland forest, cismontane woodland, coastal prairie/gravelly, margins; elevation range is 315 to 1830 feet; known from fewer than 15 very small occurrences; only one fully protected.													Moderate potential; survey area within species' elevation range and suitable habitat present; nearest CNDDB occurrence is approximately 12 miles southwest of the survey area.
Trifolium depauperatum var. *hydrophilum* saline clover	CNPS 1B.2	Annual herb grows in marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools; elevation range is sea level to 900 feet; many sites likely extirpated; need current information on rarity and endangerment.													Low potential; survey area within species' elevation range, but alkaline soils not present; nearest CNDDB occurrence is approximately 9 miles north of the survey area.

Sources: Hickman, 1993; Calflora, 2008; CNPS, 2008. Blooming period is indicated in dark gray; light gray shading indicates blooming is uncommon.

STATUS CODES:

U.S. Fish and Wildlife Service

FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government

California Department of Fish and Game

SE = Listed as Endangered by the State Government
ST = Listed as Threatened by the State Government

California Natural Plant Society

CNPS 1A = Presumed extinct in California
CNPS 1B = Rare, threatened, or endangered in California
CNPS 2 = Rare, threatened, or endangered in CA, but more common elsewhere
CNPS 3 = Need more information about this plant (Review List)
0.1 = Seriously endangered in CA
0.2 = Fairly endangered in CA
0.3 = Not very endangered in CA

Table 6-2: Potential of Sensitive Wildlife Species to Occur within Survey Area

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
Invertebrates			
Branchinecta lynchi Vernal pool fairy shrimp	FT	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains; in cool-water rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools. The range of the species extends from disjunct locations in Riverside County and the Coast Ranges, north through Central Valley grasslands to Tehama County, and then to a disjunct area of remnant vernal pool habitat in the Agate Desert of Oregon.	Low potential; potential habitat is present in the seasonal wetlands; however, nearest CNDDB occurrence is approximately 40 miles southeast in San Benito County.
Fish			
Oncorhynchus mykiss irideus Steelhead - south/central California coast ESU	FT, CH in Gabilan Creek	Steelhead are anadromous fish, meaning adults migrate from the ocean to spawn in freshwater lakes and streams where their offspring hatch and rear prior to migrating to the ocean to forage until maturity. The timing of upstream migration is correlated with higher flow events, such as freshets or sand bar breaches together with lower temperatures during the winter months. At spawning, thousands of eggs are laid in freshwater gravel nests excavated by females. Depending on lake/stream temperatures, eggs incubate for several weeks to months before hatching. Following yolk sac absorption, juveniles called fry begin actively feeding. Juveniles may spend from a few hours to several years in freshwater areas before migrating to the ocean. Habitat loss has been acute in the Salinas basin.	No potential; but could be affected if water contaminated from the project gets into its habitat (Gabilan Creek). Summer pools are extremely vulnerable to water quality impacts.
Amphibians			
Ambystoma californiense California tiger salamander	FT, ST	Adults spend most of the year in subterranean refugia, especially burrows of California ground squirrels and occasionally man-made structures. During breeding migrations, individuals are sometimes found under surface objects, such as rocks and logs. Postmetamorphic juveniles retreat to small-mammal burrows after spending a few hours or days in mud cracks near water or tunnels constructed in soft soil. Aquatic larvae seek cover in turbid water, clumps of vegetation, and other submerged debris. Central valley DPS listed as threatened. Santa Barbara and Sonoma counties DPS listed as endangered. Species breeds in vernal pools and other temporary rainwater ponds, including cattle ponds following relatively warm rains in November to February and on	Present; one juvenile was found trying to enter the project site during the upland protocol survey. Breeding habitat exists in Lagunita lake and unnamed pond (although both aquatic features contain fish). Species could also occur in burrows in the

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
		submerged debris in shallow water.	grasslands. Nearest CNDDB occurrence is 0.8 mile northeast of the survey area and another record is approximately 1.5 miles west of the survey area.
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	FE, SE, FP	Inhabits temporary ponds for breeding and adjacent upland scrub and woodland areas during the nonbreeding season. These ponds and adjacent scrub and woodland habitats are restricted naturally to relatively few areas along the central coast of California. Species spends a substantial portion of its life underground in small mammal burrows. Northern or Santa Cruz County metapopulation is restricted to area bounded by Valencia Creek on the north, Corralitos Creek on the east, Pajaro River on south, and Pacific Ocean on west, Central or McClusky Slough metapopulation is found in region between Pajaro River and Elkhorn Slough, and Southern or Moro Cojo metapopulation is located between Elkhorn Slough and Salinas River.	No potential; species' range is very restricted and generally closer to coast northwest of survey area; nearest CNDDB occurrence is approximately 7 miles west of survey area.
Rana aurora draytonii California red-legged frog	FT, CSC	Occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Breeds January to July (peak in February). Requires 11 to 20 weeks of permanent water for larval development. Females attach eggs to vegetation 2 to 6 in below the surface. Requires access to aestivation habitat. Individuals have been found considerable distances from breeding sites on rainy nights.	Low potential; breeding habitat is present outside but close to the survey area. Barrier of San Juan Grade Road exists between breeding habitat and dispersal habitat. Species could use survey area for dispersal. Pacific treefrog tadpoles (food source) were observed in well located in the survey area; nearest CNDDB occurrence is approximately 0.7 miles northwest from survey area.
Rana boylii Foothill yellow-legged frog	CSC	The foothill yellow-legged frog is found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types.	No potential; no rocky streams present within survey area; nearest verified sighting is approximately 25 miles northwest east of the Morgan Hill and Gilroy area.
Spea hammondii Western spadefoot	CSC	Occurs primarily in grasslands, but occasional populations also occur in valley-foothill hardwood woodlands. Grasslands with shallow temporary pools are optimal habitats.	Unlikely; no suitable habitat in survey area; nearest

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
		Species is rarely found on the surface. Most of the year is spent in underground burrows up to 36 inches deep, which they construct themselves. Some individuals also use mammal burrows. Recently metamorphosed juveniles seek refuge in the immediate vicinities of breeding ponds for up to several days after transformation. They hide in drying mud cracks, under boards and other surface objects, including decomposing cow dung. Breeding and egg-laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains.	CNDDB occurrence is approximately 10 miles northeast of the survey area in the Hollister area where species was seen in a highly seasonal pond that was nearly dry by April 25 in 2005; based on verified museum record, species is believed to be extinct from the mouth of the Salinas Valley near the survey area.
Taricha torosa torosa Coast Range newt	CSC	Occurs primarily in valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub, and mixed chaparral, but is also known from annual grassland and mixed conifer types. Terrestrial individuals seek cover under surface objects such as rocks and logs, or in mammal burrows, rock fissures, or human-made structures such as wells. Aquatic larvae find cover beneath submerged rocks, logs, debris, and undercut banks.	High potential; could migrate though survey area during the rainy season; nearest CNDDB occurrence is approximately 2 miles northwest of survey area.
Reptiles			
Actinemys marmorata pallida Southwestern pond turtle	CSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Hibernation in colder areas is passed underwater in bottom mud. Along large slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes moving considerable distances to find a suitable nest site. A nest has been reported in a clover field 325 feet from water.	Moderate potential; except for a well with Pacific treefrog tadpoles, no permanent waterbody is located within the survey area. An unnamed pond is located northeast of the study area and the species was present during aquatic surveys for the CTS. Lagunita Lake is dry during the summer; species may occur in survey area when traveling overland. The closest CNDDB record is 0.3 miles northwest of the survey

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
			area.
Anniella pulchra nigra Black legless lizard	CSC	Common in several habitats but especially in coastal dune, valley-foothill, chaparral, and coastal scrub types. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Legless lizards sometimes seek cover under surface objects such as flat boards and rocks where they lie barely covered in loose soil. They are often encountered buried in leaf litter and commonly burrow near the surface through loose soil.	Moderate potential; could occur in oak woodland; leaf litter present under trees and soils are loose and sandy. CNDDB records are deemed sensitive but species has been recorded somewhere between 2.3 to 10 miles west of survey area.
Phrynosoma blainvillii (=Anota coronatum) Blainville's (Coast) horned lizard	CSC	Occurs in valley foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats. Inhabits open country, especially sandy areas, washes, flood plains and wind-blown deposits in a wide variety of habitats. Predators and extreme heat are avoided by horned lizards by burrowing into loose soil. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices.	Unlikely; soil is loose and sandy in some areas. Based on verified museum records, species is believed to be extinct in survey area; nearest verified record is from Gilroy area.
Birds			
Accipiter striatus Sharp-shinned hawk	WL (nesting)	Probably breeds south in Coast Ranges to about 35° latitude, and at scattered locations in the Transverse and Peninsular Ranges. Uses dense stands in close proximity to open areas. Roosts in intermediate to high-canopy forest. Nests in dense, even-aged, single-layered forest canopy. Winters in woodlands. Nest typically located within 275 feet of water.	Although there is no CNDDB record, there is moderate potential for the species to roost in the oak woodland; survey area is on boundary of species' year-long range. Low potential for nesting.
Accipiter cooperii Cooper's hawk	WL (nesting)	Frequents landscapes where wooded areas occur in patches and groves. Often uses patchy woodlands and edges with snags for perching. Dense stands with moderate crown-depths used for nesting. Nests in deciduous trees in crotches 10 to 80 feet, but usually 20 to 50 feet, above the ground. Nesting and foraging usually occur near open water or riparian vegetation. Usually nests in second-growth conifer stands, or in deciduous riparian areas, usually near streams. Seldom found in areas without dense tree stands, or patchy woodland habitat.	Moderate potential for nesting in oak woodland; nearest CNDDB occurrence is approximately 5.5 miles south of survey area where two adults and nestlings were observed in nest in May 2004.
Agelaius tricolor	CSC	Frequents fresh emergent wetlands. Nest may be located up to 4 miles from foraging	Low potential for nesting

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
Tricolored blackbird	(nesting colonies)	areas. Seeks cover in emergent wetland vegetation, especially cattails and tules; also in trees and shrubs. Roosts in large flocks in emergent wetland or in trees. Usually nests in dense cattails or tules; also nests in thickets of willow, blackberry, wild rose, tall herbs. Nest usually located a few feet over, or near, fresh water; also may be hidden on ground among low vegetation. Builds nest of mud and plant materials. Highly colonial; nesting area must be large enough to support a minimum colony of about 50 pairs.	colonies to occur in survey area where it could nest in trees or shrubs; nearest CNDDB occurrence is from Lagunita Lake where in 1971, approximately 1,000 individuals were observed.
Ammodramus savannarum Grasshopper sparrow	CSC (nesting)	Frequents dense, dry or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting. Uses scattered shrubs for singing perches. Apparently thick cover of grasses and forbs is essential for concealment. The Grasshopper sparrow occurs in California primarily as a summer resident from March to September; the breeding season extends from mid-March to August.	Low potential; non-native grassland is grazed nearly everywhere within survey area and does not provide adequate cover for nesting.
Aquila chrysaetos Golden eagle	FP, WL (nesting and wintering)	Uses rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops. Nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments used most frequently for nesting. Needs open terrain for hunting; grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats.	Low potential for nesting; suitable hunting grounds present in non-native grassland. The nearest CNDDB occurrence is within approximately 0.9 mile northwest of survey area where an adult was observed near a nest site in July 2001.
Asio otus Long-eared owl	CSC (nesting)	Breeds from valley foothill hardwood up to ponderosa pine habitats. Species roosts and nests in riparian or other thickets with small, densely canopied trees. Old crow, magpie, hawk, heron, and squirrel nests in a variety of trees with dense canopy are used. Nest usually 10 to 50 feet above ground, rarely on ground or in tree or snag cavity. Breeding was confirmed at the Hastings Natural History Museum and near Carmel Valley, Monterey County.	Low to moderate potential; denser oak woodland areas provide habitat for this species. Old raptor nest was found near survey area and could be used by this species. No CNDDB occurrences were found.
Athene cunicularia Burrowing owl	CSC (burrow sites and some wintering sites)	Frequents open grasslands and shrublands with perches and burrows. Usually nests in old burrow of ground squirrel, or other small mammal. May dig own burrow in soft soil. Pipes, culverts, and nest boxes may be used where burrows scarce. Species has declined in the Monterey County, with small population remaining near Salinas and King City.	Unlikely potential; oak trees provide habitat for other raptors that would most likely prey upon owls, especially if young were present. Results of survey conducted for burrows showed lack of suitable burrows for the owl

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
			in the project area; nearest CNDDB occurrence is approximately 3.5 miles southwest of the survey area. One owl was observed occupying a ground squirrel burrow in January 2007.
Circus cyaneus Northern harrier	CSC (nesting)	Mostly found in flat, or hummocky, open areas of tall, dense grasses, moist or dry shrubs, and edges for nesting, cover, and feeding; seldom found in wooded areas. Nests on ground in shrubby vegetation, usually at marsh edge. Mostly nests in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water. In Monterey County breeding numbers have declined, but harriers are found from Elkhorn Slough and the Salinas River mouth southeast through the Salinas Valley.	Low potential for foraging and nesting; there is marginal nesting habitat east of the freshwater marsh; rather than on flat area topography, survey area is on a hillside, which is not a favorite hunting ground for species.
Dendroica petechia Yellow warbler	CSC (nesting)	Frequents open to medium-density woodlands and forests with a heavy brush understory in breeding season. In migration, found in a variety of sparse to dense woodland and forest habitats. In summer usually found in riparian deciduous habitats: cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland. A population of roughly 500 to 900 pairs occurs in Monterey County.	Moderate to high potential; could occur in oak woodland and hunt for prey in non-native grassland. No CNDDB occurrences were found.
Elanus leucurus White tailed-kite	FP (nesting)	Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Nest placed near top of dense oak, willow, or other tree stand; usually 20 to 100 feet above ground. Nest located near open foraging area.	High potential; could occur in oak woodland and hunt for prey in non-native grassland; nearest CNDDB occurrence is approximately 8 miles west of survey area.
Icteria virens Yellow breasted chat	CSC (nesting)	Found up to about 4,800 feet in valley foothill riparian. Frequents dense, brushy thickets and tangles near water, and thick understory in riparian woodland. Requires riparian thickets of willow and other brushy tangles near watercourses for cover. The nest is usually 2 to 8 feet above ground in dense shrubs along a stream or river. This species is a rare and local breeder in Monterey County, where the current population of about 40 pairs is distributed patchily along the Salinas and Carmel river systems and along the San Antonio Reservoir.	Unlikely; no suitable habitat present; nearest CNDDB occurrence is approximately 17 miles southeast of survey area.
Lanus ludovicianus Loggerhead shrike	CSC (nesting)	Rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane California; uses herbaceous lowlands with variable	Moderate potential; suitable habitat present; could occur

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
		tree growth and dense population of voles. Substantial groves of dense, broad-leafed deciduous trees used for nesting and roosting. The species is uncommon in Monterey County, especially from Greenfield south, and have declined seriously in the agricultural region of the Salinas Valley.	in oak woodland and hunt for prey in non-native grassland; survey area is near boundary of species' breeding range. No CNDDB occurrences were found.
Contopus cooperi Olive-sided flycatcher	CSC (nesting)	Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain. Extent and density of forest habitat less important than the amount of air space that can be scanned from its highest perches. Requires large, tall trees, usually conifers, for nesting and roosting sites; also lofty perches, typically the dead tips or uppermost branches of the tallest trees in vicinity, for singing posts and hunting perches.	Unlikely; no suitable habitat present in survey area.
Vireo bellii pusillus Least Bell's Vireo	FE, SE	Species prefers to nest in low, dense, scrubby vegetation in areas of early succession and is particularly dependent on corridors of habitat along rivers and streams; particularly important is dense shrub layer between 0.6 and 3.0 meters from the ground. Nests are placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite. Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet.	Unlikely; suitable nesting habitat is not present in survey area; nearest CNDDB occurrence from 2001 is approximately 15 miles northeast of survey area in Gilroy area.
Mammals			
Bassariscus astutus Ring-tailed cat	FP	Widely distributed, common to uncommon permanent resident. Occurs in various riparian habitats, and in brush stands of most forest and shrub habitats, at low to middle elevations. Little information available on distribution and relative abundance among habitats. Uses hollow trees, logs, snags, cavities in talus and other rocky areas, and other recesses for cover.	Unlikely potential; the majority of the survey area is too open and not near riparian habitat. Species is not being tracked on the CNDDB.
Antrozous pallidus Pallid bat	CSC	Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Roost must protect bats from high temperatures. Bats move deeper into cover if temperatures rise. Night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but probably uses rock crevices.	Moderate potential; may use tree hollows for day roosts and open areas for foraging. The nearest CNDDB occurrence is approximately 5.5 miles north of the survey area.
Corynorhinus townsendii	CSC	Prefers mesic habitats. Gleans from brush or trees or feeds along habitat edges. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting.	Low potential; no suitable roosting habitat within survey

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
Townsend's big-eared bat		May use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are cold, but not below freezing. Individuals may move within the hibernaculum to find suitable temperatures. Maternity roosts are warm. Roosting sites are the most important limiting resource. Found throughout most of California from sea level along the coast to 1,820 m in the Sierra Nevada, with populations concentrated in areas offering caves (commonly limestone or basaltic lava) or mines as roosting habitat.	area, but may forage over survey area. Nearest record from before 1978 is in the Gabilan Range approximately 5 miles southeast of the survey area.
Dipodomys venustus venustus Santa Cruz (narrow-faced) kangaroo rat	CSC	Suitable habitat is characterized by open areas surrounded by chaparral, foothill woodlands, and brush/ herbaceous edges. Undisturbed, well-drained loam and sandy loam soils are required for burrowing. Species uses burrows for cover. Occurs in the cool, maritime mountains of west-central California. Historical records range from Mount Hamilton to Corralitos, with most specimens collected around Mount Hermon, Felton, and Bonny Doon in Santa Cruz County. Populations in the Santa Cruz Mountains are disjunct from populations in the Diablo and Gabilan ranges.	Unlikely; survey area is between Santa Cruz County populations and disjunct populations in the Gabilan Ranges; however, suitable habitat present within survey area; nearest record is approximately 5.5 miles southeast of the survey area.
Eumops perotis californicus Western mastiff bat	CSC	This species with a large wing span resides at low elevations in the coastal basins. It primarily roosts in crevices in vertical cliffs, usually granite or consolidated sandstone, and in broken terrain with exposed rock faces; it may also be found occasionally in high buildings, trees and tunnels.	Low potential; nearest CNDDB occurrence is approximately 12 miles northeast in Hollister. Bat may use trees that exist within survey area to roost and may use survey area to forage. The bat may be attracted to this general area by the nearby stock pond, which is large enough to allow this large wingspan species to use as a water source.
Lasiurus blossevillii Western red bat	CSC	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging. Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground-cover. Such sites minimize water loss. Roosts may be from 2 to 40 feet above ground level. Females and young may roost in higher sites than males.	No potential; species prefers riparian habitat. No riparian habitat in survey area; nearest CNDDB occurrence from before 1978 is approximately 7.5 miles southwest of the survey area. There are also records from the Hollister

Scientific Name **Common Name**	**Status**	**General Habitat Description**	**Potential to Occur within Survey Area**
			and Watsonville areas.
Neotoma macrotis luciana Monterey dusky-footed woodrat	CSC	Prefers forest habitats with moderate canopy, year-round greenery, a brushy understory, and suitable nest building materials. Well-developed understory at base of a single evergreen may be suitable for a single individual. Prefers moderate canopy in a variety of habitats. Houses are built of sticks and leaves at the base of, or in a tree, around a shrub, or at the base of a hill. Houses may measure 8 feet in height and 8 feet in diameter.	No potential; survey areas are out of the specie's range.
Taxidea taxus Badger	CSC	Occurs is herbaceous, shrub, and open stages of most habitats with dry, friable soils. Badgers dig burrows in friable soil for cover and frequently reuse old burrows, although some may dig a new den each night, especially in summer. Badgers are rare in Monterey County.	High potential to occur in survey area; although no large burrows were noticed. Nearest CNDDB occurrence is 0.9 mile northwest of the survey area.

Sources: CDFG 1985, 1990a, 1990b, and 2008; DOI, 2004a and 2004b; Shuford and Gardali, 2008; William, 2008; personal communications with Biosearch Associates, 2010

STATUS CODES:

U.S. Fish and Wildlife Service

CH = Critical Habitat within 5 Miles of Survey area
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government

California Department of Fish and Game

SE = Listed as Endangered by the State Government
ST = Listed as Threatened by the State Government
CSC = Listed as California Species of Special Concern
WL = Watch List
FP = Fully Protected

THIS PAGE IS INTENDED TO BE LEFT BLANK

6.5.3.3 Northern Mixed Chaparral

Construction occurring in the work areas and pull sites, installation of the new permanent access road and the two temporary access roads, and installation of temporary shoo-fly structures, will result in the approximate temporary loss of 3.02 acres of northern mixed chaparral. There will be permanent impacts to the northern mixed chaparral. The northern mixed chaparral plant community could provide habitat for a variety of species; however, these impacts will be less than significant with implementation of the APMs incorporated into the project (see Section 6.6).

6.5.3.4 Coast Live Oak Woodland

Construction of the proposed switching station site and grading and filling will result in the approximate permanent loss of 2.28 acres and the temporary loss of 3.97 acres of coast live oak woodland. Approximately 30 oak trees will have to be removed. Impacts to the coast live oak woodland will be less than significant with implementation of the APMs listed in Section 6.6.

6.5.3.5 Ruderal/Developed

Construction of the access road will result in the approximate permanent loss of 0.04 acre and the temporary loss of 0.23 acre of ruderal habitat. This impact will be less than significant.

6.5.3.6 Seasonal Wetland, Intermittent Drainage and Gabilan Creek

Approximately 0.05 acre of seasonal wetland will be permanently lost due to construction of the permanent access road. Approximately 0.49 acre of seasonal wetland and approximately 0.41 acre of intermittent drainage will be temporarily affected due to construction occurring in one of the work areas.

With implementation of PG&E's APMs, PG&E will prevent sediment-laden runoff from affecting these water features and Gabilan Creek. Prior to ground disturbance in the project area PG&E will install appropriate best management practices to protect these aquatic resource and any species that may be present in these habitats.

The APMs as listed in Section 6.6 and in Chapter 10: Hydrology and Water Quality will ensure that the impacts to the hydrology and aquatic habitats are less than significant.

6.5.4 General Wildlife

Direct mortality of general wildlife species could occur during construction as a result of increased vehicular and foot traffic and use of heavy construction equipment. Some wildlife species are expected to leave the immediate vicinity of the project area once construction starts and will instead use the substantial amount of nearby unaffected habitat. As a result, minimal to no direct mortality is expected to occur. Applicant proposed measures outlined in Section 6.6 will minimize impacts to general wildlife species. Impacts to general wildlife populations will be temporary and less than significant.

6.5.4.1 Nesting Passerines

Noise and activity, including the use of a helicopter, associated with construction of the proposed switching station could cause disturbance to other avian species that are not designated as special-status species. Work performed near foraging habitat and the noise of a helicopter could cause some birds to disperse, but this would be a temporary and less than significant impact. Construction and helicopter activities also have the potential to cause nest abandonment if nests are present, and removal of trees and vegetation could potentially destroy nests and disturb nesting birds. Species covered under the MBTA are protected, and nest abandonment and destruction may be a significant impact. However, PG&E has designed the project with APMs to minimize impacts to nesting passerines as described in Section 6.6. Impacts will be less than significant.

6.5.4.2 Bird Electrocutions

Electrocutions only occur when a bird simultaneously contacts two conductors of different phases or a conductor and a grounded part of the structure. This happens most frequently when a bird attempts to perch on a structure with insufficient clearance between these elements. Most lines that electrocute raptors are energized at voltage levels between 1 kV and 69 kV. The project power lines are insulated for operation at 115 kV and the resulting phase separation (greater than 60 inches) effectively precludes bird electrocutions.

Although the non-energized metal structures in a switching station are grounded, birds and climbing animals can be electrocuted by contacting energized conductors from grounded equipment. Specialized surveys on bird- and animal-caused outages in the United States have focused on problems that wildlife cause to substations, which contain energized conductors from grounded equipment similar to that of a switching station. These surveys indicate that most problems in substations are caused by tree squirrels, raccoons, domestic cats, and birds, especially starlings, blackbirds, and pigeons. Raptors are rarely electrocuted at substations or switching stations, other than an occasional hawk or owl attempting to roost or feed on the equipment. In a qualitative survey of animal-caused outages at PG&E substations, squirrels, raccoons, and birds were identified as the primary pests. Electrocutions of wildlife as a result of the project will be very rare. The APMs in Section 6.6 will ensure impacts from bird electrocutions are less than significant.

6.5.4.3 Bird Collisions

Bird collisions with manmade structures have been reported in scientific literature for over a century. A number of bird collision studies have been done at power lines. These studies suggest that the primary factor in determining the number of birds colliding with a power line is the number of birds flying through the area.

It is generally expected that collision mortality is greatest where the movements of susceptible species are the greatest. The potential for raptors to utilize the project area and surrounding habitat listed in Table 6-2: Potential of Sensitive Wildlife Species to Occur within Study Area varies from low to high. The coastal scrub, open non-native grasslands, northern mixed chaparral, and coast live oak woodlands provide suitable breeding, nesting and foraging habitat

for bird species. The APMs described in Section 6.6 will ensure impacts from bird collisions are less than significant.

6.5.5 Critical Habitat

There is no designated critical habitat for any federally-listed species in the project area; therefore, no proposed or designated critical habitat will be directly modified or destroyed.

Critical habitat for the federally threatened south/central California coast ESU steelhead does occur in Gabilan Creek, and sedimentation runoff from the project area could indirectly affect the critical habitat. Implementation of the APMs described in Section 6.6 will ensure that impacts to critical habitat for the steelhead are less than significant.

6.5.6 Special-Status Plant Species

The first round of surveys for rare plants was conducted in March 2010 in the project area. One CNPS 1B.1 plant, Pajaro manzanita, was found in the northern portion of the project area. A second survey will be conducted in late spring or early summer in order to capture the blooming periods of all plants that have potential to occur in the area.

Impacts to special-status plants may result from construction of the switching station and other activities and could be potentially significant. Implementation of the APMs described in Section 6.6 will reduce any such impacts to less than significant levels.

6.5.6.1 Pajaro Manzanita

Work occurring in the work spaces in the northern section of the project area may affect Pajaro manazanita. The manzanita may need to be trimmed or possibly cut down. Specific measures outlined in Section 6.6 will reduce impacts to Pajaro manzanita to less than significant levels.

6.5.7 Special-Status Wildlife Species

A summary of impacts to known or potentially occurring special-status wildlife species as a result of project construction and operations is provided below. A detailed assessment of APMs for these impacts is provided in Section 6.6.

6.5.7.1 Fairy Shrimp

Although habitat exists in the seasonal wetland in the project area, there is low potential for the species to occur in the wetland as the nearest record is approximately 40 miles southeast of the project area. There will be no impacts to fairy shrimp.

6.5.7.2 Fish

No fish species are expected to be affected by construction activities as no construction activities will be occurring in Gabilan Creek, Lagunita Lake, or the unnamed pond; however, should sedimentation runoff flow into Gabilan Creek, fish could potentially be indirectly affected.

Implementation of APMs provided in Section 6.6 will ensure that impacts to fish species will be less than significant.

6.5.7.3 Special-Status Amphibians

Special-status amphibians could utilize Lagunita Lake (located approximately 0.25 mile southwest of the project area), an unnamed pond (located approximately 0.5 mile northeast of the project area), and Gabilan Creek (located less than 0.25 miles south of the project area) for breeding habitat, and therefore, the special-status amphibians could utilize the project area for dispersal and aestivation habitat. Construction activities that affect dispersal and aestivation habitat for listed amphibians may disturb or remove habitat occupied by or potentially occupied by special-status amphibian species. Movement of construction equipment, construction of the proposed switching station, towers and access roads, grading and clearing activities, and use of other work areas will destroy the non-native grassland, coastal scrub, northern mixed chaparral and coast live oak woodland that the special-status amphibians may utilize for aestivation and dispersal. Additionally, special-status amphibians could become injured or killed as a result of the construction of the proposed facilities.

Aquatic habitat of the special-status amphibians may be indirectly affected should sedimentation from the project area flow into Gabilan Creek.

One juvenile CTS was found during the upland protocol surveys in the project area; therefore, it is presumed that CTS are utilizing the upland area for aestivation habitat.

PG&E's APMs included in Section 6.6 will compensate for any potential removal of or disturbance to aestivation and dispersal habitat for CTS so that any impacts will be less than significant.

6.5.7.4 Special-Status Reptiles

Special-status reptiles could utilize the non-native grassland, coastal scrub, northern mixed chaparral, and coast live oak woodland in the project area for nesting and aestivation. PG&E will implement APMs to minimize the potential for direct mortality of adults, juveniles and nests during construction activities in their habitat. The APMs in Section 6.6 will also reduce mortality of the southwestern pond turtle as it migrates back to suitable aquatic habitats adjacent to the proposed project area, including the unnamed pond, Lagunita Lake and Gabilan Creek. PG&E will also install Best Management Practices (BMPs) to reduce potential indirect impacts to the turtle from sediment-laden runoff into Lagunita Lake or Gabilan Creek. The protection measures that will be instituted to minimize impacts to potentially nesting and migrating adult reptiles, juveniles and nests, as well as measures to protect aquatic habitat, will result in less than significant impacts to the special-status reptiles.

6.5.7.5 Raptors and Special-Status Birds

Noise and activity, including the use of a helicopter, associated with project construction during the non-nesting season could disturb raptors and other sensitive birds, and cause them to

temporarily avoid the construction area. Given the availability of considerable suitable foraging and nesting habitat surrounding the project, this would be a less than significant impact. PG&E will implement APMs to prevent construction activities from disturbing sensitive raptor and other bird species during the breeding season so that potential impacts will be less than significant. The permanent loss of foraging habitat is expected to be a less than significant impact because of the available habitat adjacent to the project area.

A Phase 2 burrow survey was conducted in the project area in the winter of 2010 to determine whether or not burrowing owls currently occupy the area. The absence of suitable burrows in the project area makes the area unlikely that burrowing owls will utilize it for nesting or wintering.

Protection measures to reduce potentially significant impacts to raptors and other sensitive birds to less than significant levels are included in Section 6.6 Applicant Proposed Measures.

6.5.7.6 Bats

There is suitable habitat for bats in the oaks in the project area. PG&E's APMs will minimize the potential for destruction of individual special-status bats, and will reduce the potential for construction noise to cause bats to abandon their roosts and result in reproductive failure.

6.5.7.7 American Badger

Suitable foraging and burrowing habitat exists in the proposed project area for the American badger. The permanent loss of upland habitat may occur as a result of construction of the proposed switching station, towers and access road, grading and clearing activities, and use of laydown areas. Implementation of the measures in Section 6.6 Applicant Proposed Measures will ensure no direct mortality occurs and that impacts are less than significant.

6.5.8 Local Policies and Ordinances

Although PG&E is not subject to local land-use regulations, PG&E's proposed APMs will ensure that the project will not conflict with any local policies or ordinances protecting biological resources.

6.5.9 Noxious Weeds

The proposed switching station site will be a graveled site with a surrounding landscaped buffer. The project area will be surveyed for noxious weeds during the special-status plant species surveys in the spring and summer of 2010. If any noxious weeds are found, APMs in Section 6.6 will be implemented to stop the spread of the weeds into other areas. Implementation of these measures will ensure less than significant impacts to natural communities from the spread of noxious weeds.

6.5.10 Habitat Conservation Plan/Natural Community Conservation Plan/Other Governmental Habitat Conservation Plan

There are no Habitat Conservation Plans, Natural Community Conservation Plans or other governmental habitat conservation plans discussed in the Monterey County General Plan that involve the project area.

6.6 APPLICANT PROPOSED MEASURES

6.6.1 General Avoidance of Biological Resources Impacts

The following APMs will be incorporated into the project to avoid or minimize anticipated impacts to biological resources from project development, and reduce all potential impacts to less than significant:

- *Litter and trash management*. All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers. Trash containers will be removed from the project area at the end of each working day.

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

- *Route and speed limitations*. Vehicles will be confined to established roadways and pre-approved access roads, overland routes and access areas. Access routes and temporary work areas will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of work areas, including access roads, will be clearly mapped prior to initiating project construction. Vehicular speeds will be kept to 15 miles per hour (mph) on unpaved roads.

- *Maintenance and refueling*. All equipment will be maintained such that there will be no leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down gradient aquatic habitat unless otherwise isolated from habitat. Proper spill prevention and cleanup equipment shall be maintained in all refueling areas.

- *Pets and firearms*. No pets or firearms will be permitted at the project site.

6.6.1.1 Avoidance of Impacts to Natural Habitats

Clearing and grading will be limited to work areas only. Temporarily disturbed vegetation is expected to recover without the need for reseeding.

Although PG&E is not subject to local land-use regulations, PG&E has developed the following APMs to ensure that the project does not conflict with the County of Monterey tree protection requirements: PG&E will consult with Monterey County regarding BMPs if more than three protected trees will be removed by the project. PG&E will replace removed trees at a one-to-one ratio and; in areas that will be restored following construction of the facility, PG&E will minimize clearing of oaks to only what is required to maintain a safe facility. In these areas, PG&E will endeavor to retain a representative sample of sizes, ages and species of oaks with special emphasis placed on retaining samplings.

6.6.1.2 Development and implementation of a Worker Environmental Awareness Program

An environmental awareness program for all construction and on-site personnel will be conducted by a qualified biologist prior to the beginning of construction activities. Training will include a discussion of APMs being implemented to protect biological resources as well as the terms and conditions of all permits. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed about the presence, life history, and habitat requirements of all special-status species with a potential to be affected within the project area. Training will include information on state and federal laws protecting nesting birds, wetlands, and other water resources.

An educational brochure will be produced for construction crews working on the project. The brochure will include color photos of sensitive species as well as a discussion of mitigation measures.

6.6.1.3 Biological Monitor On-site During Construction Activities in Sensitive Areas and Reporting and Communication

A qualified biological monitor will be on site during all ground-disturbing construction activities in or near sensitive habitats previously identified. The monitor will ensure implementation of and compliance with all APMs. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel as appropriate if construction activities are likely to impact sensitive biological resources.

The biological monitor will complete daily logs to document construction activities and environmental compliance. The daily logs will be included in the project report submitted to the appropriate agencies following completion of construction.

The biological monitor will be responsible for reporting any capture and relocation, harm, entrapment, or death of a listed species to the USFWS and/or the CDFG and for reporting any permit violations in a timely manner and as indicated in their respective permits.

6.6.1.4 Identification and Marking of Sensitive Resource Areas

Sensitive resources identified during pre-construction surveys in the project vicinity will be mapped and clearly marked in the field. Such areas will be avoided during construction to the extent practicable and/or additional measures specific to sensitive species types as described herein and that may be required by the USACE, USFWS, CDFG, and RWQCB permits, will be implemented to avoid or minimize impacts.

6.6.1.5 Avoidance of and Minimization of Potential Impacts to Seasonal Wetlands, Intermittent Drainages, and Other Water Resources

PG&E will design the project to avoid the intermittent drainages and seasonal wetlands to the extent practicable. However, where impacts to the drainages and wetlands cannot be avoided PG&E will provide compensation as required by the USACE, USFWS, CDFG, and RWQCB.

Timing and extent of work in aquatic or wetland habitat. Work in aquatic or wetland habitat is limited to the installation of the permanent access road in the wetland located adjacent to San Juan Grade Road. All ground-disturbing work at this location will take place in dry conditions.

Storm Water Permit. PG&E will obtain coverage under the Construction Storm Water Permit Program and implement BMPs for erosion and sediment control.

Stormwater Pollution Prevention Plan and erosion control measures. As described in Section 10.6.2, a Stormwater Pollution Prevention Plan (SWPPP) will be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary for the project. Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, as well as aquatic habitat occupied by sensitive species. Erosion control measures will be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued in the project area until such time that soil stabilization is deemed adequate. Brush or other similar debris material will not be placed within any stream channel or on its banks. No project work activity is planned within the limits of any stream channel.

6.6.1.6 Hazardous Substance Control and Emergency Response Plan

PG&E has and will implement its system-wide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the project SWPPP.

6.6.1.7 Project-specific Fire Prevention and Response Plan Development and Implementation

PG&E will prepare a Fire Prevention and Response Plan that will include reducing the potential for igniting combustible materials. The procedures will cover electrical hazards, flammable materials, smoking, vehicle and equipment access, and fire watches during construction and maintenance procedures during subsequent operation. Project personnel will be directed to park

away from dry vegetation; not to smoke; and to equip vehicles with appropriate firefighting equipment; such as water dispensers and shovels, in times of high fire hazard.

6.6.2 Special-Status Plant Species

6.6.2.1 Preconstruction Survey

A preconstruction survey will be conducted by a qualified botanist or biologist prior to commencement of construction in each area. All rare plant populations will be appropriately marked or flagged for exclusion, or as appropriate, the limits of construction will be marked between the population and the work area. Surveys and marking or flagging must be completed no more than 30 days prior to construction. In the event that any previously unidentified listed plants or CNPS List 1-3 plants cannot be avoided, PG&E will consult with the USFWS and/or the CDFG to determine appropriate measures to minimize effects to the species and its habitat during construction of the project, as well as during operation and maintenance. The California Public Utility Commission (CPUC) will be informed of the results of any agency consultations.

6.6.2.2 Pajaro Manzanita

To minimize impacts to Pajaro manzanita, which is already known to occur in the project area, PG&E will implement the following measures:

- Vegetation clearing in occupied Pajaro manzanita habitat should be conducted after Pajaro manzanita has set seed and before flowering begins (typically between May and November).

- If mechanical brushing is conducted in occupied Pajaro manzanita habitat, mastication should not come within 6 inches of the ground surface to avoid disturbing the seed bank.

- Where feasible, removal of entire Pajaro manzanita plants from the ground should be avoided and stumps and roots should be retained.

6.6.3 Special-Status Wildlife Species

The following measures will be implemented as part of the project design to minimize disturbance to areas potentially occupied by special-status species.

6.6.3.1 Fish

Mobile equipment will not be parked overnight within 100 feet of aquatic habitat. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of aquatic habitat will be positioned over secondary containment.

Best Management Practices such as silt fencing, hay bales, or fiber rolls, will be placed near the intermittent drainages and seasonal wetlands to prevent sedimentation runoff from flowing into Gabilan Creek.

6.6.3.2 Special-status Amphibians and Reptiles

Pre-construction surveys and relocation of species. Pre-construction surveys for special-status amphibians and reptiles will be conducted no more than two weeks prior to the commencement of construction. Surveys will include work areas within 600 feet of suitable CTS breeding habitat and work areas within 300 feet of suitable CRLF aquatic habitat. Surveys will be conducted by a qualified, agency-approved biologist. The biologist will relocate any special-status species to a location previously agreed upon by the USFWS and the CDFG. Before the start of work each morning, the biologist will check under any equipment and stored construction supplies left in the work area overnight within 600 feet of suitable habitat. All holes and trenches in habitat areas will be backfilled or covered at the end of the work day to prevent entrapment of special-status species.

Seasonal timing restrictions. All ground-disturbing construction activities within 600 feet of suitable aquatic habitat for CRLF and CTS will be limited to May 1 through October 31, to the greatest extent feasible. For work in these areas, a qualified biologist will conduct a pre-construction survey of the work area immediately preceding construction activities. All potential habitat areas including burrows, woody debris piles, and wetlands within the project area will be thoroughly checked. Any special-status species found will be captured and relocated to a USFWS- and CDFG-approved location type (e.g., a small mammal burrow) and area, prior to the start of construction.

Exclusion Fencing. Prior to the commencement of construction activities, flagging, signage, and/or high visibility fencing will be erected around the CTS and CRLF aquatic habitat to identify and protect it from the encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing will be inspected before the start of each workday and maintained until completion of the activity. Once the project site is prepared and work is only occurring in the switching station will the fencing be removed. Only tightly woven netting or similar material will be used for all geo-synthetic erosion control materials such as coir rolls and geo-textiles. No plastic monofilament matting will be used for erosion control measures.

Dawn and dusk timing restrictions. Construction activities within 600 feet of suitable aquatic habitat shall not begin prior to 30 minutes after sunrise and will cease no later than 30 minutes before sunset.

Minimize burrow disturbance. Plywood sheets will be used to temporarily cover potentially active burrows in work areas within 600 feet of suitable aquatic habitat. Burrows will be covered after re-location has taken place, if necessary, or otherwise specified in the Biological Opinion or Incidental Take Permit.

California tiger salamander. PG&E is currently in consultation with the USFWS and CDFG regarding compensation and conservation measures for any potential take of the species and its associated habitat.

6.6.3.3 Raptors and Birds

Pre-construction bird nesting surveys in the project area will be conducted before work is performed between February 1 and August 15. To the extent possible, working in the vicinity of active nests will be avoided; however, if avoidance is not practicable, a buffer zone, as determined by a qualified biologist, will be maintained around the active nest to prevent nest abandonment. In the event that work will take place within 50 feet (300 feet for raptors) of an active nest, a biological monitor will monitor the activity of the nesting birds during work to determine if construction activities are resulting in significant disturbance to the birds. If the qualified biologist determines that work is disrupting nesting, then work in that area will be halted until nesting is completed and the young have fledged. Monitoring guidelines will be provided in an Avian Protection Plan to be submitted to the USFWS and CDFG for review and approval prior to construction. Documentation of Plan approval will be submitted to the CPUC for recordkeeping. Installation of the new distribution line and the reconfigured power lines will conform to PG&E's most current version of Bird and Wildlife Protection Standards, and may include the use of bird guards. Nest disturbance is dependent on a number of site-specific and activity-specific factors, including the sensitivity of the species, proximity to work activity, amount of noise or frequency of the work activity, and intervening topography, vegetation, or structures; and the buffer could be increased or reduced dependent on the site-specific conditions. PG&E will avoid helicopter flights near known active nesting bird sites as determined in consultation with the USFWS and/or CDFG.

6.6.3.4 Burrowing Owl

Burrow surveys were conducted in January 2010 for the burrowing owl. No sign of burrowing owls or suitable burrows were detected.

Although the probability of burrowing owls utilizing the project area is low, the following measures will be taken should owls decide to move into the project area:

- The recommended preconstruction surveys will also serve to identify any burrowing owl and owl signs (e.g., white wash at burrow entrances). If ground-disturbing activities in suitable habitat are delayed or suspended for more than 30 days after the pre-construction surveys, the site will be resurveyed. If no burrowing owls are detected, no further mitigation is necessary.

- If active burrows are found near a work area, work in the vicinity of the burrows will be limited as follows:

    - No disturbance will occur within approximately 160 feet (50 meters) of occupied burrows during the non-breeding season of September 1 through January 31, or within approximately 250 feet (75 meters) during the breeding season of February 1 through August 31.

- The limits of the exclusion zone in the project work area will be clearly marked with signs, flagging and/or fencing.

- If work within these limits is unavoidable while burrows are active, work will only take place within the presence of a qualified monitor who would monitor to determine if the owls show signs of disturbance or, upon prior approval from CDFG a passive relocation effort (displacing the owls from the work area) may be conducted as described below, and subject to the approval of the CDFG.

- Passive relocation of owls may occur during the non-breeding season (September 1 through January 31) with prior approval from CDFG. Passive relocation would include installing one-way doors on the entrances of burrows. The one-way doors would be left in place for 48 hours to ensure the owls have vacated the nest site. Owls would not be relocated during the breeding season.

6.6.3.5 Bats

Before the spring breeding season (and prior to start of construction), a qualified biologist will perform a survey for roosting bats or maternity colonies at the proposed project site. Surveys will evaluate the probability for trees to host roosting bats. For trees considered to have a high probability for bats, acoustic monitoring will be performed in early summer to detect if there are any roosting sites.

If avoidance of an active roosting bat or maternity colony is not practicable, a sufficient buffer will be established in consultation with the CDFG. If acoustic monitoring detects that bats are using trees that need to be cut down, exclusionary one-way doors will be installed in late August, after completion of the maternity season. Roost trees will be removed after it has been confirmed that roosting bats have departed. If a roost is lost, PG&E will consult with the CDFG to see if the agency recommends bat boxes to be installed in the vicinity of the cut tree.

In the event that a roosting bat or maternity colony occurs within or near the project area, a qualified biological monitor will be provided and will remain on-site during construction activities to ensure there is no nest abandonment.

6.6.3.6 American Badger

Protective measures that will be implemented include:

- A qualified biologist will survey the project area for badger dens.

- If a badger den is found, PG&E will consult with CDFG to confirm if it is acceptable to live-trap the badger(s) and relocate to a suitable site.

- If badger dens are found in the project area but will not be affected directly by construction activities, PG&E will contact the CDFG and an exclusion area will be established around the dens.

6.6.3.7 Bird Electrocutions

Bird electrocutions on the power lines are not anticipated due to sufficient conductor separation. Since switching station outages threaten reliability, PG&E's customary practice is to correct any problem at a switching station with solutions to wildlife-caused outages that are specific to the equipment and species involved. PG&E evaluates bird electrocutions according to the company's Avian Protection Plan, which was developed in consultation with the USFWS, and has been in place since 2007. If a bird electrocution does occur at the project site, PG&E will implement the following corrective actions as outlined in their Avian Protection Plan Implementation document:

- If a raptor or a threatened or endangered bird is electrocuted on distribution (pole or mid-span), transmission, or substation facilities, the first line supervisor or designee (incident investigator) shall visit the incident site as soon as possible following the incident. The incident investigator shall be qualified, because of knowledge, training, and work experience, to evaluate and assess bird-related incidents, poles, or other structures.

- The incident investigator will recommend retrofits with avian-safe devices if the incident involved a raptor and schedule any retrofit work to be completed as soon as practical, based on material availability, facility accessibility, clearances, etc.

- If avian program management personnel determine that certain poles or structures present a particularly high risk to raptors, they may require that work to make the poles or structures avian-safe be completed within 30 days or less. The criteria for making this determination may include, but is not limited to the following circumstances:

    - Electrocuted eagle, threatened, or endangered species
    - Multiple raptor electrocutions at the same location
    - Multiple electrocutions in close proximity and within a recent time frame
    - Agency requests

6.6.3.8 Noxious Weeds

All project vehicles will be washed before arrival on site at a PG&E wash facility or otherwise approved wash-down location. Vehicles will also be cleaned at the completion of the project or when off-road use for that vehicle has been completed.

6.7 REFERENCES

Alsop, F.J. 2001. *Birds of North America, Western Region.* DK Publishing. New York.

Arnold, R.A. 1981. *Distribution, life history, and status of three California lepidoptera proposed as endangered or threatened species.* Final report for contract #S-1620. California Department of Fish & Game, Inland Fisheries Branch. Sacramento, CA.

Avery, M.L.; P.F. Springer; and N.S. Dailey. 1980. *Avian Mortality at Man-made Structures: an Annotated Bibliography (revised).* FWS/OBS-80-54. U.S. Fish and Wildlife Service, Biological Services Program, National Power Plant Team. Ann Arbor, MI.

Avian Power Line Interaction Committee. 1996. *Suggested Practices for Raptor Protection on Power Lines: the State-of-the-Art in 1996.* Edison Electric Institute, Raptor Research Foundation. Washington, D.C.

Bat Conservation International (BCI) 2003. Online: http://batconservationinternational.org.

Biosearch Associates. 2009. *Aquatic Sampling Report for Special-Status Amphibians at the Crazy Horse Switch Yard Project Site, Monterey County, CA.* Santa Cruz, CA.

Boland, M.; R.D. Williams. 1994. *Animal Damage Control at Transformer Substations: Problem Analysis 1993.* TES Report No. 009.4-94.7. Pacific Gas and Electric Company, Technical and Ecological Services. San Ramon, CA.

Bolster, B.C., 1998. *Draft Terrestrial Mammal Species of Special Concern in California, ed.* Available from http://www.dfg.ca.gov/wildlife/nongame/ssc/1998mssc.html. Site visited on November 13, 2009.

California Burrowing Owl Consortium. 1993. *Burrowing owl survey protocol and mitigation guidelines*. Santa Cruz, CA.

Calflora: Information on California plants for education, research and conservation. [web application]. 2008. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/. Accessed on July 14, 2008.

CDFG (California Department of Fish and Game). 1985. *California's Wildlife. Volume I: Amphibians and Reptiles*. California Statewide Wildlife Habitat Relationships System.

_____. 1990a. *California's Wildlife. Volume II: Birds*. California Statewide Wildlife Habitat Relationships System.

_____. 1990b. *California's Wildlife. Volume III: Mammals*. California Statewide Wildlife Habitat Relationships System.

_____. 1995. *Staff report on burrowing owl mitigation*. Sacramento, CA.

_____. 1999. *Revised survey protocol for California tiger salamander*. Informational Leaflet No. 44. First published September 1997. Inland Fisheries Division. Rancho Cordova, CA.

_____. 2001–2004. *California Natural Diversity Data Base*. Natural Heritage Division. Sacramento, CA.

_____. 2002. *Fish and Game Code*. California Department of Fish and Game Resources Agency. San Clemente, CA.

_____. 2004. Natural Diversity Data Base Program "Rarefind" 4. *California Natural Diversity Database*. The Resources Agency. Sacramento, CA.

_____. 2009. *California Natural Diversity Database*. RAREFIND 3 Software.CNPS (California Native Plant Society). 2004. *Inventory of Rare and Endangered Vascular Plants of California*. Version 6.3 (01-16-04). Sacramento, CA.

CNPS (California Native Plant Society). 2009. Inventory of Rare and Endangered Plants (online edition, v7-09b). California Native Plant Society. Sacramento, CA. Online: http://www.cnps.org/inventory. Site visited on November 3, 2009.

Cotton/Bridges/Associates. Urban and Environmental Planning Consultants. 2002. City of Salinas General Plan.

De Becker, Sally. 2009. *California Wildlife Habitat Relationships System*; *Coastal Scrub*. California Department of Fish and Game California Interagency Wildlife Task Group. Available from: http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/CSC.pdf. Site visited on November 16, 2009.

DOI (Department of Interior). 2004a. U.S. Fish and Wildlife Service. Federal Register 50 CFR Part 17 (Volume 69, Number 24850). Endangered and Threatened Wildlife and Plants; Proposed Critical Habitat Designation for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon, Proposed Rules. December 28, 2004.

_____. 2004b. National Oceanic and Atmospheric Administration. Federal Register CFR Parts 223 and 224 (Volume 69, Number 113). Endangered and Threatened Species: Proposed Listing Determinations for 27 ESUs of West Coast Salmonids, Proposed Rules. June 14, 2004.

Faanes, C.A. 1987. *Bird Behavior and Mortality in Relation to Power Lines in Prairie Habitats*. Fish and Wildlife Service Technical Report 7. Sacramento, CA.

Hartman, P.A., S. Byrne; and M. Dedon. 1993. *Bird Mortality in Relation to the Mare Island 115 kV Transmission Line: Final Report: 1988-1991*. TES Report No. 443-91.3. Pacific Gas and Electric Company, Technical and Ecological Services. San Ramon, CA.

Hayes, M. P. and M. R. Tennant. 1985. Diet and feeding behavior of the California red-legged frog, *Rana aurora draytonii* (Ranidae). *The Southwestern Naturalist* 30(4):601–605.

Hayes, Grey F. and Dean W. Taylor. 2007. ESCTP: Pinus radiata Fact Sheet. Available from: http://www.elkhornsloughctp.org/factsheet/factsheet.php?SPECIES_ID=35. Site visited on November 13, 2009.

Herbert, E. and E. Reese. 1995. *Avian Collision and Electrocution: An Annotated Bibliography*. California Energy Commission Report P700-95-001. Sacramento, CA.

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

Holland, R.H. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, Non-game Heritage Division. Sacramento, CA.

Jameson, E.W. Jr. and Peeters, H.J. 1988. *California Mammals*. University of Berkeley Press. Berkeley, CA.

Jennings, M. R. 1988. *Natural history of the decline of native ranids in California*. In: H. F. De Lisle, P. R. Brown, B. Kaufman, and B. McGurty (eds.). *Proceedings of the Conference on California Herpetology*. Special Publication 4:61–72. Southwestern Herpetologists Society. Van Nuys, CA.

Jennings, M. R.; M. P. Hayes; and D. C. Holland. 1992. *A Petition to the U. S. Fish and Wildlife Service to Place the California Red-Legged Frog (Rana aurora draytonii) and the Western Pond Turtle (Clemmys marmorata) on the List of Endangered and Threatened Wildlife and Plants.*

Jennings, M. R. and M. P. Hayes. 1994. *Amphibian and reptile species of special concern in California*. Final Report to the California Department of Fish and Game, Inland Fisheries Division. Rancho Cordova, CA.

Jones & Stokes Associates, Inc. 1990. *Draft Environmental Impact Report: Vasco Road and Utility Relocation Project*. Sacramento, CA.

Michael Brandman Associates. 2006. *Monterey County 2006 General Plan – Draft Program Environmental Impact Report*. San Ramon, CA.

Monterey County. *Monterey County Environmental Impact Report*. Online: http://www.co.monterey.ca.us/gpu/reports/Draft%20General%20Plan.htm. 2004.

_____. *General Plan and General Plan Update*. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited November 17, 2008

_____. *Greater Salinas Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/GSAP.complete. Site visited November 11, 2009.

_____. *North County Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/landuse.htm. Site visited November 24, 2008.

Natural Resources Conservation Service. 2009. Web Soil Survey for Monterey County. Online: http://websoilsurvey.nrcs.usda.gov. Site accessed November 10, 2009.

Nelson, J. R. 2001. *Guidelines for assessing effects of proposed developments on rare plants and plant communities.* In: *California Native Plant Society, Inventory of Rare and Endangered Vascular Plants of California* (sixth ed.). California Native Plant Society. Sacramento, CA.

Nobel, T.; M. Fraser; and B. Ruckman. 1996. *Substation outages caused by wildlife: A survey.* EEI Biologists Task Force Workshop, Jupiter Beach, Florida. April 24–26.

Pearson, D.C. 1993. *Avifauna collision study in the San Jacinto Valley of Southern California. Electric Power Research Institute Proceedings: Avian Interactions with Utility Structures*. Palo Alto, CA.

Reed, P.B., Jr. 1988. *National List of Plant Species That Occur in Wetlands: California (Region O)*; U.S. Fish & Wildlife Service.

Shuford, W. David and Thomas Gardali, editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Sibley, D.A. 2000. *National Audubon Society, the Sibley Guide to Birds.* Chanticleer Press. New York.

Stebbins, R. C. 1972. *California amphibians and reptiles*. University of California Press. Berkeley, CA.

_____. 1985. *A Field Guide to Western Reptiles and Amphibians* (second ed.). Houghton Mifflin Company. Boston, MA.

_____. 2003. *A field guide to western reptiles and amphibians, 3rd ed.* Boston, MA: Houghton Mifflin Co.

Storer, T. I. 1925. A synopsis of the amphibian of California. *Publications in Zoology*, 27:1–342.

TRC. 2010a. *Delineation of Waters of the U.S. for Pacific Gas and Electric's Crazy Horse Canyon Switching Station Project in Monterey County, California*. Half Moon Bay, CA.

_____. 2010b. *Crazy Horse Canyon Switching Station Project, California Burrowing Owl Report*. Half Moon Bay, CA.

_____. 2009. *Crazy Horse Canyon Switching Station General Biological Reconnaissance and Wetland Survey Report*. Half Moon Bay, CA.

Williams, Daniel F. 2008. Mammalian Species of Special Concern in California. Department of Biological Sciences California State University, Stanislaus Turlock, California. Accessed on July 22, 2008 from: http://www.dfg.ca.gov/wildlife/species/publications/mammal_ssc.html#table4

U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

_____. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. U.S. Environmental Protection Agency, 2007 (including 2008 revised guidance). *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States.*

U.S. House of Representatives. 1918. *Migratory Bird Treaty Act*. U.S.C. 703-712; CH. 128; July 13, 1918; 40 Stat. 755, as amended. *Office of the Law Revision Counsel. Washington, DC.*

USFWS (U.S. Fish and Wildlife Service). 1989. Endangered and threatened wildlife and plants; animal notice of review. *Federal Register* 54:554–579.

_____. 1991. Endangered and threatened wildlife and plants; animal candidate review for listing as endangered or threatened species. *Federal Register* 56:58804–58836.

_____. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants.* http://www.fws.gov/sacramento/es/documents/. Site visited November 7, 2008.

_____. 1997a. *Guidance on Site Assessment and Field Surveys for California Red-Legged Frogs*. Memo. Sacramento, CA.

_____. 1997b. *Guidelines On Site Assessment and Field Surveys for the California red-legged frog (Rana aurora draytonii).* Sacramento, CA.

_____. 1999. Endangered and threatened wildlife and plants; review of plant and animal taxa that are candidates or proposed for listing as endangered or threatened; annual notice of findings on recycled petitions: annual description of progress on listing actions; proposed rule. *Federal Register* 64:57534–57547.

_____. 2001a. Endangered and threatened wildlife and plants; review of plant and animal taxa that are candidates or proposed for listing as endangered or threatened; annual notice of findings on recycled petitions: annual description of progress on listing actions; proposed rule. *Federal Register* 66:54808–54832.

_____. 2001b. *Least Bell's Vireo Survey Guidelines.* Online: http://www.fws.gov/ventura. Site visited November 9, 2008.

_____. 2003a. Endangered and Threatened Wildlife and Plants. *Federal Register* 50CFR17.11 and 17.12. December 1999, updated through October 2003.

_____. 2003b. Endangered and Threatened Wildlife and Plants, Determination of Threatened Status for the California Red-Legged Frog. *Code of Federal Regulations.* 50CFR17. RIN 1018-AC 34. October 1.

_____. 2003c. Endangered and Threatened Wildlife and Plants; Final Rule to List the Santa Barbara County Distinct Population of the California Tiger Salamander as Endangered. *Code of Federal Regulations.* 50CFR17. RIN 1018-AF81. October 1.

_____. 2004. Endangered and threatened wildlife and plants; review of invertebrate wildlife for listing as endangered or threatened species. Final Rule for Listing California Tiger Salamander as Threatened. *Federal Register* 69:47211–47248. August 4.

_____. 2008. Letter to TRC; *List of Federally Listed Species in the Vicinity of the Intersection of San Juan Grade Road and Crazy Horse Road, County, California.* September 3, 2008.

_____. 2009. National Wetlands Inventory web site. U.S. Department of the Interior, Washington, D.C. http://www.fws.gov/wetlands.

USFWS (U.S. Fish and Wildlife Service) and CDFG (California Department of Fish and Game). 2003. Interim guidance of conducting site assessments and field surveys for determining

presence or a negative finding of the California tiger salamander. Sacramento, CA. Dated October.

U.S. Geological Survey. 1955 (Revised 1993). *San Juan Bautista, California* 7.5-minute series topographic quadrangle. U.S. Department of the Interior.

Van Dyke, Eric and Karen Holl. 2003. *Mapping the Distribution of Maritime Chaparral Species in the Monterey Bay Area*. Prepared for USFWS. Available from: http://www.elkhornsloughctp.org/uploads/1123621594Van%20dyke%20holl%20dist%20of%20mar%20chap.pdf. Site visited on November 12, 2009.

Verner, J. and A. S. Boss. 1980. *California Wildlife and Their Habitats: Western Sierra Nevada*. Technical Report PSW-37. Pacific Southwest Forest and Range Experiment Station, U. S. Forest Service. Berkeley, CA.

Watershed Institute. 2005. *Monterey County Water Resources Agency – Reclamation Ditch Watershed Assessment and Management Strategy*. Seaside, CA.

Wetland Training Institute. 1995. *Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual*. WTI 95-3. Poolesville, MD.

Zeiner, et al. 1990. *California's Wildlife, Volume II, Birds*. California Statewide Wildlife Habitat Relationships System, Department of Fish and Game. Sacramento, CA.

_____. 1990a. *California's Wildlife, Volume III. Mammals*. California Statewide Wildlife Habitat Relationships System, Department of Fish and Game. Sacramento, CA.

7.0 CULTURAL RESOURCES

7.1 INTRODUCTION

This chapter describes the existing cultural resources within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent cultural resource-related impacts associated with project construction and operation. The potential impacts to cultural resources will be less than significant. Resource protection measures described in Section 7.6 Applicant Proposed Measures will further reduce already less-than-significant impacts. There are no anticipated cultural resource-related impacts associated with the operation and maintenance of the Crazy Horse Canyon Switching Station.

A discussion of paleontological impacts can be found in Chapter 8, Geology, Soils, Mineral Resources, and Paleontology.

7.2 METHODOLOGY

Background and archival research at the Northwest Information Center (NWIC) of the California Historic Resource Inventory System (CHRIS) was completed, and the Native American Heritage Commission (NAHC) and interested Native American individuals were contacted. In addition, a cultural resources field survey of the project area was completed.

7.2.1 Records Search and Historical Research

A cultural resources specialist conducted a records search at the NWIC on September 26, 2008. The NWIC is a repository of all archaeological site records, previously conducted cultural resources investigations, and historic information concerning cultural resources for 16 San Francisco Bay Area counties, including Monterey County. The purpose of this records search was to compile information pertaining to cultural resource sensitivity within a 0.5-mile radius of the project area, including the locations of previously recorded cultural resource within the project area.

The following sources were consulted in the records search:

- NWIC base maps, U.S. Geological Survey 7.5-minute series topographic quadrangles of San Juan Bautista and Prunedale, California;
- survey reports and archaeological site records on file that describe previously recorded cultural resources within a 0.5-mile radius of the project area; and
- the California Department of Parks and Recreation's California Inventory of Historic Resources (CA-OHP1976a) and the California Office of Historic Preservation's Historic Properties Directory (CA-OHP 2007), which combines cultural resources listed on the California Historical Landmarks (CA-OHP 1996), California Points of Historic Interest (CA-OHP1976b) and those that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

In addition, an architectural historian contacted the Monterey County Historical Society in Salinas, California in October 2008 with a request for a search of its files and records regarding cultural resources within the project area, and a list of individuals who might have interest or information concerning the area's prehistory and history. As of this PEA submittal, there has been no response from the Monterey County Historical Society.

7.2.2 Native American Consultation

As part of the consultation process with Native American organizations and individuals, the NAHC was contacted in September 2008 with a request for information about sacred lands that may be located within the project area and a list of interested Native American groups and individuals near the project area. A search of the Sacred Lands file housed at the NAHC did not result in the identification of any sacred lands within the project area. In October 2008, the NAHC provided a list of local groups and individuals to contact for further information regarding local knowledge of sacred lands. Letters and associated maps were sent October 6, 2008 to the individuals from these local groups. Included in the correspondence were the project description and a project map, with a request that they notify the project consultant if they could provide any information about the project area or if they had concerns about the project. Copies of the letters sent are contained in Attachment D: Native American Consultation. As of this PEA submittal, there has been no response from the groups or individuals contacted.

7.2.3 Archaeological Survey

A cultural resources pedestrian survey of the project area was initially carried out on October 7 and 16, 2008 and additional proposed work areas were surveyed on March 20, 2009 and March 3, 2010. Survey methods for both surveys were based on the topography and ground visibility throughout the project area, and the survey was generally done using parallel transects spaced 10 to 15 meters apart. Approximately 15 meters of the southern perimeter of PG&E tower number 37/230 was not surveyed due to the presence of dense poison oak growth.

7.3 REGULATORY BACKGROUND

The regulatory framework that mandates consideration of cultural resources in project planning includes federal, state, and local governments. Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of a specific project.

7.3.1 California Environment Quality Act

The California Environmental Quality Act, Public Resources Code (PRC) sections 21000 *et seq.* (CEQA) requires a review to determine if the project will have a significant effect on archaeological sites or properties of historic or cultural significance to a community or ethnic

group eligible for inclusion in the CRHR. The CRHR (PRC, Section 5024.1, (Code of California Regulations, Title 14, Section 4852) is a listing of those properties that are to be protected from substantial adverse change, and it includes properties that are listed in, or have been formally determined to be eligible for listing in, the NRHP, State Historical Landmarks, and eligible Points of Historical Interest. A resource is considered by the lead agency to be "historically significant" if the resource meets the following criteria for listing on the CRHR (Code of California Regulations, Title 14, §§15000, *et seq.* ("CEQA Guidelines"), Section 15064.5).

The resource:

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

7.3.2 Historical Resources

CEQA Section 21084.1 stipulates that any resource listed in, or eligible for listing in the CRHR is presumed to be historically or culturally significant. Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under PRC Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in or determined to be eligible for listing in the CRHR, not included in a local register or historic resources, or not deemed significant in a historical resource survey, may nonetheless be historically significant (CEQA, Section 21084.1). This provision is intended to give the CEQA Lead Agency discretion to determine that a resource of historic significance exists where none had been identified before and to apply the requirements of CEQA Section 21084.1 to properties that have not previously been formally recognized as historic.

CEQA provides that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment, and incorporates the definition of substantial adverse change from Public Resources Code Section 5020.1 as "demolition, destruction, relocation, or alteration that would impair historical significance," unless a proponderance of the evidence demonstrates otherwise. (CEQA Section 21084.1.)

7.3.3 Archaeological Resources

Where a project may adversely affect a unique archaeological resource, CEQA Section 21083.2 requires the CEQA Lead Agency to treat that effect as a potentially significant environmental

effect. When an archaeological resource is listed in or is eligible to be listed in the CRHR, CEQA Section 21084.1 requires that any substantial adverse effect to that resource be considered a potentially significant environmental effect. CEQA Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

7.3.4 Native American Human Remains

In accordance with Section 15064.5 (Determining the Significant of Impacts on Historical and Unique Archaeological Resources) of the CEQA Guidelines, when an initial study identifies the existence of, or the probable likelihood of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in PRC Section 5097.98 (notification of Native American human remains, descendants; disposition of human remains and associated funerary items). This code mandates that the CEQA Lead Agency adhere to the specific regulations when the identification or disturbance of Native American human remains occurs at a project site.

7.4 EXISTING CONDITIONS

7.4.1 Ethnographic Overview

Ethnographic data on population densities, settlement patterns, and subsistence strategies of the late prehistoric and early historic period Native Americans of the Central Coast can resemble the lifeways of people who occupied the same area a thousand or more years ago. Ethnographic information can provide a context for comparison between what is found in the archaeological record (Milliken 1988).

The Native Americans who inhabited the project area prior to the Spanish entry in 1769 are referred to as Costanoans, or Ohlone, as the Native American community refers to themselves. The term "Costanoan" derives from the Spanish word Costaños or "coast people" and refers to an ethnolinguistic group of people that lived in the area from San Francisco to Big Sur on central coast the eastward into the Central Valley before contact with European Americans. Ethnographic and ethnohistoric information about the Ohlone derives primarily from the accounts of early explorers and missionaries. When detailed ethnographic information began to be collected on their lifeways, the people and their culture had already undergone drastic changes due to European American, Spanish, and Mexican contact. The Costanoans spoke a language considered to be one of the eight major subdivisions of the Miwok-Costanoan, as categorized by linguistics, which belonged to the Utian family within the Penutian language stock (Shipley 1978). The Ohlone were politically organized by tribelets, each having a designated territory. A tribelet consisted of one or more villages and camps in a territory designated by physiographic features. Tribelets generally had 100 to 250 members (Kroeber 1925).

The acorn was among the most important food resources for Ohlone, who preferred tanbark oak, valley oak, and California black oak, abundant in the area. The acorns were ground into meal and leached to remove tannins. The large stands of oak tree acorns created a readily accessible staple.

These could be stored in granaries and used through the winter months. In addition to acorns, other important food resources were buckeye nuts, which were leached and made into a mush, and the seeds of dock, gray pine, and tarweed, all of which were roasted in baskets with hot coals before being eaten. The Ohlone gathered many berries and fruits including gooseberries, blackberries, madrone, and wild grapes along with root resources such as wild onion, cattail, and wild carrot (Levy 1978).

Midden deposits found throughout the Central Coast attest to the importance of shellfish in the Ohlone diet. Primary shellfish resources of importance included mussels, abalone, and various clam, oyster, and scallop species. Shellfish and marine mammals were important resources in the Ohlone diet in general, particularly for coastal populations, and important terrestrial mammals included deer, Tule elk, and pronghorn. Rabbits were hunted in communal rabbit drives and caught with snares. Migratory waterfowl, particularly geese, ducks, and coots, were the most important avian resources and were captured with nets; local quail were caught in traps. The Ohlone fished for salmon, sturgeon, and lampreys, and built Tule balsas to move about the water. Honey was gathered and grasshoppers were also eaten (Levy 1978).

The Ohlone traded with the people of the Plains Miwok, Sierra Miwok, and the Yokuts tribes. Mussels, abalone shells, dried abalone, and salt were exchanged for piñon nuts with the Yokuts. *Olivella* shells were traded with the Sierra Miwok and Bow wood with the Plains Miwok (Levy 1978).

It has been estimated that in 1770, when the first mission was established in Ohlone territory, the Native American population numbered around 10,000 (Kroeber 1925); Based on mission records, Milliken (1995) estimates that there were 2.5 people per square mile. As a result of the introduction of European diseases, the loss of their traditional lifeways, including their settlement and subsistence practices, reduced birth rates, and the poor working and living conditions that they were forced to endure, the Ohlone population dramatically and rapidly declined to fewer than 2,000 by 1832 (Milliken 1995; Goerke 2006). For native peoples who lived in tribelets, the loss of this many members would destabilize what little remained of their traditional social structure. By the time of secularization in 1834, there were no traditionally functioning Ohlone tribal groups left.

Since the 1980s, the modern Ohlone community has undergone a period of revitalization based on familial ties and former rancheria affiliations (Albion Environmental 2001). Although they have yet to receive formal recognition from the federal government, the Ohlone are becoming increasingly organized as a political unit and have developed an active interest in preserving their ancestral heritage. Descendants of the Ohlone still live in the area, and many are active in maintaining their traditions and advocating for Native American issues.

7.4.2 Archaeological Overview

The archaeological record of the Central Coast region indicates the intense human occupation that took place well before the Spanish and European explorers arrived in the eighteenth century. By the 1970s, researchers began to record numerous prehistoric sites throughout the Central

Coast area, most of which were identified as a result of subsurface investigations due to development (Jones et al. 2007). Recent archaeological findings have led to an understanding of the Central Coast cultures as contemporaneous with those in and around the Central California region (Breschini and Haversat 1980). The discussion regarding the regional prehistory specific to the Central Coast is presented below.

7.4.3 Central Coast Chronology and Prehistory

Jones et al.'s (2007) recent cultural chronology for the Central Coast region incorporates geographic areas (districts), temporal units (periods), and phases (diagnostic artifact assemblages). According to the Jones et al. (2007) model, the Central Coast region is temporally segmented into six general time periods that span 10,000 years of occupation. This section is based on Jones et al. (2007), unless otherwise noted.

7.4.3.1 Paleo-Indian Period (before 8000 B.C.)

According to this chronological scheme, prehistoric Paleo-Indian Period occupations, though poorly represented, are marked by an abundance of small, leaf-shaped and lanceolate projectile points, casual flake tools, ochre, and hammerstones. Although occupation dates extending back as far as 13,000 years ago have been identified in charcoal deposits from the Scotts Valley Site (CA-SCR-177) in Santa Cruz, it is likely these radiocarbon test dates are inaccurate due to unreliable samples, such as unstratified deposits and nonfeature-related sources.

7.4.3.2 Millingstone Period (8000 – 3500 B.C.)

The Millingstone Period is defined by an assemblage of eccentric crescents, bipointed leaf-shaped bifaces, unifaces, cobble/core tools, heavy use of basalt and quartzite, ochre, milling equipment, and fire-affected rock. There are few recorded sites from this period of prehistory within the Central Coast, and like the Scotts Valley Site, provide only questionable charcoal dates. However, the Metcalf Site (CA-SCL-178) in the southern Santa Clara Valley suggests the presence of cultural materials as early as 7,500 cal BC from feature deposits and an *Olivella biplicata* spire-lopped bead. Radiocarbon dating of four fragments of California mussel shell from site CA-SCR-38 in the Santa Cruz region also indicates prehistoric occupation during this period (Bryne 2002). Overall, the majority of Millingstone Period sites have been documented in close proximity to the coastline, however almost all interior sites from this period also contain marine shell, suggesting a strong coastal connection to inland sites.

7.4.3.3 Early Period (3500 – 600 B.C.)

Indicators in the archaeological record of Early Period occupation on the Central Coast include Rossi Square-stemmed, contracting stemmed, and side-notched points; *Olivella* type Class B (end-ground), Class C (split), and Class L (thick rectangular) beads; *Haliotis* square beads; handstones; millingslabs; mortars; and pestles. The artifact assemblages and adaptations for this period contrast greatly with the Millingstone Period, as this period is heavily associated with "Hunting Culture," or the evidence of large assemblages of projectile points and bifaces. Site

CA-MNT-391 in particular, has produced significant evidence of Early Period tools, mortuary and faunal assemblages.

7.4.3.4 Middle Period (600 B.C. – A.D. 1000)

The Middle Period, also associated with the "Hunting Culture," is marked by the continued presence of Early Period point forms (Rossi Square-stemmed, contracting stemmed and side-notched points with additional markers consisting of *Olivella* Type G2 and G6 saucer beads as well as mortars and pestles. There are 157 well-documented prehistoric sites within this period throughout the Central Coast region. The majority of these are located along or near the shoreline; however midden deposits and large sites also occur in pericoastal valleys, such as the project area.

7.4.3.5 Middle/Late Transition (A.D. 1000 – 1250)

Dates for the Middle/Late Transition Period are slightly different throughout the Central Coast. The most notable changes during this timeframe however, are observed in tool assemblages, which demonstrate an increase in the numbers of arrow points and a decrease in the frequency of stemmed points. Common traits observed throughout all assemblages for this time period were consistent with the "Hunting Culture," which include contracting-stemmed points, small leave-shaped points, notched line sinkers, circular fishhooks, and G2 *Olivella* saucer beads.

7.4.3.6 Late Period (A.D. 1250 – 1769)

The Late Period markers include Desert Side-notched projectile points; *Olivella* bead types B2, B5, K1, and M1; earspools; plummet-shaped charmstones; mortars; pestles; and handstones, and are easily differentiated from both Early and Middle period cultural materials. This period also represents a decline in bead manufacturing as seen in the few numbers of bead drills and Olivella bead manufacturing debris. Archaeologists have observed a dense distribution of interior occupations sites during this period.

7.4.4 Historic Overview

7.4.4.1 Spanish and Mexican Periods (1769 – 1846)

Spanish and Mexican exploration of the Monterey region began with the Portolá expedition in 1769. The Spanish established the nearby Monterey presidio and mission in 1770-1771, and that community became the capital of Spanish and Mexican California. The Spanish named the Salinas region for the salt marshes that extended eastward from the mouth of the Salinas River (Hart 1978). Four of California's missions were established in what became Monterey County: Carmel (1770), San Antonio (1771), Soledad (1791) and San Juan Bautista (1797) (Monterey County Historical Society 1989). Agricultural pursuits and livestock characterized land use during this period (Hart 1978). The Salinas area remained largely undeveloped until after Mexico seceded from Spain in 1822 after the Mexican War of Independence (1810–1821).

In 1822, California became a Mexican Territory and the mission lands became private ranchos as a result of the new Mexican land grant system. During the rancho period of Mexican rule in

California, the Salinas area included several large land grants. The Los Gatos or Santa Rita rancho to the north was held by Trinidad Espinosa, and the Rincon del Zanjon by Jose Eusebio Boronda. To the northeast was La Natividad owned by Manuel Butron and Nicholas Alviso. The Soberanes family's El Alisal was to the east and the Estrada's Llano de Buene Vista to the south. The town of Salinas was later formed out of two of these ranchos: the 6,700-acre Rancho Nacional and the 10,000-acre Rancho Sausal lands (Monterey County Historical Society 1989).

7.4.4.2 American Period Occupation and Early Salinas (1846 – 1900)

By 1846, the United States was looking toward the west, consistent with continental expansion fueled by the ideology of "Manifest Destiny" and later the discovery of California gold in 1848. Mexico struggled to maintain control over the vast lands of California and the western region it inherited from Spain following the 11-year war for independence (Mexican War of Independence 1810–1821). In 1848, California became an American territory when Mexico ceded California to the United States after the Californios (of Mexican Indian and Spanish descent) were defeated in the relatively short and brutal Mexican-American War (1846 to 1848) (Singletary 1960).

After California joined the United States in 1850, the rancho owners, Californios, continued work their land and raise cattle until the severe droughts in the 1860s depleted the cattle supply. This event forced the rancho owners to sell their land, which led to more diversified land ownership of smaller tracts. James Bryant Hill undertook large-scale grain farming on the former Rancho Nacional holdings during this period. While Hill's efforts failed, the enterprise helped establish the earliest Salinas area Anglo settlement. This community known as Hilltown grew at the juncture of the Salinas River and Monterey Road, today's Highway 68 (Monterey County Historical Society 1989).

The Salinas area grew in the 1860's and by 1867, local boosters had platted the Salinas City townsite. A series of important events occurred in 1872 when the Southern Pacific Railroad arrived and the newly incorporated Salinas City became the Monterey County seat. In 1874, the name was changed to the "City of Salinas" and the community incorporated (Monterey County Historical Society 1989).

Agriculture has been the mainstay of the Salinas Valley since the Mission period, and has evolved with changing needs and dietary preferences. Agriculturalists switched to grains and beans when the cattle industry collapsed in the 1860s, and sugar beets replaced these crops in the 1880s and 1890s. In 1899, Claus Spreckels completed construction of the world's largest sugar beet processing factory and the sugar beet reigned from the early 1900s to the 1920s (City of Salinas 2002). Growing sugar beets for the huge mill at Spreckels established large-scale irrigated agriculture. By 1900, Danish and Swiss dairies also became a major component of the valley's economy, employing newly developed condensing processes (Hart 1978).

The Salinas urban environment began to mature as the agricultural industry infused capital into the growing city. Serious reclamation efforts in the 1870s and 1880s using Chinese laborers greatly reduced the sloughs that characterized the area, and promoted the expansion of

agriculture and the city infrastructure. Circulation systems began to develop for wagons that would later service automobiles in the early twentieth century (Hart 1978).

7.4.4.3 Early Twentieth Century (1900 – 1930)

A number of events during the early twentieth century changed the Salinas built environment. Like many other cities that suffered impacts from the 1906 earthquake, the replacement masonry buildings employed steel frames as a protective measure against future temblors. In addition, the advent of automobile traffic and the development of new agricultural products were key events in this period. While the automobile appeared in Salinas by 1900, construction of the Highway 101 corridor did not occur until 1915. Though Main Street received a macadam (layers of stone with a cementing agent) surface in 1874, it reportedly only had four blocks of pavement by 1913. Despite the early hardships in Salinas, the automobile played a large role in altering the existing circulation routes and allowed Salinas's residents to reside further from the workplace.

During the 1920s, the industry in the Salinas area began to change from hides and tallows to agricultural products like lettuce, artichoke, and other new crops were introduced into the area. These new crops brought an increased demand for irrigation. In 1917, the construction of Reclamation Ditch 1665 affected the agricultural production in the area as it allowing marshland areas to be converted to farmland. The development of ice-bunkered railroad cars made it possible to ship fresh produce nationwide, and lettuce soon replaced the sugar beet as the Salinas Valley mainstay. The increasing demands for the new produce led to the practice of farming multiple crops on the same piece of land throughout the year (City of Salinas 2002).

Dust Bowl Depression Era troubles affected the Salinas Valley with an influx of thousands of Midwestern refugees who clustered together in migrant labor camps. Known as "Oakies," an estimated 3,500 migrants arrived in autos and settled in the 1,119-acre Alisal area of east Salinas from 1933 to 1940. As Dust Bowl migrants and others arrived in Salinas, the town underwent a residential housing expansion during the 1930's with the establishment of new suburbs to the southwest and east. Native John Steinbeck wrote about these issues in *In Dubious Battle* (1961[1936]) and in *Grapes of Wrath* ([1938]).

As World War II (1939-1945) approached, many changes occurred in the Salinas area. The United States military established a presence in Monterey County at the onset of the war. The first United Service Organization building was built in the county before the attack on Pearl Harbor. The headquarters for the Army Air Corp was located at the Monterey Airport. Fort Ord became one of the largest training bases in the country and the grounds were later used for rodeos and still later as an internment camp for Japanese Americans. Monterey County population continued to grow and in the Salinas area, agriculture became the mainstay (Breschini et al. 2000).

7.4.5 Cultural Resources in the Project Area

7.4.5.1 Records Search Results

The records search resulted in the identification of nine previously-conducted cultural resources studies and two previously-documented historic resources are located within a 0.5-mile radius of

the project area. Neither of these resources is located within areas to be disturbed by project construction.

First, California Historical Landmark No. 651, the site of the Battle of Natividad, is located 0.5-mile from the project area and is situated at the intersection of San Juan Grade Road and Crazy Horse Canyon Road. The Battle of Natividad took place on November 16, 1846, during the Mexican-American War (California State Parks).

In addition, San Juan Grade Road, located adjacent to portions of the project area, is part of the Juan Bautista de Anza National Historic Trail, a 1,210-mile historic route from Nogales, Arizona to San Francisco, California. The trail is an integral part of the story of the 1775 to 1776 Spanish Expedition whose members, consisting of some 30 families, traveled this overland route on their way to California. These families founded and established the Mission and Presidio of San Francisco, the Mission in Santa Clara and the Pueblo of San Jose (National Park Service). A newly-proposed access road and one existing access road are approximately 5 to 10 feet from San Juan Grade Road/National Historic Trail. The road is used by the local community and ranchers.

7.4.5.2 Archaeological Survey Results

Based on the background research and field survey conducted for this investigation, no previously or newly identified cultural resources are located within the project area.

7.4.6 Unknown Cultural Resources in the Project Area

While the results of this investigation demonstrate that there are no previously-recorded or newly-identified cultural resources present within the immediate project area, there is always the potential for the accidental discovery of subsurface archaeological resources during project construction. With the implementation of the avoidance and protection measures for accidental discoveries, the project will have a less than significant impact on cultural resources within the project area.

7.5 IMPACTS

7.5.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Impacts to cultural resources may be considered significant if they result in any of the following environmental effects:

- 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; and/or
- disturbs any human remains, including those interred outside of formal cemeteries.

No impacts to known cultural resources are anticipated during construction or operation.

7.5.2 Construction Impacts

7.5.2.1 Unknown Cultural Resources

Project construction will create subsurface disturbances that could result in the impact of previously undiscovered subsurface cultural resource deposits. While all of the areas of construction and access roads have been subject to the archaeological survey, there remains the potential for the discovery of previously unidentified archaeological remains below the visible ground surface. Disturbance of historic or prehistoric archaeological resources and/or human remains would be considered a significant impact. This potential impact will be reduced to less than significant with implementation of the applicant proposed measures listed below.

7.5.3 Operations Impacts

No impacts are anticipated from operation of the switching station because operation will not cause ground disturbance.

7.6 APPLICANT PROPOSED MEASURES

PG&E's Best Management Practices (BMPs) include measures to ensure that impacts to any cultural resources discovered during construction are less than significant. They include the following.

7.6.1 Worker Education Program

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

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

The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the project.

7.6.2 Halt Work if Unidentified Cultural Resources are Uncovered

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

7.6.3 Halt Work if Human Remains are Encountered

In the event human remains are encountered during the project, work within 50 feet of the find will be halted and the County Coroner will be notified immediately. Work will remain suspended until the Coroner can assess the remains. In the event the remains are determined to be prehistoric in origin, the Coroner will notify the Native American Heritage Commission, who will then designate a Most Likely Descendent. The Most Likely Descendent will consult with PG&E's archaeologist to determine further treatment of the remains.

7.7 REFERENCES

Albion Environmental. 2001. *Ohlone Costanoan Participation in Archaeological Investigations*. Prepared by Albion Environmental Inc., Santa Cruz. Prepared for Jones & Stokes and Parsons Brinckerhoff.

Breschini, G., and T. Haversat. 1980. *Preliminary Archaeological Report and Archaeological Management Recommendations for CA-MNT-170, on Pescadero Point, Monterey, California.* Archaeological Consulting, Salinas, California.

Breschini, Gary S., Trudy Haversat, and Mona Gudgel. 2000. *10,000 Years on the Salinas Plain: An Illustrated History of Salinas City, California*. In *News from: The Monterey County Historical Society*. Salinas, California. March 2000.

Bryne, S. 2002. *Archaeological Monitoring of the Wilder Ranch Bike Path Construction and Mitigation Related to Archeological Site CA-SCR-38/123/H*. Garcia and Associates, San Anselmo, California.

California Office of Historic Preservation - (CA-OHP). 1976a. California Inventory of Historic Resources. State of California Department of Parks and Recreation, Sacramento, California.

_____. 1976b California Points of Historical Interest. California State Parks, Sacramento, California.

_____. 1996 California Historical Landmarks. State of California, California State Parks, Sacramento, California.

_____. 2007 Historic Properties Directory. State of California, Department of Parks and Recreation, Sacramento, California.

California Soil Resources Lab, Online Soil Survey. Online: http://casoilresource.lawr.ucdavis.edu/drupal/node/27. Site visited October 2008.

California State Parks, Office of Historic Preservation. Site of the Battle of Natividad, electronic document. Online: http://ohp.parks.ca.gov. Site visited October 2008.

Casagrande, J. and Watson, F. 2006. *Reclamation Ditch Watershed Assessment and Management Plan A- Watershed Assessment.* Monterey County Resources Agency and the Watershed Institute, California State University Monterey Bay.

City of Salinas. 2002. *Salinas General Plan.* Salinas, California.

Goerke, B. 2006. *Chief Marin: Leader, Rebel, and Legend- A History of Marin County's Namesake and His People.* Heyday Books, Berkeley, California.

Hart, J. 1978. *A Companion to California.* New York, New York: Oxford University Press.

History of Boronda Adobe, electronic document. Online: http://www.mchsmuseum.com. Site visited October 2008.

Jones, T., N. Stevens, D. Jones, R. Fitzgerald, and M. Hylkema. 2007. *The Central Coast: A Midlatitude Milieu* in *The Prehistory of California*, edit by Jones and Klar, 125-146, Altamira Press, Walnut Creek, California.

Kroeber, A. L.1925. *Handbook of the Indians of California*. Unabridged republication of 1925. Bureau of American Ethnology, Bulletin 78. Dover Publication, Inc., New York.

Levy, R. 1978.Costanoan. In *California,* edited by R. F. Heizer, pp. 398–413. Handbook of North American Indians, vol. 8, W. C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Milliken, R.1988. *Ethnographic Context*. In *Archaeological Investigations at Elkhorn Slough: CA-MNT-229, a Middle Period Site on the Central California Coast,* edited by Dietz, Hilderbrandt, and Jones, 57-94.

_____. 1995. *A time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810.* Ballena Press, Novato, California.

Monterey County Historical Society. 1989. *Historical and Architectural Resources Survey and Preservation Plan City of Salinas.* Monterey, California: Monterey County Historical Society. Prepared for the City of Salinas.

_____. A Short History of Salinas, California, electronic document. Online: http://www.mchsmuseum.com. Site visited October 2008.

National Park Service. Juan Bautista de Anza National Historic Trail, Electronic document. Online: http://www.nps.gov/juba/. Site visited October 2008.

Shipley, W.1978. Native *Languages of California* pp. 80-90, in Heizer (vol. ed.) and W.C. Sturtevant (gen. ed.), Handbook of North American Indians, Volume 8: California. Smithsonian Institution, Washington D.C.

_____. 1995. *A Time of Little Choice: The Disintegration of the Tribal Culture in the San Francisco Bay Area 1769–1810*. Ballena Press Anthropological Papers No. 43. Ballena Press, Novato, California.

Singletary, Otis A. 1960. *The Mexican War*. University of Chicago Press, Chicago.

Steinbeck, John. 1961 [1938]. *In Dubious Battle*. Bantam Books, New York. 1991 [1939]. Grapes of Wrath. Penguin Group, USA.

United States Geological Survey Maps. 2003. San Juan Bautista CA 7.5 Minute Topographic Quadrangle.

_____. 2003. Prunedale CA 7.5 Minute Topographic Quadrangle

8.0 GEOLOGY, SOILS, MINERAL RESOURCES, AND PALEONTOLOGY

8.1 INTRODUCTION

This chapter describes the existing geology, soils, mineral resources, and paleontology within, and in the vicinity of, Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project and evaluates the potential geology, soils, mineral resources, and paleontology impacts associated with project construction and operation. Potential geology, soils, mineral resources, and paleontology impacts are less than significant for construction and operation of the project facilities. All impacts to geological, soil, paleontological, and mineral resources will be less than significant with incorporation of the measures as described in Section 8.6 Applicant Proposed Measures.

8.2 METHODOLOGY

Preparation of this section was primarily based on review of geologic literature and unpublished documents that cover the project area. These included publications from the U.S. Geological Survey, the U.S. Soil Conservation Service, and the Department of Conservation California Geological Survey. General Plans from Monterey County, City of San Juan Bautista and City of Salinas were reviewed for their seismic and geologic hazards data. Planning documents and Environmental Impact Reports from adjacent areas to the project were also reviewed. In addition, a report prepared by Kleinfelder in 2007 titled "Geotechnical Investigation Proposed Crazy Horse Switching Station, Salinas, California" (Kleinfelder) regarding geotechnical aspects of the project site was reviewed.

8.3 REGULATORY BACKGROUND

The regulatory requirements applicable to these resources include the following:

- the Alquist-Priolo Special Studies Act of 1972, which prohibits development within 50 feet of an active fault zone; and

- the California Public Utility Commission (CPUC) General Order 95.

8.4 EXISTING CONDITIONS

8.4.1 Topographic Setting

The project is located within the San Juan Bautista quadrangle, east of Monterey Bay at the junction of Santa Cruz, Santa Clara, San Benito and Monterey Counties. This quadrangle covers the extreme southern Santa Cruz and northern Gabilan Ranges in the central Coast Ranges of California, traversed by the San Andreas Fault and the Pajaro River. Topography within Monterey County is extremely varied, and elevations range from sea level to 5,844 feet at Junipero Serra Peak in the Santa Lucia Range. The County includes the Salinas Valley, which is bounded by the Gabilan Mountains to the east and the Santa Lucia Mountains to the west.

The project is situated in a valley between two hill crests, with an ephemeral drainage located at the base of the slope. Two unnamed drainages drain into Gabilan Creek on the southeast side of San Juan Grade Road along the southeastern side of the project area. Before reaching Gabilan Creek, the channel along Crazy Horse Canyon, to the west of the ridge, drains to Lagunita Lake, a small reservoir partially filled with sediment.

8.4.2 Geologic Setting

The project is located along the northern end of Salinas Valley, within the Coast Ranges Geomorphic Province, a discontinuous series of northwest-southeast trending mountain ranges, ridges and valleys characterized by complex folding and faulting adjacent to the California coastline. Geologically, the Coast Ranges are comprised of a series of fault-bounded tectonic blocks within a right-lateral strike-slip fault system. In this portion of the Coast Ranges Province, the Pacific plate moves north relative to the North American plate and deformation along this plate boundary is distributed across a wide fault zone which includes the San Andreas, Hayward, Calaveras and San Gregorio Faults.

The project is located within the Gabilan Range province, that has a granitic basement, and is overlain by a much thinner series of San Lorenzo (Oligocene) sandstones and shales and Vaqueros and later (lower and middle Miocene) sediments and volcanics, overlapped by Purisima Formation and Aromas red sands (Pliocene and Pleistocene).

The basement rock beneath the project site is inferred to be Pre-Jurassic age granodiorite and quartz diorite of the Gabilan Range that is exposed at ground surface north of the project site. During the Pleistocene the weathered granitic rock was washed down slope and deposited as an alluvial fan along stream channels that once occupied the project site. The resulting fanglomerate deposit consists of moderately to well consolidated, deeply weathered, moderately to well graded sand, silt and well rounded gravel and cobbles. The rock fragments that make up the gravel and cobbles of the formation consist of minerals of granitic origin, including mica, feldspars and quartz.

Unconformably overlying the fanglomerate deposit and forming the generally north-south trending ridge crests are aerially deposited sand dunes of the Aromas Formation. In the vicinity of the project, the Aromas deposits consist of poorly graded, fine-grained sand that is highly weathered and oxidized to a reddish hue. The lower portions of each dune sequence below the weathering zone may be relatively unconsolidated.

Geologic mapping and subsurface exploration by Kleinfelder indicate that the valley within which the project will be constructed is underlain by Pleistocene age Aromas Sand formation and alluvial fan deposits. The creek channel at the bottom of the valley is filled with a relatively young debris-flow deposit originating from the hills east of the creek. The geologic units discussed in this section are described in more detail in Table 8-1.

Table 8-1: Geologic Units

Symbol	Unit Name	Age	Description
Qls, al, t, f	Alluvium	Recent (Holocene)	Silts, sands and clays; landslide, alluvium, terraces, fans and granitic gravels
Qa	Aromas Red Sands	Middle Pleistocene	Red to yellow, friable, well-sorted, cross-bedded sands.
Tp	Purisima Formation	Upper and middle Pliocene	Fossiliferous gravels, sands and a few silts and clays.
Tmv	Sandstone; Volcanic Group - Basalt	Middle and lower Miocene	Andesite porphyry, and agglomerate, with some interbedded arkosic sandstones and black flow at base.
Trb, Tvar	Vaqueros Group	Middle and lower Miocene	Red Beds and Arkosic Sandstone - Torrentially bedded red coarse conglomerate and breccia, with limestone boulders; coarse, fossiliferous sandstone.
Tolp, Tolsj	San Lorenzo Group – Pinecate and San Juan Bautista Fm	Oligocene	Massive, poorly bedded, cavernous-weathering yellow arkosic sandstone – few fossils; Buff-colored, medium-to-fine-grained sandstone and sandy shale – fossiliferous.
qd	Santa Lucia Quartz Diorite	(Pre-Jurassic)	Biotite-quartz diorite aplite.
ss, gls	Sur Series and Gabilan Limestone	(Pre-Jurassic)	Quartzite, schist and limestone.

Source: Allen, 1946

8.4.3 Faulting and Seismicity and Related Hazards

The San Andreas Fault system is the major active fault system in California and is the boundary between two major parts of the earth's crust, the North American plate and the Pacific plate. The relative movement between these two plates causes the earthquakes that occur along the San Andreas and related faults. The San Andreas Fault Zone occurs approximately 5.8 miles northeast of the project site at its closest point. The Fault system is considered to be the major seismic hazard in California and has historically caused significant damage in San Benito County. Large earthquakes were recorded in 1838, 1865, 1890, 1906, and 1989.

Other faults associated with the San Andreas Fault system plate boundary include the Sur-Nacimiento Fault Zone to the west, the Zayante-Vergeles Fault to the north, and Calaveras, Sargent-Berrocal Fault Zone, San Gregorio, Palo Colorado and Hayward faults among others as described below. Together these faults are referred to as the San Andreas Fault system. Monterey County is located in a seismically active area; however, the maximum anticipated earthquake for this area has not been experienced. The principal threat from earthquakes is the damage or collapse of buildings or infrastructure (dams, bridges, overpasses, roads, railways, and water, power, and communication lines).

Ground motion due to earthquakes on faults located a distance from the project site is a potential hazard since the overall site region is seismically active. Earthquakes have occurred in historic time with surface displacement on the San Andreas Fault Zone, the Hayward Fault Zone, the Calaveras Fault, and other minor faults in the region. A major seismic event on these or other nearby faults may cause substantial ground shaking at the project site.

Table 8-2 summarizes the key characteristics of the major active faults that occur within the vicinity of the project site, including faults that are part of the main San Andreas Fault system. Active faults are those that show evidence of movement within the Holocene age (within the last 11,000 years).

Table 8-2: Known Active Faults

Fault	Approximate Distance and Direction (miles)	Fault Type	Slip Rate (inches per year)	Maximum Moment Magnitude[1]
Zayante-Vergeles	2.3 N	RL-R	0.003	6.8
San Andreas Fault Zone (1906 Event)	5.8 NE	RL-SS	0.669	7.9
Rinconada	8.1 NE	RL-SS	0.039	7.3
Sargent-Berrocal Fault Zone	10.2 NE	RL-R-O	0.118	6.8
Calaveras Fault (S of Calaveras Reservoir)	11.7 E	RL-SS	0.236	6.2
San Andreas Fault Zone (Santa Cruz Mts)	13.2 NW	RL-SS	0.669	7.0
Monterey Bay (Tularcitos)	19.1 SW	RL-R-O	0.020	7.1
Palo Colorado (Palo	27.3 SW	RL-SS	0.118	7.0

Fault	Approximate Distance and Direction (miles)	Fault Type	Slip Rate (inches per year)	Maximum Moment Magnitude[1]
Colorado-San Gregorio Fault Zone)				
San Gregorio	29.6 W	RL-SS	0.197	7.3
Monte Vista	30.9 NW	R	0.016	6.5
Ortigalita	32.3 NE	RL-SS	0.039	6.9
Hayward (southeast extension)	34.9 N	RL-SS	0.118	6.5
San Andreas Fault Zone (peninsula segment)	35.2 NW	RL-SS	17	7.0

Source: Kleinfelder., 2003 and 2007, California Department of Conservation, 2002

Fault Type: RL=right lateral, R=reverse, SS=strike slip, O=oblique

Unit:

NE northeast **W** west
E east
NW northwest
SW southwest

[1] Maximum moment magnitude with a 90 percent probability of not being exceeded in 50 years.

In compliance with the Alquist-Priolo Earthquake Fault Zoning Act (A-P Act), the California Geological Survey has established Earthquake Fault Zones (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate development near active faults in order to mitigate the hazard of surface fault rupture. Principal faults zoned under the A-P Act include the San Andreas, Calaveras, Hayward and San Gregorio Fault (Hart et al, 2007). The San Andreas is the closest active fault as specified by the A-P Act and trends in a northwestern-southeastern direction approximately 5.6 miles to the northeast of the project. The actual project area is not within the EFZ and no mapped active fault traces are known to transverse the site. The closest fault considered capable of surface rupture is the Zayante-Vergeles fault located approximately 2.5 miles to the north. Based on the data reviewed and the Kleinfelder report, there is no evidence of active faulting across the site; therefore, the risk of surface rupture at the project site is low.

8.4.4 Geologic Hazards

8.4.4.1 Subsidence

The primary causes of most subsidence are human activities, such as: underground mining of coal, groundwater or petroleum withdrawal, and drainage of organic soils. Regional lowering of land elevation occurs gradually over time. It may aggravate flooding potential, particularly in

coastal areas. Collapses, such as the sudden formation of sinkholes or the collapse of an abandoned mine, may destroy buildings, roads, and utilities.

Generally, subsidence poses a greater risk to property than to life. Damage usually consists of direct structural damage and property loss and depreciation of land values, but also includes business and personal losses that accrue during periods of repair.

8.4.4.2 Landslides

Landslides are often triggered by other natural events, such as floods, earthquakes, and volcanic eruptions. Other human factors contributing to landslides are cut-and-fill, construction of highways, construction of buildings and railroads, and mining operations. During the past 20 years, landslides have resulted in 15 disaster declarations. Landslides and mudflows are common events in California because of active mountain-building processes, rock characteristics, earthquakes, and intense storms. The principal natural factors are topography, geology, and precipitation.

8.4.4.3 Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similar to a fluid when subjected to high-intensity ground shaking. An increase in pore pressure occurs as the soil attempts to compact in response to the shaking, resulting in less grain-to-grain soil contact, and therefore, loss of strength. Liquefaction occurs when three general conditions exist: shallow groundwater (40 feet below ground surface or less); low density, fine-grained sandy soils; and high-intensity ground motion. Effects of liquefaction on level ground can include sand boils, settlement and bearing capacity failures below structural foundations.

8.4.4.4 Tsunamis

A tsunami is a wave or series of waves generated at sea or near shore by an earthquake, volcano, or landslide. Tsunamis often damage or destroy docking and waterfront storage facilities, boats and ships, residential and non-residential buildings, and other infrastructure.

8.4.5 Soils

The soils in Monterey County vary considerably. There are silicon/quartz deposits along the beaches. To the east, toward Salinas, there are alluvial deposits that form some of the finest farmlands in the nation. The soils in the Salinas Valley area are rich, alluvial deposits prime for growing numerous crops. Erosion of the Gabilan Mountains to the east and the Santa Lucia Mountains to the west has been the source of the soils that form the alluvial plain upon which Salinas rests. Within the County itself, there are rolling hills that are heavily wooded. The soils in these areas are of sedimentary origin, but not particularly suited for agriculture.

The project site is located in the Salinas Valley, which consists primarily of unconsolidated Quaternary deposits. These deposits were derived from the Salinas River, its tributaries, basin and tidal flat sediments and eolian or dune sediments. Underlying the Quaternary Age sediments

is a layer of mostly marine Pliocene to Pleistocene Age sediments. The basement rock is composed of high grade metamorphic rock and Cretaceous granitic rock.

The project is situated in a valley between two hill crests in an area of soils belonging to the Arnold loamy sand (AkF), and the Gloria sandy loam (GhF) and the Arroyo Seco gravelly loam (AvA) as mapped by the Natural Resources Conservation Service.

The Arnold soil series consists of excessively drained soils formed on hills and uplands in old marine dune sands or in materials weathered from soft sandstone. The elevation range of this soil series is from 100 to 200 feet and Arnold soils have slopes of 9 to 50 percent. In profile, the loamy sand is underlain by loamy fine sand and beneath these soil horizons is bedrock parent material consisting of soft sandstone. Runoff is rapid and the erosion hazard is high. Due to the often steep slopes and high erosion hazard, this soil is generally unsuitable for development of structures or roads. The AkF Arnold loamy sand is a moderately steep to steep soil on uplands; runoff is rapid and the erosion hazard is high.

The Gloria soil series consists of well drained and moderately well drained soils formed in granitic alluvium on benches, terraces and alluvial fans. These soils occur at elevations between 100 and 2000 feet and have slopes ranging from 15 to 50 percent. In profile, the sandy loam is underlain by hardpan. The GhF Gloria sandy loam is a moderately steep and steep soil on dissected terraces that is well drained with rapid runoff and high erosion hazard.

The Arroyo Seco soil series consists of well drained soils formed in granitic alluvium on level with flood plains and alluvial fans. These soils occur at elevations between 100 and 2,000 feet and have slopes ranging from 0 to 2 percent. In profile, the gravelly sandy loam is underlain by very gravelly coarse sandy loam. The AvA Arroyo Seco gravelly loam is a nearly-level to moderately-sloping soil on flood plains, soil is well drained, runoff is slow to medium and the erosion hazard is low.

8.4.6 Mineral Resources

In Monterey County, the most important mineral-bearing formations include the Sur Series (dolomite, limestone, barite); Franciscan Formation (gold) and related serpentine intrusives (chromite, mercury, asbestos); Cretaceous granitic rocks (stone, feldspar); Miocene sedimentary formations (oil, gas, coal, dimension stone, diatomite); and Quaternary alluvium, beach and dune deposits (sand, gravel, clay). Some of the mineral deposits also are directly associated with structural features being related to faults (gold, mercury) and folds (oil, gas).

There are no known important mineral resources in the immediate vicinity of the project site, nor are there active mining operations. Several small limestone quarries have operated in various parts of the Gabilan Range within the vicinity of the project site, but to date there are no known operations at or adjacent to the project site.

Aggregate resources are classified by the State Geologist into four mineral resources zones based on the likelihood of the presence of mineral deposits and their economic value in the form of

Mineral Resource Zones (MRZs) under the Surface Mining and Reclamation Act of 1975 (SMARA). There are no MRZs identified within the project area.

8.4.7 Paleontology

Paleontology is the study of prehistoric life forms through fossil remains. Fossils provide evidence and understanding of prehistoric life, early geologic processes and are considered a valuable resource. The fossils found in Monterey County are of marine life forms and are micro-organisms, such as foraminifers or diatoms, mollusks and barnacles, most commonly found in sedimentary rocks ranging from Cretaceous age to Pleistocene age.

The majority of the project site is located on alluvium, fans, terraces and landslide deposits of Holocene age. The main fossiliferous bearing deposits in the vicinity of the project are the Purisima Formation, Vaqueros group and San Lorenzo Group.

8.3.5.1 Upper and Middle Miocene Purisima Formation

The Purisima Formation includes a conformable series of nearly 10,000 feet of poorly consolidated clays, silts, sands, and gravels and is overlain unconformably by the Pleistocene Aromas red sands. It is variable in composition, fossiliferous in its marine facies, and has been folded. It occupies most of the region northeast and west of the San Andreas Fault.

The basal gravels of the Purisima Formation are composed of debris from underlying rocks. The Purisima formation west of the San Andreas Fault is more fossiliferous than to the east. Fossils identified consist of numerous echinoids, barnacles, small oysters (*Ostrea vespertina*) and pectens not found to the east and appear to represent a shallower facies. Perhaps the northern spur of the Gabilan Range west of the fault was an offshore shallow reef.

8.3.5.2 Middle and Lower Miocene Vaqueros Group

The Vaqueros Group consists of fossiliferous sandstones and red beds up to 1,800 feet in thickness, which form the highest points of the rolling hills south and west of the town of San Juan Bautista. They conformably overlie the Pinecate formation and are overlain unconformably by the lavas and agglomerates of the volcanic group.

The Vaqueros sandstone, found beneath the red beds and interbedded with them is a fossiliferous, coarse, arkosic and calcareous sandstone. It contains some interbedded shaley members and some conglomerate made up of annular to sub-rounded pebbles of granite, limestone and schist. Fossils identified in the Vaqueros sandstone include *Echinarachnius* (sand dollar), *Ostrea vaquerosensis* (mollusks/oysters), and *Turritella inezana bicarina* (gastropods).

8.3.5.3 Oligocene San Lorenzo Group

The San Lorenzo rocks in the San Juan Bautista quadrangle were divided into two formations, the San Juan Bautista and the Pinecate. These occupy large portions of the Tertiary area west and southwest of the town of San Juan Bautista as far as Pinecate Peak. Both formations are composed of sandstone but are differentiated on the basis of the presence and/or absence of fossils and topographic expression. The San Juan Bautista formation consists of as much as

1,500 feet of poorly bedded, fine-grained, fossiliferous, argillaceous and calcareous sandstones, carbonaceous grits often containing numerous wood fragments and shales.

Fossils identified in the San Juan Bautista Formation are *Bruclarkia gravida* (gastropods – snails/slugs), *Fusinus chehalisensis* (gastropods), *Acila muta* (clams), *Epitonium wagneri* (gastropods) and *Modiolus kirkerensis* (gastropods).

8.5 IMPACTS

8.5.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

8.5.1.1 Geology

Impacts to geology may be considered significant if they:

- result in severe damage or destruction to one or more project components as a direct consequence of a geologic event;
- result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:
    - rupture of a known earthquake fault,
    - strong seismic ground shaking,
    - seismic-related ground failure, including liquefaction, or
    - landslides; or
- are located on a geologic unit that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse.

8.5.1.2 Soils

Impacts to soils may be considered significant if they:

- result in a substantial soil erosion or loss of topsoil;
- are located on a soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse; or
- create a substantial risk to life or property due to the presence of expansive soils.

CEQA also includes the potential for consideration of significant impacts due to the presence of soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems

where sewers are not available; however, this consideration is not applicable to the project because no sanitary wastewater will be produced.

8.5.1.3 Mineral Resources

Impacts to mineral resources may be considered significant if they:

- result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist and of value to the region and residents of the state, or
- result in the loss of availability of a locally important mineral resource recovery site.

8.5.1.4 Paleontological Resources

Impacts to paleontological resources may be considered significant if they result in physical changes to the landscape, directly affecting or changing the context within which a paleontological resource or unique geologic feature exists.

8.5.2 Construction

8.5.2.1 Geology

The following geologic hazards were evaluated for impacts due to switching station construction and power line reconfiguration.

8.5.2.1.1 Fault Rupture

Although the proposed facilities are located in close proximity to other faults in the vicinity, the potential for surface fault rupture to affect the site is low and no impact is expected.

8.5.2.1.2 Strong Ground Shaking and Related Effects

Various faults in the area are capable of generating strong ground shaking in the switching station and tower location project areas, but the likelihood for strong ground shaking during the short construction period is low. Project facilities will be engineered to withstand expected ground motions without substantial adverse affects.

The project facilities are located in an area with various capable of generating strong ground shaking, which has the potential to create conditions prone to ground failure. At present, it is not possible to predict when or where movement will occur on these faults. It may be assumed, however, that movement along one or more of these faults would result in a moderate to major earthquake during the anticipated life of the project.

In the event of an earthquake, seismic risk to a structure would depend upon the distance of the structure from the epicenter and source fault, the characteristics of the earthquake, the geologic, groundwater and soil conditions underlying the structure and its vicinity, and the nature of the construction. Kleinfelder made preliminary estimates of ground response characteristics at this site, indicating that high peak accelerations can be expected during a moderate or major earthquake. These events could cause severe ground shaking onsite.

Project facilities will be engineered to withstand expected ground motions without substantial adverse affects. Proper design, based upon site-specific and detailed geotechnical studies, would reduce the effects of strong seismic shaking on project facilities. New towers will present no greater risk than existing towers in the area. Conformance to design standards developed for the project would result in a less than significant impact to the public or environment associated with strong seismic shaking.

As described in the Kleinfelder report, soil and groundwater conditions are not conducive to liquefaction processes in the project area. In addition, the soils at the site were found to be sufficiently competent to resist liquefaction. Therefore, the potential for liquefaction is low and the impact is less than significant.

8.5.2.1.3 Landslides

The project facilities are located on a hillside and ridge top so slope stability risks are a significant concern. *PG&E's Grading Standards*, a copy of which will be provided to the CPUC, upon request, will be implemented in order to minimize impacts to the project area. Therefore, no impact is expected.

8.5.2.1.4 Unstable Geologic Units

There are no unstable geologic units identified in the project area and, therefore, no impact is expected.

8.5.2.1.5 Subsidence

Project construction will have no subsidence impact because the project does not involve the withdrawal of subsurface fluids that can cause subsidence, nor will it impact sedimentary materials that are particularly prone to subsidence.

8.5.2.2 Soils

Construction of the switching station will occur on a hillside and involve grading and cut-and-fill slopes. Surface disturbance will be minimized to the extent consistent with safe and efficient completion of the project scope of work. Erosion control best management practices (BMPs) will be used where grading occurs. Topsoil will be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil will be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that will not be subject to additional disturbance will be stabilized with appropriate erosion control treatments. Engineering-level geotechnical studies were completed by Kleinfelder in order to provide site-specific soil conditions for the project design. Considering these factors, the following soil impacts were evaluated for construction impacts.

8.5.2.2.1 Substantial Erosion or Loss of Topsoil

Slope analyses indicate that planned cut-and-fill slopes can be constructed at an inclination no steeper than 2:1 (horizontal to vertical) and site preparation should follow recommendations in the Kleinfelder report. All slopes (including cut-and-fill) should be protected against erosion and includes drainage controls during construction and maintenance, especially following the first winter after construction. Based on these considerations, any impacts of soil erosion or loss of topsoil would be less than significant.

8.5.2.2.2 Expansive Soils

Based on Natural Resources Conservation Service web soil survey mapping in the project area, the soils at the project site consist of sandy loam or loamy sand. Design-level geotechnical studies by Kleinfelder indicate that engineered fill should be free of organic or other debris; native soil materials, exclusive of debris, may be used as engineered fill provided they contain less than 3 percent organics by weight. Soil conditions will be accounted for in the design of the project structures and facilities, thereby reducing any impacts to less than significant.

8.5.2.2.3 Soil Permeability

Based on soil data reviewed, the Arnold, Gloria, and Arroyo Seco Series are present in the project area. For the Arnold series, runoff is very low to medium with permeability rapid above the sandstone and slow in the sandstone. The Gloria series has slow to rapid runoff with very slow permeability. The Arroyo Seco series has slow and medium runoff with moderately rapid permeability. Consideration of soil conditions will be accounted for in the design of these facilities, thereby ensuring that any impacts are less than significant.

8.5.2.3 Mineral Resources

There are no known important mineral resources that would be impacted by the project. There are no MRZ-2 zones in the project vicinity. Therefore, the project will have no impacts on mineral resources.

8.5.2.4 Paleontology

Construction will occur where alluvial sediments (loamy sand) and the Aromas Sand Formation will be encountered, neither of which contain any known fossils. Project construction will involve grading and excavation to depth. Surface disturbance will be minimized to the extent consistent with safe and efficient completion of the project scope of work. Impacts to paleontological resources are considered low due to on the resource sensitivity of impacted formations. The specific criteria applied for the paleontology sensitivity analysis are summarized below.

- **High sensitivity:** High sensitivity is assigned to geologic formations known to contain paleontological localities with rare, well-preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleobiology and evolutionary history (phylogeny) of animal and plant groups. Generally,

highly sensitive formations produce vertebrate fossil remains or are considered to have the potential to produce such remains.

- **Moderate sensitivity:** Moderate sensitivity is assigned to geologic formations known to contain paleontological localities with poorly preserved, common elsewhere, or stratigraphically unimportant fossil material. The moderate sensitivity category is also applied to geologic formations that are judged to have a strong but unproven potential for producing important fossil remains.

- **Low sensitivity:** Low sensitivity is assigned to geologic formations that, based on their relatively youthful age and/or high-energy depositional history, are judged unlikely to produce important fossil remains. Typically, low-sensitivity formations produce poorly preserved invertebrate fossil remains in low abundance.

There are no geologic formations at this site that are anticipated to be at the high sensitivity level. The predominant formations expected to be graded and excavated at the switching station site, the Holocene alluvial sediments, are classified as low sensitivity and of low significance. There is low potential for excavation at the site that would intersect Pliocene Purisima Formation that would be classified as having moderate sensitivity in this location. Due to the low likelihood of intersecting fossiliferous beds based on soil characteristics, and the lack of significant fossil discoveries in this vicinity, any impacts on paleontology would be less than significant.

8.5.3 Operations and Maintenance

8.5.3.1 Geology

Operation and maintenance of the project will not have geologic hazard-related impacts.

8.5.3.2 Soils

Operation and maintenance of the project will not have an impact to soils except for occasional surface disturbances that may occur at the switching station which will be under maintenance control. These disturbances will have a negligible impact on soils and will be less than significant.

8.5.3.3 Mineral Resources

There will be no operations and maintenance impacts to mineral resources.

8.5.3.4 Paleontology

There will be no operation and maintenance impacts to paleontological resources.

8.6 APPLICANT PROPOSED MEASURES

Based on the analysis of impacts and the design features that have been incorporated into the project, the project will not have significant impacts related to geology, soils, mineral resources,

or paleontology. Therefore, no applicant proposed measures are required. However, the following best management practices will be implemented to further minimize any potential impacts:

- Surface disturbance will be minimized to the extent consistent with safe and efficient completion of the project scope of work.

- Topsoil will be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil will be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that will not be subject to additional disturbance will be stabilized by landscaping.

- Erosion control BMPs will be implemented where grading occurs.

8.7 REFERENCES

Association of Bay Area Governments (ABAG). 2008. Earthquake Hazard Liquefaction Maps. Online: http://www.abag.ca.gov/bayarea/eqmaps/liquefac/pickcityliq.html . Site visited October 22, 2008.

Allen, J.E. 1946. Geology of the San Juan Bautista Quadrangle California. California Division of Mines and Geology, Bulletin 133.

California Department of Conservation. 2002. Probalistic Seismic Hazards Assessment. Online: http://www.conservation.ca.gov/cgs/rghm/psha/Pages/Index.aspx. Site visited October 22, 2008

California Department of Water Resources. 2003. California Groundwater Bulletin 118. Online: http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/3-3.04.pdf . Site visited October 22, 2008.

City of San Juan Bautista (CSJB). 1998. San Juan Bautista General Plan Environmental Impact Report. Online: http://www.san-juan-bautista.ca.us/PDFs/Planning/1998_GP_EIR.pdf . Site visited October 22, 2008.

Cotton Bridges Associates. 2002. City of Salinas General Plan Environmental Impact Report. Online: http://www.ci.salinas.ca.us/services/engineering/planning/pdf/EIR.pdf . Site visited October 24, 2008.

Hart, E. W. and W. A. Bryant. 2007. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. Department of Conservation (CDC), California Geological Survey, Special Publication 42.

Hart, E.W. 1966. Mines and Mineral Resources of Monterey County, California. California Division of Mines and Geology, County Report 5.

Jennings, C.W. and G.J. Saucedo. 1999. Simplified Fault Activity Map of California, California Department of Conservation. California Geological Survey, Map Sheet 54, map scale 1:2,500,000, revised 2002 by Toppozada, T. and D. Branum.

Kennedy Jenks Consultants. 2004. Hydrostratigraphic Analysis of the Northern Salinas Valley, prepared for Monterey County Water Resources Agency (MCWRA). Online: http://www.mcwra.co.monterey.ca.us/Agency_data/Hydrogeologic%20Reports/HS_Analysis_NSV/Section2_BackgroundHydrogeology.pdf. Site visited October 22, 2008.

Kleinfelder. 2007. Geotechnical Investigation Proposed Crazy Horse Switching Station, Salinas, California.

Michael Brandman Associates (MBA). 2006. Monterey County 2006 General Plan Draft Program Environmental Impact Report. Online: http://www.co.monterey.ca.us/planning/docs/eirs/gpu/GPU_DEIR_081806.pdf. Site visited October 22, 2008.

Monterey County Planning Department. 2004. Rancho San Juan Specific Plan and HYH Property Project EIR. Online:http://www.co.monterey.ca.us/planning/docs/eirs/RSJEIR/Chapter%205.8%20Soils%20and%20Geology2.pdf . Site visited October 22, 2008.

Monterey County Water Resources Agency (MCWRA). 2003. Floodplain Management Plan (Updated December 2003). Online: http://www.mcwra.co.monterey.ca.us/Floodplain%20Management/Documents/Floodplain%20Management%20Plan%202003.pdf . Site visited October 23, 2008.

Natural Resources Conservation Service, United States Department of Agriculture. 2008. Web Soil Survey, Soil Maps of Monterey County, California. Online: http://websoilsurvey.nrcs.usda.gov/app/. Site visited October 31, 2008.

Stoffer, P.W. 2005. The San Andreas Fault in the San Francisco Bay Area, California: A Geology Fieldtrip Guidebook to Selected Stops on Public Lands, United States. Geological Survey Open-File Report 2005-1127. Online: http://pubs.usgs.gov/of/2005/1127/ . Site visited October 22, 2008.

United Stated Department of Agriculture (USDA) Soil Conservation Service. 1978. Soil Survey of Monterey County, California.

9.0 HAZARDS AND HAZARDOUS MATERIALS

9.1 INTRODUCTION

This chapter describes the existing temporary and permanent hazards within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent hazards associated with project construction and operation, including potential fire hazards and releases or encounters with existing hazardous substances. With implementation of the measures listed in Section 9.5 Applicant Proposed Measures, potential impacts will be less than significant.

9.2 METHODOLOGY

An environmental database report for the site was obtained from Environmental Data Resources on January 5, 2010. No hazardous materials sites were identified in the report that are registered on one or more of the environmental oversight agency database lists.

9.3 EXISTING CONDITIONS

9.3.1 Regulatory Background

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) regulates hazardous waste, oversees the cleanup of existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of the Federal Resource Conservation and Recovery Act of 1976 (RCRA) and the California Health and Safety Code.

The Central Coast Regional Water Quality Control Board (RWQCB) is responsible for protecting the beneficial uses of water resources in the project vicinity. The RWQCB's Water Quality Control Plan (Basin Plan) sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. The Basin Plan establishes both numerical and narrative objectives and standards for water quality specific to the Central Coast Region aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan.

The Hazardous Materials Management Services branch of the Monterey County Health Department's Environmental Health Division is the Certified Unified Program Agency (CUPA) for Monterey County. It regulates the following activities in the project vicinity:

- Hazardous Material Business Plan and Inventory Program
- California Accidental Release Prevention Program
- Hazardous Waste Generator Program
- Hazardous Waste Onsite Treatment: Tiered Permitting Program
- Underground Storage Tank Program
- Aboveground Petroleum Storage Tank Program

9.3.2 Hazardous Materials Sites

The environmental database report details the results of a search for sites with potential soil and/or groundwater contamination that have been registered on one or more environmental oversight agency database list. No known or suspected hazardous materials sites were identified in the vicinity of the proposed project site.

9.3.3 Hazardous Materials Onsite

A list of the types and quantities of hazardous materials anticipated being stored onsite during project construction and operations will be provided to CPUC staff when available. PG&E will use standard BMPs (e.g., secondary containment, crew training, proper handling procedures, and immediate response to any spills) to ensure surface water and/or groundwater quality is not affected by an accidental release of hazardous materials.

9.4 IMPACTS

9.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Project impacts are considered significant if they result in any of the following environmental effects:

- create a hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials;
- create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous materials within 0.25 mile of a school;
- are located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a hazard to the public or the environment;
- are located within 2 miles of a public or private airport and would 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; or
- expose people or structures to a risk of loss, injury, or death involving wild land fires.

9.4.2 Construction

9.4.2.1 Hazardous Materials Sites

No known or suspected hazardous materials sites were identified in the project vicinity that could create a significant hazard to the public or the environment. Therefore, the project will have no impact.

9.4.2.2 Hazardous Materials Releases

Project construction will require the use of motorized heavy equipment, including trucks, cranes, backhoes, and air compressors. This equipment requires fuel and liquid replenishment in the form of gasoline, diesel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Surface water and/or groundwater quality could be impacted by an accidental release of one or more of these materials from a vehicle or motorized piece of equipment. Additionally, a release of liquid concrete during foundation construction activities could wash into nearby waterways or infiltrate the soil, creating a hazardous waste. With implementation of the measures identified in Section 9.5 Applicant Proposed Measures, potential impacts from hazardous materials use will be less than significant.

The project is not located within 0.25 mile of any existing or proposed schools or within 2 miles of any airports or private airstrips. There are no emergency response plan staging areas or exit routes in the project vicinity. Therefore, there will be no impact.

9.4.2.3 Fire Hazards

Portions of the existing project will be constructed in open areas susceptible to wild land fires. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. Vehicles and equipment will primarily use existing roads to access the site and the switching station site will be cleared of dry vegetation during the initial grading activities. Project personnel will be required to carry fire extinguishing equipment and will be directed to park away from any remaining dry vegetation to reduce potential ignition of unforeseen fire hazards at or near the project site. PG&E will also prohibit trash burning and restrict smoking to cleared areas. By following these preventative measures, the potential for fire will be reduced to less than significant.

9.4.2.4 Lightning Hazards

PG&E's transmission lines and station facilities are designed and constructed with grounding devices. In the event of a lightning strike on a transmission line, this safety feature ensures that the strike is discharged to appropriate ground.

9.4.3 Operations and Maintenance

The following hazards have the potential to be present at the switching station on a routine basis.

9.4.3.1 Hazardous Materials Releases

9.4.3.1.1 Batteries

The switching station will be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. The batteries will be located in a battery building specifically designed for this purpose. Containment will be constructed under and around the battery racks within the building to prevent the release of battery acid in the event of a leak or rupture. Therefore, any potential impacts from the release of battery acid will be less than significant.

9.4.3.1.2 Sulfur Hexafluoride Gas

Sulfur hexafluoride gas (SF_6) is used as an insulator and arc suppresser in circuit breakers. Under normal conditions, it is completely contained in the equipment. Although SF_6 is relatively inert and non-toxic, it is considered a greenhouse gas. SF_6 is released only if there is a leak in one of the joints in the circuit breaker tank, or if there is a crack in the breaker. In either case, the loss of gas pressure/density will cause an alarm to be sent directly to the control center. This alarm will enable operators to minimize loss of $SF_{6;}$ and thus, potential impacts will be less than significant. PG&E will also incorporate applicant proposed measures (APMs) from Chapter 5: Air Quality to further reduce potential release of SF_6.

9.4.3.1.3 Electric Shock

The new switching station could pose a hazard of electric shock to site trespassers. This hazard will be present at the switching station equipment, and will not extend off-site to the general public. To minimize potential exposure to electric shock hazards, a 7-foot-tall chain link fence topped with a foot of barb wire will restrict site access. Warning signs will be posted to alert persons of potential electrical hazards. The power lines will be designed in accordance with the California Public Utility Commission's (CPUC) General Order 95 Guidelines for safe ground clearances established to protect the public from electric shock. These precautions will minimize the risk of electric shock. Therefore, potential impacts will be less than significant.

9.4.3.2 Fire Hazards

Since switching station and power line operation involve the conduction of electricity, operation will present a potential fire hazard. Incidents, such as downed power lines or equipment failure, could generate sparks and start a fire. However, the risk of fire will be extremely low because such incidents are very rare and PG&E installs high-speed relay equipment that senses a broken-line condition and actuates circuit breakers to de-energize the line in milliseconds. Additionally, the area within the switching station will be maintained to be free of all vegetation and combustible materials, and the power line will remain clear of vegetation as required by the CPUC. The switching station will not be manned, and will not be constructed of combustible materials; therefore, no fire-related impacts are anticipated.

9.5 APPLICANT PROPOSED MEASURES

9.5.1 Construction

With implementation of PG&E standard Best Management Practices (BMPs) during construction of the facility, the accidental release of hazardous materials will represent a less than significant impact. However, to further reduce impacts, PG&E will implement project-specific applicant proposed measures.

9.5.1.1 Hazardous Substance Control and Emergency Response Plan

PG&E will submit a Hazardous Substance Control and Emergency Response Plan to the CPUC for recordkeeping at least 30 days prior to project construction. The plan will identify methods and techniques to minimize the exposure of the public to potentially hazardous materials during all phases of project construction through operation. The plan will require implementing appropriate control methods and approved containment and spill-control practices (i.e., spill control plan) for construction and materials stored on-site. All hazardous materials and hazardous wastes will be handled, stored, and disposed of, in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. If it is necessary to store any chemicals on-site, they will be managed in accordance with all applicable regulations. Material Safety Data Sheets will be maintained and kept available on-site, as applicable.

9.5.1.2 Health and Safety Plan

PG&E will prepare a site-specific Health and Safety Plan to ensure that potential safety hazards would be kept at a minimum. The plan will include elements that establish worker training and emergency response procedures relevant to project activities. The plan will be submitted to the CPUC at least 30 days prior to construction for CPUC recordkeeping.

9.5.1.3 Fire Prevention and Response Plan

PG&E will prepare and submit a Fire Prevention and Response Plan to the CPUC and to local fire protection authorities for notification at least 30 days prior to construction. The plan will include fire protection and prevention methods for all components of the project during construction. The plan will include procedures to reduce the potential for igniting combustible materials by preventing electrical hazards, use of flammable materials, and smoking onsite during construction and maintenance procedures. Project personnel will be directed to park away from dry vegetation; to equip vehicles with fire extinguishing equipment; not to smoke; and to carry water, shovels, and fire extinguishers in times of high fire hazard.

9.5.1.4 Environmental Training and Monitoring Program Development and Implementation

An environmental training program will be established to communicate to all field personnel any environmental concerns and appropriate work practices, including spill prevention and response measures and Best Management Practices (BMPs). The training program will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific plans, including but not

limited to the project's Hazardous Substances Control and Emergency Response Plan, Storm Water Pollution Prevention Plan (SWPPP) and Health and Safety Plan.

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

9.5.2 Operations and Maintenance

Since operation and maintenance of the switching station will not result in significant impacts, no applicant proposed measures are proposed.

9.6 REFERENCES

California Department of Toxic Substances Control. 2008. Online: http://www.dtsc.ca.gov/. Site visited November 8, 2008.

Central Coast Regional Water Quality Control Board. 2008. *Central Coast – Basin Plan*. Online: http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/ Site visited November 8, 2008.

County of Monterey. *Monterey County Health Department*. 2008. Online: http://www.co.monterey.ca.us/health/EnvironmentalHealth/hazWaste.htm. Site visited November 8, 2008.

Environmental Data Resources, Inc. 2008. *The EDR Radius Map Report, Crazy Horse Canyon Road / San Juan Grade Road*. Inquiry Number 2352840.1s. EDR. Milford, Connecticut. October 30, 2008.

10.0 HYDROLOGY AND WATER QUALITY

10.1 INTRODUCTION

This chapter describes the existing hydrology and water quality resources within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent hydrology and water quality impacts associated with project construction and operation. The potential hydrology and water quality impacts from construction will be less than significant. Water quality protection measures described in Section 10.6 Applicant Proposed Measures will ensure that impacts are less-than-significant. There are no anticipated hydrology and water quality-related impacts associated with the operation and maintenance of the Crazy Horse Canyon Switching Station.

10.2 METHODOLOGY

The hydrologic setting was evaluated by performing field inspections of the project area, including nearby waterbodies, drainages, and wetlands in July 2008, July and October 2009, and March 2010; reviewing the project's *General Biological Reconnaissance and Wetland Survey Report* and *Delineation of Waters of the United States and Rapanos Analysis;* and reviewing stream and watershed information prepared by both governmental agencies and special interest groups. A study area of approximately 156 acres was surveyed for jurisdictional waters of the U.S. On July 7, 2009, an on-site meeting was held with U.S. Army Corps of Engineers representative Katerina Galacatos to discuss jurisdiction of the wetland features present at the site.

10.3 REGULATORY BACKGROUND

10.3.1 Federal and State

10.3.1.1 Section 404 of the Clean Water Act

"Waters of the U.S.," including wetlands, are subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the Clean Water Act (CWA). Section 404 regulates the filling and dredging of U.S. waters. The limits of non-tidal waters extend to the Ordinary High Water Mark, defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate signs that describe the characteristics of the surrounding areas. In general, ditches excavated on dry land that do not convey flows from historical streams are considered non-jurisdictional. However, the USACE determines jurisdiction on a case-by-case basis.

A Section 404 permit is required for construction activities involving dredging or placement of fill material into waters of the U.S. Because the proposed switching station project may require modification to two intermittent drainages and two seasonal wetlands delineated as waters of the U.S., as defined by the USACE, a Section 404 permit will be required.

10.3.1.2 Section 401 of the Clean Water Act

This section of the CWA requires a water quality certification from the state for all nationwide or individual permits issued by the USACE under Section 404 of the CWA. The Regional Water Quality Control Board (RWQCB) is the agency in charge of issuing a Section 401 water quality certification or waiver.

10.3.1.3 Section 303(d) of the Clean Water Act

Section 303(d) of the 1972 CWA requires each state to identify waters for which existing required pollution controls are insufficient to achieve that state's water quality standards and establish total maximum daily loads in accordance with a priority ranking. One 303(d) listed water (Gabilan Creek) was found south of the study area.

10.3.1.4 Streambed Alteration Agreements

Section 1602 of the California Department of Fish and Game (CDFG) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFG in which there is either an existing fish or wildlife resource or a resource from which these resources derive benefit. Project plans must be submitted to the CDFG in sufficient detail to indicate the nature of planned construction where the project would:

- divert, obstruct, or change a streambed;
- drill under a jurisdictional drainage;
- use material from the streambeds; or
- result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

The CDFG Code requires completion of formal notification and subsequent agreements prior to initiating construction activities. Because the project may require modification to two jurisdictional intermittent drainages and two jurisdictional seasonal wetlands, a Streambed Alteration Agreement may be required.

10.3.1.5 National Pollution Discharge Elimination System

Surface and groundwater quality in the project area are under the jurisdiction of the Central Coast RWQCB. The RWQCB manages the beneficial uses of water, and is one of the lead agencies (with the California Environmental Protection Agency's Department of Toxic Substance Control and the Monterey County Environmental Health Department) that oversee the remediation of hazardous material releases to soil and water. The RWQCB issues National Pollution Discharge Elimination System (NPDES) non-point source permits for discharges to waterbodies for municipalities and major industries.

Projects disturbing more than one acre of land during construction are required to file a Notice of Intent to be covered under the State NPDES General Construction Stormwater Permit for discharges of stormwater associated with construction activities. A Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented for each project covered by the

general permit. The SWPPP must include Best Management Practices (BMPs) that are designed to reduce potential impacts to surface water quality through project construction and operation.

10.4 EXISTING CONDITIONS

10.4.1 Surface Water Hydrology and Quality

10.4.1.1 Waterbodies

Gabilan Creek is the closest surface waterbody in the vicinity of the project. At its nearest point, the creek is less than 0.25 mile south of the proposed switching station site, south of San Juan Grade Road. Gabilan Creek is located in the La Natividad Grant Hydrologic Unit 18060011 and has a drainage area of 36.7 square miles. Gabilan Creek is typically dominated by intermittent flows between October and mid-May. During the summer months of an average year, the creek is very dry or experiences almost negligible flows. The natural flow of this stream is affected by small diversions, storage reservoirs, and return flow from irrigated areas. Stream discharge varies by water year, with extremes in the water years of 1972 and 1998. In 1972, the mean annual discharge was 0.00 cubic feet per second (cfs) during this drought period. The highest discharge of 239 cfs was recorded in February 1998 at the United States Geological Survey (USGS) Gauging Station 11152600 (located approximately 1.75 miles southwest of the project site) during the period of record from 1971 to the present, with an annual mean discharge of approximately 5.0 cfs.

Four intermittent drainages (two of which are USACE jurisdictional), totaling approximately 0.108 acre, were delineated within the wetland delineation study area. These features are part of a larger drainage complex that includes the seasonal wetlands described below. Surface water runoff associated with these features eventually flows offsite through the existing culvert under San Juan Grade Road into Gabilan Creek.

Intermittent drainages are typically fed by groundwater and storm water runoff, and do not convey flows during extended dry periods. Intermittent drainages are features that normally do not meet the three-parameter criteria for vegetation, hydrology and soils, but do typically convey sufficient flows to exhibit an ordinary high-water mark, a defined bed and bank, and often show signs of scouring as a result of rapid flows. Portions of the features within the study area are devoid of vegetation due to scouring while other areas are vegetated with annual grasses such as Mediterranean barley.

Three seasonal wetlands (two of which are USACE jurisdictional) totaling approximately 1.2 acres have been delineated within the wetland study area. Seasonal wetlands lack a restrictive layer such as a hardpan or claypan; therefore, the hydrologic regime in these features is dominated by long periods of saturated soil conditions rather than inundation. The plant species found growing in these features are adapted to withstand long periods of saturation, but not prolonged periods of inundation.

Given the size of the watershed that the features within the study area drain, the volume of water conveyed by the features is likely considerable during the wet season and contributes to the flow characteristics of downstream tributaries (Gabilan Creek). Within the drainage complex, the two

southernmost seasonal wetlands intercept flows from the intermittent drainages and appear to help release flows from the study area in a more consistent and even manner, and also have the ability to trap and hold sediments and other pollutants that could reach downstream navigable waters.

Gabilan Creek, two of the three seasonal wetlands, and two of the four intermittent drainages are features which meet the criteria of either federal or state waters or wetlands. During the July 7, 2009 field meeting with USACE representative Katerina Galacatos, Ms. Galacatos stated that the USACE will take jurisdiction of the subject features.

10.4.1.2 Ponds and Reservoirs

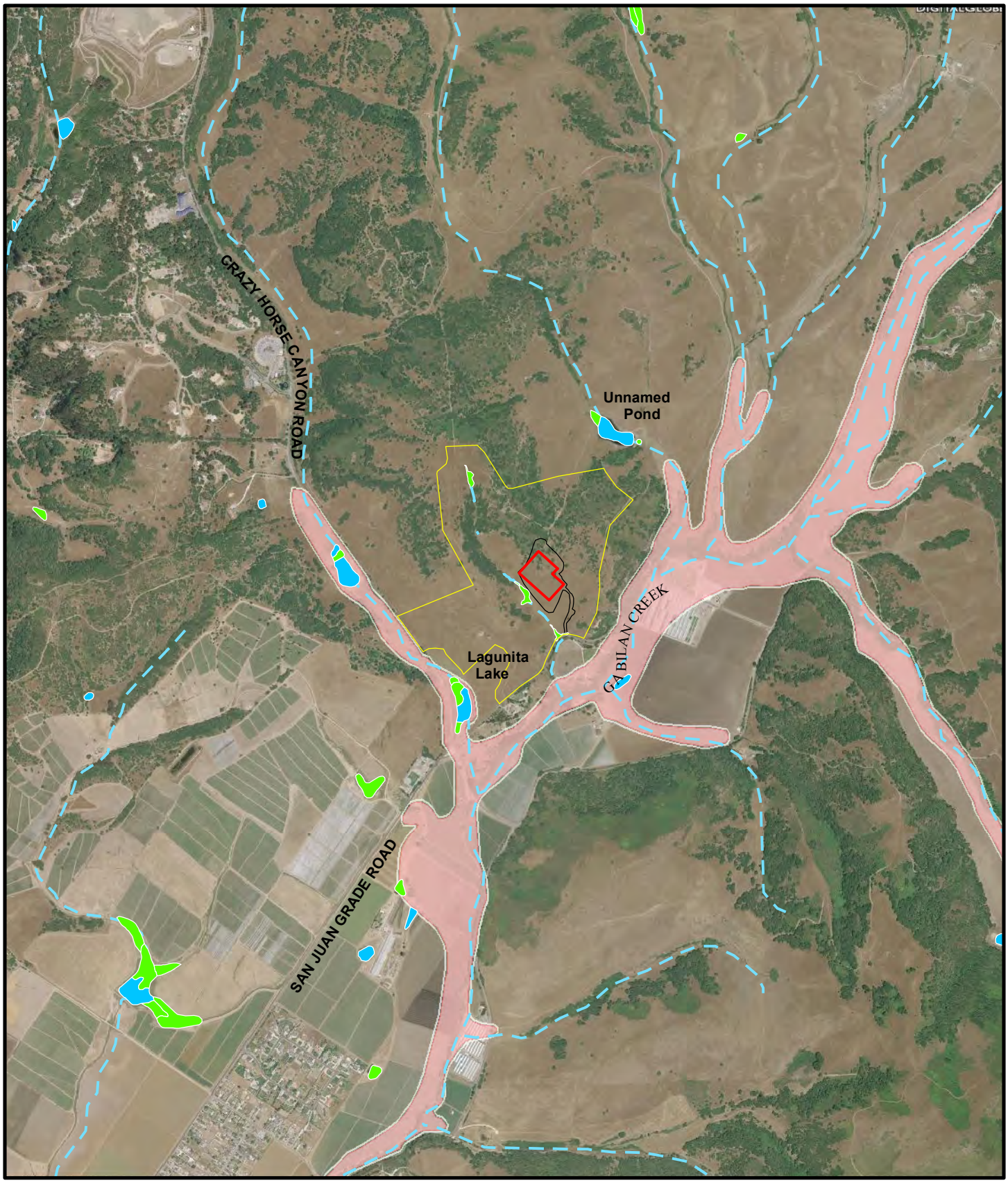
Irrigation canals are present in the agricultural fields south of the study area. Two seasonal ponds with small sections of freshwater emergent wetlands identified in the National Wetlands Index exist along the small intermittent stream running along Crazy Horse Canyon Road. One unnamed pond is located approximately 0.5 mile northeast of the proposed switching station site. There are additional small freshwater ponds in the vicinity of the study area. See Figure 10-1 for hydrologic features in and around the study area.

10.4.1.3 Surface Water Quality

The study area lies within the Gabilan watershed. The project is located uphill from Gabilan Creek and the intermittent drainages and wetlands drain into Gabilan Creek. Gabilan Creek is the largest water feature in the study area; the lower part of the creek flows into a seasonal lake (Carr Lake) in the middle of Salinas and then becomes channelized into "The Reclamation Ditch[1]" which flows into the Salinas River and then eventually into Monterey Bay.

Gabilan Creek is listed as a 303(d) water, which means that the creek does not meet the CWA's water quality standard, even after point sources of pollution have installed the minimum required levels of pollution controls. Gabilan Creek is contaminated with fecal coliform from urban runoff/storm, natural sources, and nonpoint sources. The CWA requires that the jurisdictions (states, territories and authorized tribes) establish priority rankings for waters on the 303(d) list and develop Total Maximum Daily Loads (TMDL), which are action plans to improve water quality. The Monitoring Plan for the *Agricultural Management Practices and Treatment Wetlands in the Gabilan Watershed* will help to improve water quality by reducing inputs of excessive sediment, nutrients, and pesticides primarily into waterways in the Gabilan Watershed. As discussed in Chapter 6 Biological Resources, Gabilan Creek has been designated as critical habitat for steelhead and provides habitat for other species of fish and amphibians which may include sensitive species.

[1] The Reclamation Ditch is a group of excavated earthen channels and several lakes which used to drain surface runoff generated in the watershed.



Proposed switching station
Grade and fill boundary
Wetland study area
Intermittent drainage
Seasonal wetland
Freshwater pond
FEMA ZONE A: Special Flood Hazard Area

Data Sources: TRC Solutions, US Geological Survey, US Fish and Wildlife Service, Federal Emergency Management Agency, ESRI

Figure 10-1
Hydrology
Crazy Horse Canyon Switching Station

0 500 1,000 Feet

N

Scale = 1:24,000

THIS PAGE IS INTENTIONALLY LEFT BLANK

10.4.2 Groundwater Resources and Quality

Groundwater makes up a majority of the water resources in the Salinas Valley. The California Coastal Basin Aquifer underlies the valley floor. The project is located in the Langley Area Subbasin of the Salinas Valley Groundwater Basin (Department of Water Resources [DWR] Basin No. 3-4.09), which is composed of a series of low hills. Groundwater recharge is solely from deep percolation of precipitation in the hills and small drainages of the subbasin. The soils are dominated by well-drained sandy loams and loamy sands; however, a clay pan which underlies the surface soils provides an impermeable layer resulting in very slow infiltration rates of water. The total storage capacity of this subbasin has not been determined, but as of 1980, it is estimated that approximately 356,000 acre feet of groundwater is stored in this subbasin. The groundwater quality in the Langley Area Subbasin has not been fully characterized, but in November 2000 the DWR indicated that conditions in this subbasin may be more vulnerable to groundwater contamination. Groundwater quality in the Granitic Ridge portion of the subbasin east of the project site has been affected by elevated nitrate levels in shallow aquifers.

Two groundwater wells are located within the vicinity of the project. A well from which water is withdrawn for a cattle trough is located approximately 0.25 mile north of the project. There is one groundwater well located in the vicinity of San Juan Grade Road, approximately 0.5 mile southwest of the proposed switching station site.

10.4.3 Flooding Potential

Special Flood Hazard Areas are those areas within the 100-year flood plain where the chance of flooding is 1 percent in any given year, as defined by the Federal Emergency Management Agency. The project site is not located within the 100-year flood zone or flood hazard areas (refer to Figure 10-1). The nearest 100-year flood zone, along Gabilan Creek, is less than 0.25 mile from the proposed switching station site.

No part of the Gabilan Creek watershed is located within a dam failure inundation hazard area. The elevation of the project area, the presence of San Juan Grade Road as a physical divider, and the project's overall distance from the ocean or other large waterbodies precludes potential inundation by seiche or coastal hazards, such as tsunamis, high tides, or future sea-level rise.

10.5 IMPACTS

10.5.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Impacts to hydrology and water quality may be considered significant if they result in any of the following environmental effects:

- violates any water quality standards or waste discharge requirements;

- substantially depletes groundwater supplies or interferes 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 alters 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 alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- creates or contributes runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff;
- otherwise substantially degrades water quality;
- places housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map;
- places within a 100-year flood hazard area structures that would impede or redirect flood flows;
- exposes 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; and/or
- causes inundation by seiche, tsunami, or mudflow.

10.5.2 Construction

The project will not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.

10.5.2.1 Groundwater

The project will not utilize any groundwater for construction or landscaping purposes; water will be sourced from PG&E yards in Moss Landing or Salinas. With the implementation of BMPs and Applicant Proposed Measures (APMs) as described in Section 6.6 Application Proposed Measures for Biological Resources, potential groundwater quality impacts from hazardous materials spills will be less than significant during construction. If localized shallow groundwater is encountered, dewatering systems may be installed in excavations as appropriate to allow construction under dry conditions.

10.5.2.2 Surface Water

10.5.2.2.1 Runoff (Alteration of Stormwater Patterns, Increased Runoff and Accelerated Soil Erosion)

Construction activities that expose and relocate soil have the potential to increase sediment and pollutants in stormwater runoff and increase erosion along exposed slopes and open ground. PG&E will install, monitor, and maintain appropriate erosion and sediment controls to prevent

sediment-laden runoff from reaching Gabilan Creek through the four intermittent drainages in the project area.

Because of the contours present at the site, construction of the switching station will require changing the existing site contours to establish a level pad. However, PG&E will design the facility in a way that minimizes impacts to existing drainage patterns so that any impacts will be less than significant.

Approximately 0.041 acre of intermittent drainage and approximately 0.49 acre of seasonal wetland will be temporarily affected by construction activities.

Construction of the project access road will result in permanent fill of approximately 0.048 acres of seasonal wetland #2 (refer to Figure 10-1) adjacent to San Juan Grade Road. Construction of the access road will not impact San Juan Grade Road nor the culvert underneath it and, as such, will not result in flooding or other substantial changes to drainage patterns at the site.

10.5.2.2.2 Hazardous Materials Spills

During construction, hazardous materials spills could affect surface water quality. However, with the implementation of BMPs and APMs described in Section 10.6 Applicant Proposed Measures, impacts will be less than significant.

10.5.2.3 Flooding

The project will not expose structures or land to inundation by a wave that oscillates in lakes, bays or estuaries (seiche); tsunami; or mudflow. Likewise, no houses will be constructed within a 100-year floodplain. Therefore, there will be no impacts.

10.5.3 Operations and Maintenance

10.5.3.1 Groundwater

The local groundwater basin is recharged through pervious surfaces, including those of the project site. While the majority of the proposed switching station pad will be covered with pervious gravel, PG&E will need to install some impervious surfaces, such as concrete pads, to support the switching station infrastructure. The surface of the switching station will be covered with gravel (apart from asphalt roads). The perimeters of both the switching station and the grade and fill area will be surrounded by drainage ditches arranged in a two-tiered drainage system. Three overflow outlets (spillways) lined with geofabric and angular rock will carry drainage from the switching station to the ditch around the grade and fill area. From there, drainage will flow overland towards the seasonal wetland below the switching station. Drainage from the area uphill of the site will flow into the ditch surrounding the grade and fill area and be carried south along the east side of the asphalt access road, where it will drain into a 10-foot by 10-foot by 1-foot area of rip rap prior to flowing through a 30-inch concrete pipe installed under the road. The concrete pipe will direct flow overland towards the seasonal wetland below the station. Intermittent drainage from the seasonal wetland flows through a culvert under San Juan Grade Road to Gabilan Creek. BMPS will be installed to ensure that operation and maintenance of the

facility will have no impact on groundwater quality. Furthermore, given the substantial amount of open space in the surrounding area, the net decrease in the amount of groundwater recharged to the basin will be negligible. Therefore, impacts to the groundwater supply levels as a result of an increase in impervious surfaces will be less than significant.

10.5.3.2 Surface Water

10.5.3.2.1 Erosion and Sedimentation

Runoff rates could increase due to the construction of up to 11.3 acres of semi-permeable and impermeable surface. However, stormwater runoff from the impervious portion of the proposed switching station will travel through two drainage ditches arranged in a tiered-system and will be filtered though angular rock, which will allow for additional settlement of suspended solids. Overland flows from uphill of the site will be slowed and filtered by passing through riprap prior to flowing offsite through a 30-inch concrete pipe installed under the asphalt road. Additionally, straw wattles and/or fiber rolls will be placed near the existing wetland and culvert to minimize the potential for erosion or enhanced sedimentation. As a result, impacts to surface runoff rates or existing drainage patterns will be less than significant.

10.5.3.2.2 Hazardous Materials Spills

PG&E will install landscaping in the area between the switching station fence and the perimeter of the grade and fill. Vegetation management of this landscaping can increase the amount of dissolved and particulate pollutants from fertilizer and pesticides in runoff. However, the landscaping will be designed to minimize the use of fertilizers and pesticides by selecting native plant materials appropriate to the site, soil, and climate.

During operations and maintenance activities, there is potential for hazardous materials to be released from vehicles or work equipment, such as gasoline or diesel fuel, and from solvent containers, such as paint or cleaning chemicals. PG&E has BMPs that require maintenance vehicles to carry emergency spill kits to contain and control minor spills and outline reporting procedures in case of accidental spill. PG&E will remain in compliance with state and federal laws and will implement appropriate APMs as stated in Section 10.6. The release of hazardous materials due to operation and maintenance activities will result in a less than significant impact.

10.5.3.3 Flooding

The project will not expose structures or land to inundation by a wave that oscillates in lakes, bays, or estuaries (seiche); tsunami; or mudflow. Likewise, no structures will be constructed within a 100-year floodplain. Therefore, there will be no impacts.

10.6 APPLICANT PROPOSED MEASURES

Applicant proposed measures for the intermittent drainages and seasonal wetlands are found in Chapter 6 Biological Resources. In addition, PG&E will implement the following BMPs and APMs during construction and operation of the project.

10.6.1 Construction

10.6.1.1 Environmental Training and Monitoring Program (ETMP) Development and Implementation

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

10.6.1.2 SWPPP Preparation and Implementation

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. BMPs will include:

    - 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 along the southern and western edges of the proposed switching station site to address unforeseen runoff from the property into the nearby intermittent drainages, seasonal wetlands, and Gabilan Creek;
    - 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 San Juan Grade Road;
    - establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids. Use of oil pans under stationary vehicles is strongly recommended; and

- no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or creeks. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of wetlands, culverts, or creeks will be positioned 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 at the proposed switching station site to limit the area of disturbance during construction at the site. The silt fence will be monitored regularly to ensure effectiveness.

PG&E will provide compensatory mitigation for permanent impacts to waters of the state and waters of the U.S. as required by the USACE, RWQCB, and CDFG as part of the permitting process for each agency.

10.6.2 Operation and Maintenance

The SWPPP and ETMP that will be developed and implemented during the construction phase will also cover switching station operations and maintenance activities as described above.

10.7 REFERENCES

California Department of Fish and Game. *California Natural Diversity Database*. Online: http://nrm.dfg.ca.gov/cnddb/. Site visited November 6, 2008.

California Department of Water Resources. 2003. *Groundwater Basin Map*. Online: http://www.groundwater.water.ca.gov/bulletin118/basin_maps/index.cfm. Site visited November 6, 2008.

_____. 2003. California's Groundwater Bulletin 118. Online: http://www.groundwater.water.ca.gov/bulletin118/update2003/index.cfm, Site visited November 6, 2008.

_____. 2006. 303(d) List of Impaired Waters. Online: http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r3_06_303d_reqtmdls.pdf . Site visited April 6, 2010.

Environmental Data Resources, Inc. 2008. *The EDR Radius Map Report with Geocheck, Crazy Horse Canyon Road / San Juan Grade Road*. Inquiry Number 2352840.1s. EDR. Milford, Connecticut. October 30, 2008.

Galacatos, Katerina, United States Army Corps of Engineers. On-site meeting with PG&E and TRC, July 7, 2009.

Johnson, M.J. 1983. *Groundwater in North Monterey County, California.* U.S. Geological Survey Water Resources Investigations 83-4023 32p.

Kleinfelder. 2007. *Geotechnical Investigation Proposed Crazy Horse Switching Station, Salinas California.* Report prepared for Pacific Gas and Electric Company.

Monterey County. *General Plan and General Plan Update*. 2007. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited November 6, 2008.

Monterey County Water Resources Agency, 2003. *County Floodplain Management Plan.* Online: http://www.mcwra.co.monterey.ca.us/Floodplain%20Management/Documents/Floodplain%20Management%20Plan%202003.pdf Site visited November 6, 2008.

The Watershed Institute. 2005. *The Agricultural Management Practices and Treatment Wetlands in the Gabilan Watershed: Monitoring Plan.* Site visited January 5, 2009.

TRC Solutions, 2009. *Crazy Horse Canyon Switching Station General Biological Reconnaissance and Wetland Survey Report.* Half Moon Bay, CA.

United States Department of Agriculture. 2008. *Natural Resources Conservation Service.* Online: http://SoilDataMart.nrcs.usda.gov. Site visited April 01, 2008.

United States Department of the Interior. 1985. *United States Geological Survey*. *Natividad Quadrangle*. 7.5-minute series.

_____. 2008. *United States Geological Survey*. *USGS Water Resources*. Online: http://waterdata.usgs.gov/usa/nwis/uv?site_no=11152600. Site visited November 8, 2008.

United States Fish and Wildlife Service. 2008a. *Critical Habitat Portal*. Online: http://criticalhabitat.fws.gov. Site visited November 6, 2008.

_____. 2008b. *National Wetlands Inventory.* Online: http://nwi.fws.gov. Site visited November 6, 2008.

11.0 LAND USE AND PLANNING, RECREATION, AND AGRICULTURAL RESOURCES

11.1 INTRODUCTION

This chapter describes the existing land uses, recreational facilities, and agricultural resources within Pacific Gas and Electric's Crazy Horse Canyon Switching Station Project (project) area and evaluates the potential temporary and permanent impacts to existing land uses, recreational facilities, and agricultural resources associated with project construction and operation. Impacts to land use, recreational facilities, and agricultural resources will be less than significant.

11.2 METHODOLOGY

Information relating to land use and planning, recreation, and agricultural resources was evaluated by analysis of the existing land uses, planned developments, land use designations and zoning restrictions, the *County of Monterey Draft General Plan 2007* (General Plan), the *North County Area Plan 1985*, the *Greater Salinas Area Plan 1985*, and California Department of Conservation Farmland Mapping and Monitoring Program maps and Williamson Act maps. Site inspection of the project area and analysis of aerial photographs confirmed the existing conditions of the project site and the surrounding land uses.

11.3 EXISTING CONDITIONS

11.3.1 Regulatory Background

The California Public Utilities Commission (CPUC) has exclusive jurisdiction to regulate the design, siting, installation, operation, maintenance, and repair of electric transmission facilities. Therefore, the project is not subject to local land use and zoning requirements. However, as part of the environmental review process for the project, the project's consistency with local land use ordinances, goals, and policies is evaluated.

While local governments do not have the authority to regulate the design and operation of electrical transmission facilities, the CPUC requires consultation with affected local governments to assess relevant land use concerns in locating its facilities. The CPUC also encourages consultation on other issues of concern to local governments. As a part of the initial siting of the project, Pacific Gas and Electric (PG&E) and the County of Monterey met on several occasions as early as January 24, 2008 to discuss potential concerns, and moved the proposed site of the switching station at the request of the County. The County of Monterey's Board of Supervisors has voted to support the project in its current position (see Attachment A).

11.3.1.1 Williamson Act Farmlands

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon

farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. The minimum mapping unit for a Williamson Act contract is 5 acres.

11.3.1.2 California Department of Conservation's Farmland Mapping and Monitoring Program Lands

The Farmland Mapping and Monitoring Program (FMMP) was designed by the Soil Conservation Service in 1982 as a non-regulatory system that categorizes important farmland throughout the state of California. The goal of the program is to provide maps and data to various stakeholders to assist them in making land planning decisions in regards to the best utilization of California's farmlands. The important farmland categories are prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, grazing land, urban and built-up land, other land, and water.

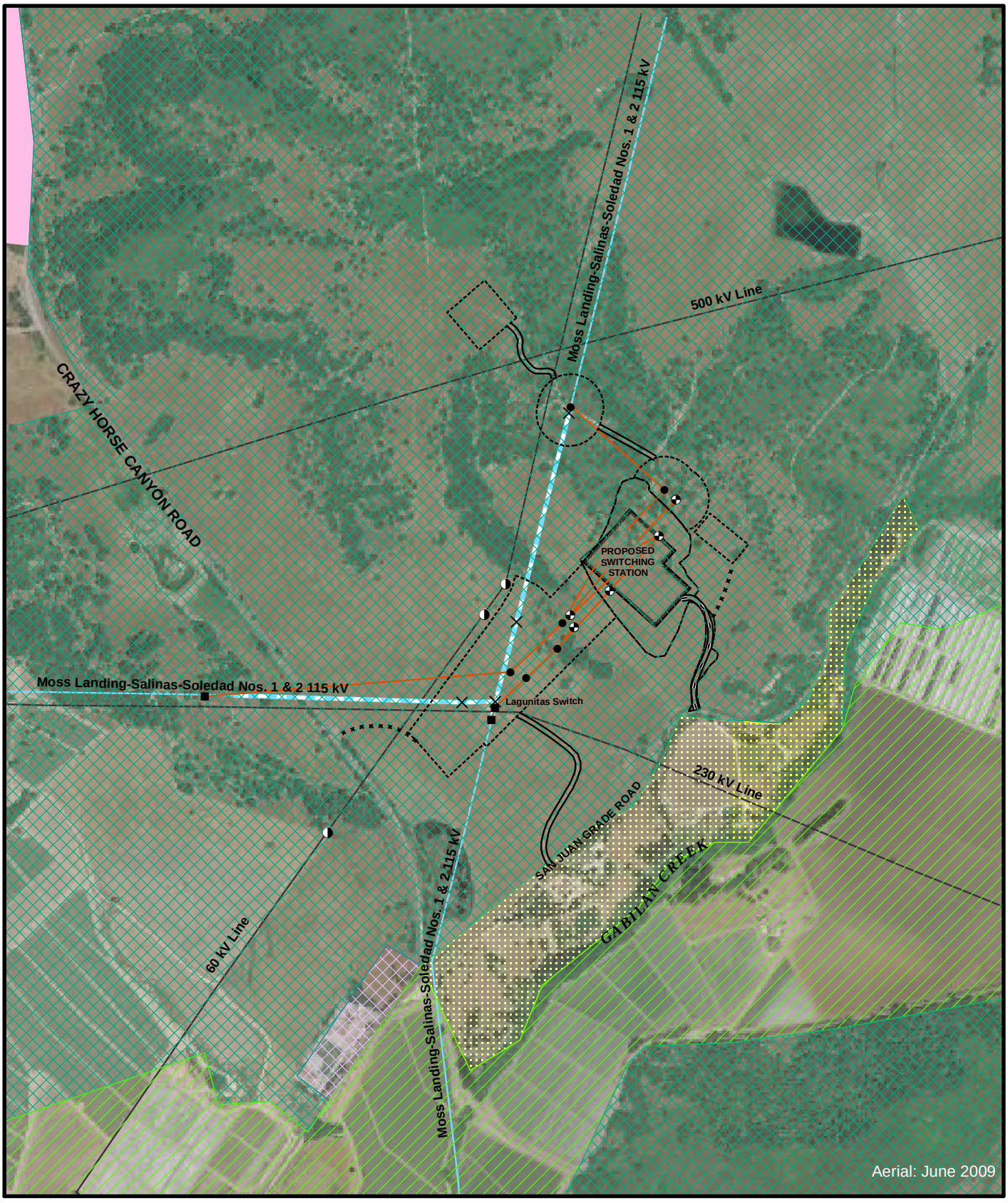
11.3.2 Zoning and Land Use Designations

The project site is located within the North County Planning Area of the General Plan, northeast of the City of Salinas in Monterey County. The Greater Salinas Planning Area begins at Old Stage Road, located approximately 0.25 mile south of San Juan Grade Road.

All of the land within the project site is zoned for agriculture and designated as permanent grazing lands in the General Plan.

Although this zoning designation is designed to protect and preserve agricultural uses, public utility structures are allowed uses on land zoned as agricultural and as permanent grazing lands with the appropriate Use Permit[1] (Chapter 21.24 and 21.34 under the Monterey County Code). All project facilities and temporary work areas are zoned as agriculture with General Plan designation of Permanent Grazing as shown in Figure 11-1: General Plan Map.

[1] However, as stated above, PG&E is not required to obtain Use Permits or other discretionary permits from local jurisdictions because of the CPUC's exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of electric transmission facilities.



- Existing tower
- Existing to be removed
- New tower location
- Existing wood pole(s)
- New TSP location
- Reconfigured power lines
- Moss Landing-Salinas-Soledad 115 kV power line
- Existing power line to be removed
- Existing transmission or power line
- Existing access road
- New access road
- Temporary Access Road
- Proposed switching station
- Grade and fill boundary
- Work site
- Public/Quasi-Public
- Residential - Low density
- Permanent grazing
- Farmlands
- Industrial

Figure 11-1
General Plan Map
Crazy Horse Canyon Switching Station

PG&E

0 250 500 Feet

N

Scale = 1:10,000

THIS PAGE IS INTENTIONALLY LEFT BLANK

[BACK OF FIGURE 11-1]

11.3.3 Existing Land Use

The proposed switching station, located approximately 0.5 mile north of the intersection of Crazy Horse Canyon Road and San Juan Grade Road, is located behind a hill, with both Crazy Horse Canyon Road and San Juan Grade Road located at the base of the hill. The project site is also near where the Moss Landing-Salinas-Soledad 115 kV Power Lines come from Moss Landing Power Plant and split to go north and south, making it an ideal location for the required facilities. Existing land uses in the vicinity of the project site are summarized in Table 11-1: Existing Land Uses. Agricultural grazing is the only land use in and immediately adjacent to the project area. Low density residential housing is located less than 0.25 mile south of the project area. The closest residences are on the south side of San Juan Grade Road, east of Crazy Horse Canyon Road. Lagunita School is located on the west side of San Juan Grade Road, approximately 300 feet south of Crazy Horse Canyon Road.

Crazy Horse Canyon Road and San Juan Grade Road are designated as proposed scenic highways and routes in the Monterey County General Plan. Additionally, San Juan Grade Road is part of the National Park Service (NPS) 1,210-mile Juan Bautista de Anza National Historic Trail from Nogales, Arizona to San Francisco, California. A historic marker, situated on the south side of San Juan Grade Road at the Crazy Horse Canyon Road intersection, denotes the 1846 Battle of the Natividad, a revolt of Californians against American military occupation. A roadside pullout located at the intersection provides an opportunity for motorists to stop and view this historic plaque.

Old Stage Coach Road is designated as a very scenic and visually sensitive road. The visual sensitivity designation includes the lands adjacent to and east of Old Stage Road.

11.3.4 Agriculture

The dominant land use in the North County Planning Area (Planning Area) is agriculture, totaling 50,000 acres, representing about 69 percent of the Planning Area. Most large tracts of farmland are located on the northern and southern perimeters of the Planning Area in the Pajaro Valley, the Springfield area north of Moss Landing, and on lands near Castroville, south of State Highway 156. Large expanses of grazing land are located in the Planning Area's southeastern section, east of Highway 101 and extending into the Gabilan Mountains.

The project site is located on agricultural lands subject to a Williamson Act contract. However, facilities approved by the CPUC are considered an acceptable use consistent with the requirements of Government Code Section 51290 et. seq. The land on the project site is not designated as prime farmland, farmland of statewide importance, or as unique farmland as defined by the California Department of Conservation’s FMMP. However, it is designated as grazing land, which the FMMP defines as land on which the existing vegetation is suited to the grazing of livestock.

Table 11-1: Existing Land Uses

Site	Existing Land Uses
Switching Station Site	• Agricultural land • Existing 115 kilovolt (kV) power lines traverse the area near the site in a north, south, east and west direction
Access road	• Agricultural land
Pulling sites	• Agricultural land
Tie-in sites	• Agricultural land
Within 0.25 mile of the project site	• Agricultural land • Low-density residential housing • San Juan Grade Road • Old Stage Road • Gabilan Creek
Within 0.5 mile of the project site	• Agricultural land • Low-density residential housing • Rural residential • Agricultural Industrial • School • Battle of Natividad (historic landmark) • Crazy Horse Canyon Road • Lagunita Lake
Within 1 mile of the project site	• Commercial • Light Industrial
Within 1.5 miles of the project site	• Low Density Residential • Medium Density Residential • Agricultural Residential

Source: Site visit and review of maps and aerial photographs, 2008, the Monterey County General Plan, and the North County Area Plan

11.3.5 Recreation

Throughout the Planning area, recreation opportunities are offered at state beaches, county parks, and special district parks. The North County Plan states that 1,166 acres of the planning area is used for recreational and/or cultural activities. There are three state beaches in North County totaling approximately 480 acres – all are located over 10 miles from the project area. The nearest county park is Manzanita Regional Park, which is approximately 4.25 miles to the northwest of the project site.

The project site is not located on any land used, or proposed, for recreation.

11.3.6 Land Use Policies

County zoning ordinances in the project area concern viewsheds and preservation of oak trees. The switching station site falls within the viewshed of San Juan Grade Road and Old Stage Road. The existing and proposed towers can also be seen from Crazy Horse Canyon Road. San Juan Grade Road has been proposed by the County as a scenic route and its viewshed is currently considered a significant visual resource by the County. Supplemental policy to the General Plan, 40.1.1.2 (GS), found in the Greater Salinas Area Plan, states that measures should be implemented to maintain the scenic preservation of Old Stage Road. Additionally, the ridgelines of hills within Monterey County are considered sensitive visual resources as designated by the County of Monterey. A proposed general plan update would further codify existing procedures of assessing the visual impacts of projects in the viewsheds of scenic highways, roads, and common viewing areas, and would also require any proposed development that cannot be sited outside the public viewing area to have mitigation measures identified and approved.

San Juan Grade Road is also part of a historic trail, the Juan Bautista de Anza National Historic Trail, as designated by the National Park Service. The Historic Preservation Section of the Monterey County General Plan and Chapter 18.25 Preservation of Historic Resources in the County of Monterey Code state measures to protect, enhance, perpetuate and use historical resources.

Removal of oak trees at the project site will be required. Monterey County zoning ordinance outlines special regulations regarding the preservation of oak and other specified protected trees. However, exceptions are granted for "tree removal pursuant to Public Utilities Commission General Order 95 or by governmental agencies within public rights of way" (Monterey County Zoning Ordinance, 21.64.260.F.2).

There are no adopted habitat conservation plans (HCPs) or natural communities conservation plans (NCCPs) within the areas covered by the 2007 General Plan (September 2008 Draft Environmental Impact Report for Monterey County 2007 General Plan).

11.4 IMPACTS

11.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts to land use may be considered significant if they result in any of the following environmental effects:

- physically divide an established community;
- 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; or
- conflict with an applicable habitat conservation plan or natural community conservation plan.

Recreational impacts may be considered significant if they result in any of the following environmental effects:

- 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; or
- include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Agricultural resources impacts may be considered significant if they result in any of the following environmental effects:

- 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;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

11.4.2 Construction

11.4.2.1 Land Use

Construction of the project will not physically divide an established community by creating a permanent barrier that impedes pedestrian or vehicle access to community features or services. Construction does not conflict with the General Plan nor does it conflict with any existing habitat or natural community conservation plans, as no such plans are located in the project area. While project construction will temporarily alter both the Crazy Horse Canyon Road and San Juan Grade Road viewsheds, impacts are expected to be minor. Visual and aesthetic impact analysis and applicant proposed measures (APMs) are discussed in Chapter 4: Aesthetics. Impacts are also expected to be minor on the historical aspect of San Juan Grade Road. The cultural resources analysis and applicant proposed measures are provided in Chapter 7: Cultural Resources. Additional APMs for trees are discussed in Chapter 6: Biological Resources. Therefore, less than significant impacts to land use are anticipated as a result of construction activities.

11.4.2.2 Recreation

No temporary impacts to recreation will result from construction activities. The project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of these facilities will occur or be accelerated. Project facilities are not located near any existing parks or other recreational facilities.

11.4.2.3 Agriculture

During construction of the proposed switching station, there will be a temporary loss of grazing use of the construction work area only during the active construction period. Following construction, the work areas, excluding the fenced switching station, will be returned to grazing

use. Consequently, this impact will be temporary and of short duration; and therefore, less than significant.

11.4.3 Operations and Maintenance

Facilities approved by the CPUC are considered an acceptable use of contracted Williamson Act lands consistent with the requirements of Government Code Section 51290 et. seq. Of the approximately 1,210,900 acres of agricultural land in Monterey County, the proposed switching station project will result in the permanent loss of 11.3 acres and the temporary loss of 25 acres of FMMP-designated grazing land. Therefore, operation of the project will have a less–than-significant impact on agricultural lands.

While the project will slightly alter both the Crazy Horse Canyon Road and San Juan Grade Road viewsheds, impacts are expected to be minor. Visual and aesthetic impact analysis and APMs are discussed in Chapter 4: Aesthetics. Impacts are also expected to be minor on the historical aspect of San Juan Grade Road. The cultural resources analysis and APMs are provided in Chapter 7: Cultural Resources. Additional APMs for trees are discussed in Chapter 6: Biological Resources. Therefore, less than significant impacts to land use are anticipated as a result of project operation.

Operations and maintenance personnel will visit the project site periodically for routine inspection and maintenance procedures. This infrequent activity, which is currently occurring for the existing facilities, will have no impact on land use.

Operation of the project will have no impact on recreational resources.

11.5 APPLICANT PROPOSED MEASURES

No significant impacts to land use, recreational, or agricultural resources will occur as a result of the construction or operation of the project. Therefore, no applicant proposed measures will be necessary.

Visual and aesthetic applicant proposed measures are discussed in Chapter 4: Aesthetics.

Tree removal applicant proposed measures are discussed in Chapter 6: Biological Resources.

11.6 REFERENCES

California Department of Conservation, Division of Land Resource Protection. *Williamson Act Data.* Online: ftp://ftp.consrv.ca.gov/pub/dlrp/WA/. Site visited April 01, 2008.

California Public Utilities Commission (CPUC). General Order No. 131-D, *Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California*. 1995.

Monterey County. *Monterey County Environmental Impact Report*. Online: http://www.co.monterey.ca.us/gpu/reports/Draft%20General%20Plan.htm. 2004.

Monterey County. *General Plan and General Plan Update*. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited November 17, 2008

Monterey County. *Greater Salinas Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/GSAP.complete. Site visited November 11, 2009.

Monterey County. *North County Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/landuse.htm. Site visited November 24, 2008.

12.0 NOISE

12.1 INTRODUCTION

This chapter describes the existing temporary and permanent noise and vibration within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent noise-related impacts associated with project construction and operation. The potential noise impacts from construction will be less than significant. Noise reduction measures described in Section 12.5 Applicant Proposed Measures (APMs) will further reduce already less-than-significant impacts. There are no anticipated noise-related impacts associated with the operation and maintenance of the Crazy Horse Canyon Switching Station.

12.1.1 Fundamentals of Environmental Noise

Noise, defined as unwanted sound, is measured in several ways depending on the source of the noise, the receiver, and the reason for the noise measurement.[1] The most common noise metric is the logarithmic decibel (dB) scale referenced to the minimum threshold pressure for audibility (20 micro pascal). A sound level obtained by using an A-weighting filter of a sound level meter, measured in A-weighted decibel (dBA), deemphasizes the very low and very high frequencies of sound, similar to how a human perceives or hears sound; thus, achieving a strong correlation in terms of how to evaluate acceptable and unacceptable sound levels. A change of 3 dBA is equal to a doubling of sound pressure. A change of 10 dBA represents a 10 times change in sound pressure but is perceived as doubling sound. Five dBA would be perceived as a noticeable change in sound level.

One metric used to determine the existing noise conditions of a community is the equivalent sound level (L_{eq}), defined as the sound level containing the same total energy as a time varying signal over a given sample period. Therefore, the L_{eq} is a single value level that expresses the time-averaged total energy of a fluctuating sound level. Another metric used in determining noise conditions is the difference in response that people have to daytime and nighttime noise levels. During the evening and at night, exterior background noises are generally lower than daytime levels. Additionally, most household noise decreases at night and most people sleep at night; consequently, exterior noise becomes more noticeable and people may be more sensitive to unwanted sound. To account for human sensitivity to evening and nighttime noise levels, the day-night sound level (L_{dn}) and the community noise equivalent level (CNEL) were developed. The L_{dn} is the equivalent energy sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 9:00 p.m. and before 7:00 a.m. The CNEL is the equivalent energy sound level during a 24–hour day, obtained after the addition of five decibels to sound levels in the evening from 7:00 p.m. to 9:00 p.m. and 10 decibels to sound levels in the night before 7:00 a.m. and after 9:00 p.m. The CNEL is generally computed for annual average conditions.

[1] Acoustical terms are summarized in the Glossary and Acronyms Section of this report.

12.2 METHODOLOGY

This evaluation of potential noise and vibration impacts involved reviewing relevant noise standards and policies, characterizing the existing noise environment of the area, and projecting the effects of noise source levels from construction, operation, and maintenance activities. Noise monitoring was conducted in the project area to accurately represent the area's ambient noise environment. The significance of potential impacts was assessed based on applicable noise regulations, projected changes in the ambient noise environment, and California Environmental Quality Act (CEQA) significance criteria.

Following the characterization of the anticipated project area noise environment, published data on equipment noise characteristics and construction-related noise were used to determine likely construction-related impacts. Construction impacts were assessed by comparing the published noise levels for construction equipment and activities to the ambient noise environment and significance criteria.

12.3 EXISTING CONDITIONS

12.3.1 Regulatory Background

Noise impacts within a project area are generally managed and evaluated based on local plans, policies, and ordinances. The California Public Utility Commission (CPUC) has primary jurisdiction over the project by virtue of its approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over utility projects, such projects are exempt from local land-use and zoning regulations and permitting. The following analysis of local noise standards and policies is provided for informational purposes and to assist with CEQA review.

The County of Monterey Planning and Building Inspection Department (September 2008), Section 4.8, titled "Noise," contains Table 4.8-2 outlining Monterey County noise standards. For passively-used open spaces, a normally acceptable noise range is 50 dBA Ldn or CNEL. A conditionally acceptable noise range of 50-55 dBA is allowed. For low-density, single-family dwellings, the normally acceptable level is 50-55 dBA, and 60-70 dBA is conditionally acceptable. For schools, libraries, churches or hospitals, a normally acceptable range is 50-60 dBA, and 60-70 dBA is conditionally acceptable.

Section 10.60.030 of the Monterey County Municipal Code limits the operation of noise producing devices. This ordinance states, "No person shall, within the unincorporated limits of the County of Monterey, operate any machine, mechanism, device or contrivance which produces a noise level exceeding eighty-five (85) dBA measured fifty (50) feet there from. The prohibition in this section shall not apply to aircraft nor to any such machine, mechanism, device or contrivance which is operated in excess of two thousand five hundred (2,500) feet from any occupied dwelling unit."

12.3.2 Existing Noise Levels

The project site is located approximately 0.5 mile northeast of the intersection of Crazy Horse Canyon Road and San Juan Grade Road. The current use of this property is active pasture land. Existing PG&E transmission lines pass through the project location. The closest occupied buildings are Lagunita School, approximately 2,900 feet south of the project location on San Juan Grade Road and a single family residence approximately 1,200 feet south of project location also on San Juan Grade Road. Noise measurements were taken at four locations at representative sites to gauge current noise levels. These noise measurements recorded within the project corridor are described below.

12.3.2.1 Measurement of Existing Sound Levels

Sound level measurements were taken at four locations as shown in Figure 12-1, during a seven day period between February 3, 2010 and February 8, 2010. Sound level measurements were made using Larson Davis Model 820 Integrating Sound Level meters. All noise levels are reported in A-Weighted decibels measured to the reference sound pressure (20 micro Pascal) with the sound level meter set at "slow" response. Handheld measurements were also taken at the time the integrating meters were deployed.

Monitoring results are summarized in Table 12-1.

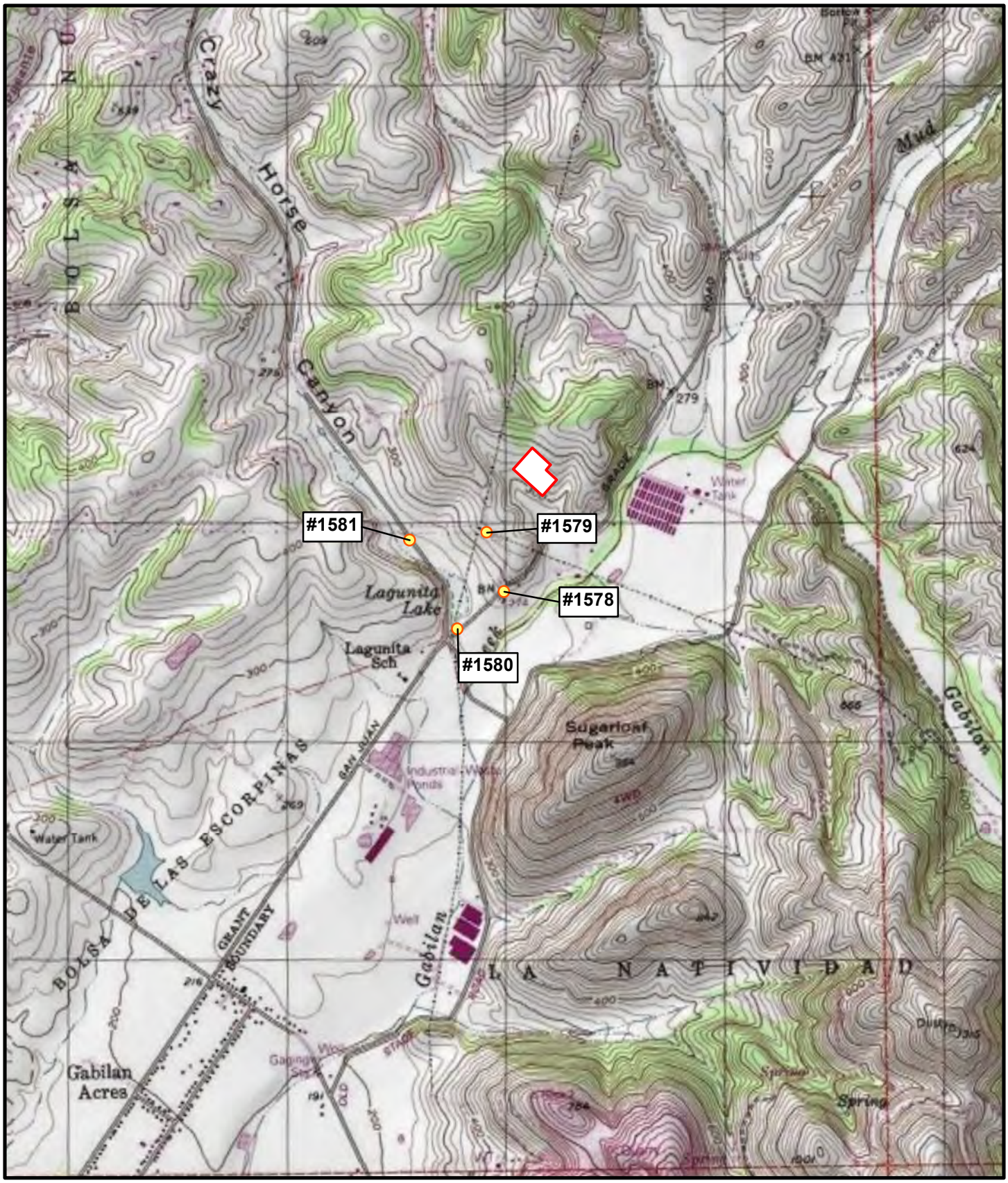
Meters #1578, 1580 and 1581 showed reasonable sound levels. These meters were located on rural roads and show typical patterns consistent with road noise during high traffic times. There is a school close by, a landfill and other large agricultural sites. Meter #1579, which was located near the project site, showed the highest recorded sound levels. Figure 12-2 is a plot of each of the four meters with recorded wind speed during this time frame. On February 4, 2010 between 1900 and 2000 hours, wind speeds in excess of 30 mph were recorded (wind speed data from Salinas, California).

The relevant character of the sound environment of the area as it relates to the facility operation is measured most accurately by the L_{90} metric. This is the sound level exceeded 90 percent of the time during the sound sample, which is not only commonly considered the "best" metric for the constant noise state of a location, but is also fully characteristic of the sound emitted by a normal substation. The Crazy Horse Canyon Switching Station should produce virtually no noise as it will contain no transformer banks or reactor banks – the typical noise producing equipment. The L_{90} noise level for the site should be taken as about 40 dBA (39.9 dBA at point 3). The data from location 2 should be considered the anomalous result of high wind action through the tower structure at that location.

Table 12-1: Summary of Long- and Short-Term Sound Level Measurement Data

Site No.	Location	Date	(Decibels A-Weighted (dBA))				
			L_{eq}	L_{10}	L_{50}	L_{90}	L_{dn}
LT-1	Meter #1578- at PG&E pole #771 at driveway of 1048-1050 San Juan Grade Road	2/3-2/8/2010	42.6	53.3	41.2	32.4	57.3
LT-2	Meter #1579-installed at transmission tower near project site	2/3-2/8/2010	66.8	71.0	56.5	46.0	73.5
LT-3	Meter #1580- at intersection of Crazy Horse Canyon Road and San Juan Grade Road	2/3-2/8/2010	51.7	56.7	48.5	39.9	59.7
LT-4	Meter #1581- at Pole #7, approx. 1,606 ft north on Crazy Horse Canyon Road	2/3-2/8/2010	58.3	70.7	49.4	29.5	69.8

Note: Meteorological conditions during the monitoring period included severe wind conditions with gusts up to 38 miles per hour (mph)



Noise meter

Proposed switching station

Figure 12-1
Noise Data Collection Stations
Crazy Horse Canyon Switching Station

PG&E

0 500 1,000 Feet

N

Scale = 1:24,000

THIS PAGE IS INTENTIONALLY LEFT BLANK

[BACK OF FIGURE 12-1]

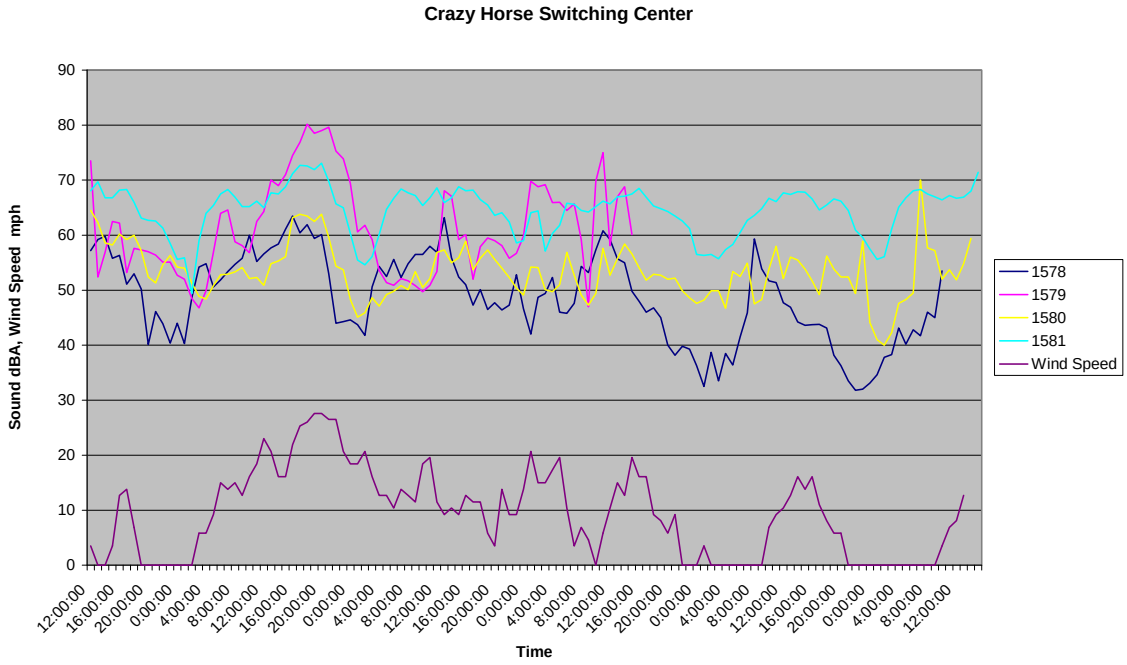


Figure 12-2
Sound Meters and Wind Speed
Crazy Horse Canyon Switching Station Project

12.3.2.2 Identification of Sensitive Receptors

Sensitive receptors include residential areas, hospitals, schools, performance spaces, businesses, and religious congregations. Sensitive receptors within the project vicinity were identified based on a review of geographic databases, aerial photos, and vehicle surveys.

Agriculture is the dominant land use in the project area. A school is located on the west side of San Juan Grade Road, approximately 350 feet south of the intersection of Crazy Horse Canyon Road and San Juan Grade Road, and approximately 2,900 feet south of the switching station. The closest residence is on the south side of San Juan Grade Road, approximately 1,300 feet south of the switching station.

12.4 IMPACTS

The project would include temporary increases in noise associated with construction with no permanent modification of ambient noise levels. As such, operational noise is considered an area of no effect. Project construction activities are not expected to produce significant ground vibration.

12.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Impacts to noise levels may be considered significant if they result in any of the following environmental effects:

- 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;
- exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- a substantial temporary increase or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

12.4.2 Construction

The severity or degree of noise impacts resulting from construction is influenced by the noise level generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive receptors. The following analysis considers the types and uses of equipment proposed for project construction, duration of use, setting in which the equipment is used, and applicable thresholds presented above.

12.4.2.1 Noise

Construction of the project will require a variety of equipment, as detailed in Table 1-1 in Chapter 1.0: Project Description. The majority of the construction activities will take place in open space and agricultural areas. Construction activities near residential areas will generally be limited to daytime hours (between 7:00 a.m. and 7:00 p.m.). In some cases, exceptions to this timeframe may be required for safety considerations, operation of generators as emergency power back-up contingencies, or certain construction procedures that cannot be interrupted; however, such conditions are not anticipated during this project.

Tables 12-2 and 12-3 show typical and maximum noise levels generated by construction equipment at a distance of 50 feet from the source. The highest maximum noise levels generated by project construction would typically range from about 90 to 94 dBA at a distance of 50 feet from the noise source. Typical hourly average construction generated noise levels are about 75 to 85 dBA measured at a distance of 50 feet from the center of the site during busy construction periods. Noise levels described above would be expected when construction occurs in the immediate vicinity of receivers along the project corridor. Construction-generated noise levels drop off at a minimum rate of 6 dBA per doubling of distance between the source and receptor. Shielding provided by buildings or terrain results in lower construction noise levels at distant receptors. Construction noise levels could, at times, exceed 65 dBA L_{eq} at nearby receivers.

Assuming a scenario under which multiple pieces of the loudest equipment are used, reasonable upper-bound noise levels (based on distance to nearest receptor) due to construction activities were predicted using methods recommended by the Federal Transit Administration (FTA) 2006 Guidelines. Table 12-4 summarizes the results of this analysis.

12.4.2.1.1 Helicopter Noise

Installation of the sock line will require the use of a helicopter. Noise from the helicopter will be audible at the various tower sites, the helicopter landing zone, and along flights paths. The helicopter will be used to pull a sock line (a small cable used to pull in the conductor) from tower to tower.

Helicopter noise levels during takeoff, approach, and level flyover are identified in Table 12-3. Helicopter operations will be brief and temporary, over a few days between the hours of 7:00 a.m. and 5:30 p.m. Tower sites requiring helicopter usage are located approximately 1,200 feet away from residential areas; and therefore no impacts are anticipated.

Table 12-2: Construction Equipment Types and Typical Noise Emission Levels

Equipment	Typical Noise Level 50 Feet from Source (dBA)
Backhoe	78
Concrete mixer truck[1]	76
Crane	81
Pick-up truck	55
Dump truck	76
Equipment/tool van[2]	55
Dozer	82
Water truck[1]	76
Grader	85
Rock transport[1]	76
Roller	80
Hole auger	84
Line truck and trailer[2]	55

Source: Federal Highway Administration (FHA), 2006.
[1] Based on noise level for dump truck
[2] Based on noise level for pick-up truck

Table 12-3: Construction Equipment Noise

Type of Construction Equipment	Maximum Level, dBA at 50 feet		
Cranes (Truck mounted)	75-86		
Truck mounted auger	79 -84		
Trucks	82-94		
Generators	71-82		
Pneumatic tools	85		
Compressors	74-86		
Helicopter	Take-Off[1]	Approach[1]	Level Flyover[2]
	85	88	86

Source: National Cooperative Highway Research Program, 1999; FHWA, 2006; and True, 1977.
[1] Takeoff and landing measured at 150 meters (492 feet) to the side of the approach and departure path, assuming a 6 degree approach and departure flight path and the helicopter is at 120 meters (394 feet) from the surface. As per procedure outlined in Appendix H to 14 Code of Federal Regulations part 36.
[2] Fly over measured at 150 meters (492 feet).

Table 12-4: **Predicted Construction-Related Noise Levels in Project Vicinity**

Distance Between Source and Receiver (feet)	Geometric Attenuation (dBA)	Ground Effect Attenuation (dBA)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	89	85
100	-6	-2	81	77
200	-12	-4	74	70
300	-16	-5	69	65
400	-18	-6	66	62
500	-20	-6	63	59
600	-22	-7	61	57
700	-23	-7	59	55
800	-24	-7	58	54
900	-25	-8	56	52
1000	-26	-8	55	51
1200	-28	-9	53	49
1400	-29	-9	51	47
1600	-30	-9	50	46
1800	-31	-10	49	45
2000	-32	-10	47	43
2500	-34	-10	45	41
3000	-36	-11	43	39

Note: Calculations based on FTA 2006 Guidelines. This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers that may further reduce sound levels.

Given residential areas are approximately 1,200 feet south of the project area, a maximum L_{eq} of 49 dBA should result from construction activities. This is within the allowable range for daytime noise for a residential area. Therefore, project construction impacts will be less than significant.

12.4.2.2 Vibration

Given a 1,200-foot distance to the nearest sensitive receptor, the medium-duty nature of the construction of a switching station, the project will produce less-than-significant vibration-related impacts.

12.5 APPLICANT PROPOSED MEASURES

12.5.1 Construction

While impacts associated with construction of the substation and reconductoring will be less than significant, PG&E will employ the following noise-reducing construction practices in an effort to further reduce noise produced by construction activities:

- "Quiet" equipment (i.e., equipment that incorporates noise-control elements into the design—compressors have "quiet" models) will be used during construction whenever possible.

- PG&E will limit construction to the hours between 7 a.m. and 7 p.m., Monday through Saturday, to the extent feasible. If nighttime work is needed because of clearance restrictions on the power line, PG&E will take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.

- PG&E will encourage construction crews to limit unnecessary engine idling (see Section 5.5 Applicant Proposed Measures in Chapter 5: Air Quality.)

12.5.2 Operations and Maintenance

Impacts from operations and maintenance will be less than significant and no mitigation is required.

12.6 REFERENCES

CEQA Guidelines, Appendix G, Environmental Checklist Form.

Draft Environmental Impact Report Monterey County 2007 General: Impacts/Noise Section 4.8 Monterey County Code of Ordinances, Title 10, Health and Safety.

FHWA. 2006. Roadway Construction Noise Model – FHWA-HEP-05-054, DOT-UNTSC-FHWA-05-01.

National Cooperative Highway Research Program (NCHRP). 1999. Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances. National Academy Press, Washington, DC.

True, Rickley and Letty. 1977. Helicopter Noise Measurements – Data Report. Report No. FAA-RD-77-57, 2 Volumes.

13.0 POPULATION AND HOUSING, PUBLIC SERVICES, AND UTILITIES AND SERVICE SYSTEMS

13.1 INTRODUCTION

This chapter describes the existing conditions of population and housing, public services, and utilities and service systems within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent population and housing, public services, and utilities and service systems related impacts associated with project construction and operation. No significant impacts to population and housing, public services, and utilities will result from the project; therefore, no applicant proposed measures are proposed. There are no anticipated population and housing, public services, or utilities and service systems impacts associated with the operation and maintenance of the Crazy Horse Canyon Switching Station.

13.2 METHODOLOGY

Demographic and economic data were obtained from literature searches and statistical reports from the United States Census Bureau. Public services, utilities and service systems data were obtained from searches of local government websites, other local service informational resources, and personal communications with local public service providers.

13.3 EXISTING CONDITIONS

This section describes the existing population and housing, public services, and utilities and service systems conditions in the project area from the latest available reliable data.

13.3.1 Population and Housing

13.3.1.1 Population

According to state projections from the U.S. Census Bureau, California's population as a whole is projected to increase by approximately 30 percent in the next two decades. Monterey County's growth is expected to increase at approximately 36 percent during this period. The growth within the city limits of Salinas is expected to be approximately 7 percent over the next 20 years. The slower growth rate in Salinas is due to the high median home prices compared to average per capita income in the area. According to the 2008 numbers, Salinas has actually lost population (approximately 6,000 residents) since the 2000 census. Table 13-1 shows historical, current, and projected populations for Monterey County and the City of Salinas.

Table 13-1: Total Population

Geographic Region	2000	2005	2020 Projections
Monterey County	401,762	410,206	545,600
City of Salinas	151,060	145,032	162,234

Source: U.S. Census Bureau 2008

13.3.1.2 Housing

Table 13-2 depicts the total housing units and vacancy rates for both Monterey County and the City of Salinas. The 2007 estimated number of housing units in Monterey County was 138,740 with a vacancy rate of 10.9 percent, while the estimated number of housing units in the City of Salinas was 42,868 with a vacancy rate of approximately 8.5 percent. The estimated number of available housing units in the year 2020 is slated to be 48,550 within the City of Salinas.

The City of Salinas houses 13 hotels/motels within its city limits and there are four additional hotels/motels nearby, outside the city limits. Salinas also houses two bed and breakfasts within its city limits.

Table 13-2: Total Housing Units and Vacancy Rates (2007)

Geographic Region	Total Housing Units	Vacancy Rate (%)
Monterey County	138,740	10.9
City of Salinas	42,868	8.5

Source: U.S. Census Bureau 2008

13.3.2 Public Services

13.3.2.1 Fire Protection Services

There are a total of 22 fire districts or departments with jurisdiction within Monterey County. The nearest county department to the project site is the North County Fire Protection District, located in the neighboring town of Castroville approximately 9.0 miles from the project site. While North County Fire Protection District holds jurisdiction over the project site and serves as the primary firehouse for the project site, mutual aid may be offered or supplied by the City of Salinas Fire Department, the nearest station being approximately 5.0 miles from the project site.

13.3.2.2 Police Protection Services

The Monterey County Sheriff's office has 3 district patrol stations: the Central Patrol Station, the Coastal Patrol Station, and the South County Patrol station. The project site is in the service area of the Central Patrol Station, located in downtown Salinas and approximately 5.5 miles from the project site. The Central Patrol's area covers over 1,400 square miles and is divided into five patrol zones, extending south to the City of Gonzales, west to Monterey and north to the county lines adjoining Santa Cruz and San Benito counties. These patrol areas contain agricultural, industrial, residential, recreational and undeveloped rural areas.

13.3.2.3 Schools

The Salinas education system is comprised of 7 school districts with a total of 56 public schools and 9 private schools. The Lagunita Elementary School is closest to the project area and houses 82 students and five full time teachers. The school is approximately 1,584 feet from the project site.

13.3.2.4 Hospitals

Salinas Valley Memorial Hospital and Natividad Medical Center, two of the County's four hospitals, are located within the City of Salinas. Salinas offers skilled nursing and convalescent homes, as well as residential retirement facilities for seniors, and over 200 practicing physicians. There are a total of 416 beds available at the two County Salinas hospitals. Monterey County's other two hospitals are located in the City of Monterey and King City. Natividad Hospital is the nearest to the project site, at a distance of approximately 6.0 miles and is equipped with emergency services.

13.3.2.5 Parks

Information and effects to parks are discussed in Chapter 12.

13.3.3 Local Utilities and Service Systems

13.3.3.1 Utilities

Electricity and gas service in Monterey County is provided by PG&E. This project is being proposed to increase electric reliability and delivery to PG&E customers in the Monterey County area. Telephone service is provided by AT&T and cable television service is provided by Comcast.

13.3.3.2 Water and Sewer

The nearby city of Salinas is served by two investor-owned water utilities regulated by the California Public Utilities Commission; Alco Water Service and California Water Service. Most water is supplied through deep wells within and nearby the City of Salinas. Salt water intrusion to these wells has been a concern. The city of Salinas operates its own separate storm water and sewage systems. Since these municipal systems do not extend into the project area, water is

provided by individual wells and septic tanks handle sewage. There is no storm water system serving the project site.

13.3.3.3 Garbage Services

There are 3 landfills within the Monterey County, the nearest to the project site being the Crazy Horse landfill approximately 1.5 miles NW of the project area. It is currently estimated that this landfill has a total capacity of 2.7 million cubic yards with approximately 38 percent capacity remaining.

Collection and disposal of refuse services for Salinas and the project site are provided by BFI Waste Services of Salinas. The Salinas Valley Solid Waste Authority is a joint powers agency comprised of the following local governments: Monterey County (eastern half of the unincorporated county), and the cities of Gonzales, Greenfield, King City, Salinas, and Soledad.

13.4 IMPACTS

13.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Impacts to noise levels may be considered significant if they result in any of the following environmental effects.

13.4.1.1 Population and Housing

Project impacts to population, housing and employment are considered significant if they:

- induce substantial population growth in the project area, either directly (by proposing new homes and businesses) or indirectly (through extension of roads or other infrastructure);
- displace a large number of existing residences, requiring replacement housing to be constructed elsewhere; or
- displace a substantial number of people, necessitating the construction of replacement housing elsewhere.

13.4.1.2 Public Services

Impacts to public services may be considered significant if they result in the need for new or altered government services, such as fire and police protection, schools, parks or other public facilities.

13.4.1.3 Utilities and Service Systems

Impacts to utilities and service systems are considered significant if they:

- exceed wastewater treatment requirements of the Regional Water Quality Control Board;

- result in the need for new or altered water or wastewater treatment facilities or drainage facilities;
- result in the need for construction of new stormwater drainage facilities;
- result in the need for a new or expanded water supply;
- result in the extension of a sewer trunk line with capacity to serve new development;
- result in inadequate access to a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- cause a breach of published national, state, or local standards relating to solid waste.

13.4.2 Construction

This section describes the potential impacts to population and housing, public services and utilities and service systems during the project construction.

13.4.2.1 Population and Housing

The project will not displace existing residences or businesses because the switching station will be built on a site that is currently undeveloped pasture land and the transmission line construction work will occur entirely within this undeveloped land. Construction of the project will not displace adjacent residences or businesses because none exist on the undeveloped switching station site, within existing transmission line rights-of-way, or temporary work areas. Therefore, there will be no displacement of residents as a result of construction. PG&E anticipates a maximum workforce of 20 people during the height of construction.

Construction of the project will not increase the need for workers or for additional housing units in the area. The project will be constructed by a maximum of 20 PG&E crew members from the local workforce that will commute to the project site from the general vicinity.

The project is being implemented to increase the reliability of the existing electrical system in existing developed and urban area. The project is not being implemented in advance of growth but, rather, in response to growth and development in the north Monterey County area. PG&E is legally required to provide services as development is approved through the local planning process. No significant impacts to population and housing will occur.

13.4.2.2 Public Services

The project will neither increase demand for nor alter the level of local public services required because there will be no increase to the local population. No additional need for government or public services will be required because of the project. The local fire and law enforcement departments and the hospital in the area are well equipped to handle any emergencies that may occur in the vicinity of the project. As a result, there will be no impacts to these public services.

No emergency service providers or hospitals are located on the primary route to the project site or on associated roadways, and all streets will remain open to emergency vehicles. As a result, project traffic will not affect emergency response times and there will be no impacts to emergency service providers.

The project will not affect school enrollment since the project is expected to be constructed by local PG&E workers who are already established in the area and will commute to the project site. Thus, no new schools will be necessary as a result of the project.

13.4.2.3 Utilities and Service Systems

Project construction will not result, either directly or indirectly, in new or expanded development requiring new municipal drainage or storm water facilities. Thus, no new drainage facilities will be needed, and no wastewater treatment requirements will be exceeded. Construction activities will not increase the demand for public water supply because sufficient sources of water will be available from off-site portable sources. There will be no impact to natural gas services, phone communications, garbage services, or landfills during construction. As a result, there will be no construction impacts on utilities and service systems.

13.4.3 Operations and Maintenance

This section describes potential impacts to population and housing, public services and utilities and service systems associated with the operation and maintenance of the project.

13.4.3.1 Population and Housing

Operation and maintenance of the project will not require any new employees or on-site staff. Periodic maintenance work will be conducted by PG&E staff already located in the area. The project is being constructed to increase the reliability of electrical services in the area and will not foster additional population growth nor displace existing residences or people. Therefore, there will be no impact on population and housing.

13.4.3.2 Public Services

Operation and maintenance of the project will not increase the need for schools, parks, hospitals or other public facilities because the local population will not increase as a result of the project.

The project is accessible by emergency vehicles. Regular maintenance personnel and vehicles will park within the switching station or along the station access road and will not block the public right-of-way or otherwise interfere with emergency vehicle access. In the event of an unlikely emergency situation, fire and police services are located within approximately 5.0 miles and 5.5 miles of the project, respectively. Providing infrequent emergency services to the un-manned site will not affect law enforcement or fire departments existing capabilities or response times. Therefore, there will be no impact to public services.

13.4.3.3 Utilities and Service Systems

Because the project is being implemented to increase the existing electric transmission system's reliability, operation and implementation of the project will result in a net benefit to the electrical service provided in the area. The project will not have permanent restroom facilities or on-site staff requiring water or generating wastewater. On-site stormwater will be managed consistent with the Spill Prevention, Control and Countermeasures Plan (SPCC Plan) and the Storm Water

Pollution Prevention Plan (SWPPP) (refer to Chapter 10.0 Hydrology and Water Quality for a further discussion of the SWPPP).

13.5 APPLICANT PROPOSED MEASURES

No significant impacts to population and housing, public services, and utilities will result from the project; therefore, no applicant proposed measures are proposed.

13.6 REFERENCES

California Integrated Waste Management Board. *Jurisdiction Landfill Overview*. Online: http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=27&FACID=27-AA-0007. Site visited November 6, 2008.

City of Salinas: *Fire Department.* Online: http://www.ci.salinas.ca.us/services/fire/fire.cfm. Site visited November 6, 2008.

City of Salinas: *Police Department.* Online: http://www.ci.salinas.ca.us/services/police/police.cfm. Site visited November 6, 2008.

City of Salinas*: Visitors Community Profile*. Online: http://www.ci.salinas.ca.us/residents/utilities.cfm. Site visited November 6, 2008.

Simply Hired: *Local Jobs: Salinas, California.* Online: http://www.simplyhired.com/a/local-jobs/city/l-Salinas,+CA. Site Visited November 6, 2008.

U.S. Census Bureau: *State and County Quick Facts*, Online: http://quickfacts.census.gov/qfd/states/06/0664224.html. Site visited November 6, 2008.

14.0 TRANSPORTATION AND TRAFFIC

14.1 INTRODUCTION

This chapter describes the existing transportation and traffic conditions within Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project area and evaluates the potential temporary and permanent transportation and traffic-related impacts associated with project construction and operation. The potential transportation and traffic impacts from construction will be less than significant. Construction and operation of the project will not result in significant impacts to transportation or traffic. Therefore, applicant proposed measures are not required.

14.2 METHODOLOGY

Traffic and transportation data were obtained from literature review, internet research, and communications with agency staff. The general plans, regional transportation plans, and municipal codes for Monterey and San Benito Counties and the cities of Salinas, San Juan Bautista, and Prunedale were reviewed for transportation plans, policies, and programs.

14.3 EXISTING CONDITIONS

14.3.1 Regulatory and Planning Background

There are no municipal codes or other policies applicable to this project.

14.3.2 Roadways and Highways

The Association of Monterey Bay Area Government's 2005 Master Transportation Plan (Plan) provides an assessment of the level of service (LOS) on roads within its jurisdiction. LOS is based on traffic congestion, which is measured by dividing traffic volume by roadway capacity. The resulting number, known as the volume-to-capacity ratio, is divided into six LOS categories, A through F, which represent conditions ranging from unrestricted traffic flow (A) to extreme traffic congestion (F). According to the Plan, the segment of Highway 101 from north Salinas to the San Benito County line commonly experiences a LOS of E or F during peak hours. It also points out that, as congestion increases on state highways, traffic begins to increase on parallel arterial routes, and that the existing LOS can be expected to be adversely impacted through the year 2020.

The project site is 3.7 miles to the east of the segment of Highway 101 that has an LOS of E or F. San Juan Grade Road and Crazy Horse Canyon Road are both paved public roads that provide parallel arterial routes to Highway 101. San Juan Grade Road and Crazy Horse Canyon Road are also proposed by Monterey County as scenic routes according to the North County Area Plan, 1985. Refer to Figure 1-1 Project Overview Map in Chapter 1 Project Description for a depiction of the roadways in the project vicinity.

Table 14-1: Roadways in the Project Vicinity

Roadway	Lanes	Classification	Average Daily Traffic Volume	Peak-Hour Level of Service (LOS)
San Juan Grade Road	2	Minor Arterial	4,945	D
Highway 101	4	Freeway	57,903	E-F
Crazy Horse Canyon Road	2	Minor Arterial	4,749	No Data

Source: City of Salinas Traffic Improvement Program Final Report, TAMC

14.3.3 Bus Service

Monterey Salinas Transit provides transit services to the entirety of Monterey County. County Express serves the City of Hollister, in San Benito County. There are no bus routes or stops within 0.25 mile of the project. Highway 101 is the only roadway that will be used by the project that serves as a transit route.

14.3.4 Commuter Rail

There is no commuter rail service in Monterey County.

14.3.5 Bikeways

Both San Juan Grade Road and Crazy Horse Canyon Road are designated as proposed bike lane roads. A bike lane is proposed for San Juan Grade Road and has been given a medium level of priority by the Transportation Agency for Monterey County (TAMC) in its 2005 General Bikeways Plan. A dedicated bike lane is planned for Crazy Horse Canyon Road but has a low priority according to TAMC (TAMC 2005). There are no officially designated bikeways in the project vicinity.

14.3.6 Air Traffic

There are no aviation facilities within two miles of the project.

Helicopter landing and access for the project will be conducted from Salinas Municipal Airport or directly from the vender's home base. The helicopter will be staged and fueled at the 2.0-acre pull site, located northwest of the new tower location 0/4, and used over a period of a few days. The hours of operation will be between 7:00 a.m. and 5:30 p.m., and the flight path will occur between the staging area (landing zone) and various towers, following tower lines within the project area. Pacific Gas & Electric Company’s helicopter safety procedures will be implemented during construction operations at all times.

14.4 IMPACTS

14.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Impacts to transportation and traffic may be considered significant if they result in any of the following environmental effects:

- result in an impact to existing traffic flows, including a substantial increase in traffic;
- exceed an established LOS standard;
- cause a change in air traffic patterns;
- result in a substantial increase in hazards due to design features or incompatible uses;
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation.

14.4.2 Construction

14.4.2.1 Increase in Traffic and Traffic Flow Disruption

Impacts to traffic will be limited to use of existing highways/roadways to and from the project site by construction workers, equipment and material delivery.

Crazy Horse Canyon Road and San Juan Grade Road are arterials that are not currently highly affected by traffic in the project area. San Juan Grade Road has an LOS grade of D for the stretch of the road leading towards the project site and both roads in this area have less than 5,000 average daily trips (TAMC 2008). It is expected that during construction there will be a maximum of 20 workers on site during construction and each will take two trips per day, to and from the project site. This traffic demand created by worker trips and associated equipment deliveries and hauling trips represents less than one percent of the daily average traffic volume on the roadways that will be affected by project construction and, thus, will be an insignificant increase in traffic on these roadways. Though the stretch of Highway 101 in the vicinity of the project is poorly rated with respect to congestion, additional traffic related to the project will not be of a volume to significantly affect LOS ratios. In addition, these slight increases in traffic will be temporary and short-term. The project will not require temporary road or lane closures. As a result, impacts to traffic will be less than significant.

14.4.2.2 Change in Air Traffic Patterns

No airports or heliports are located within two miles of the project area where existing air traffic patterns could be affected. Construction helicopter operations will be brief and temporary and are not anticipated to result in permanent changes to air traffic patterns. As a result, the potential impacts to air traffic patterns will be less than significant.

14.4.2.3 Parking Lot and Lane Closures

There are no public parking lots within two miles of the switching station site, and no lane closures that could affect public parking along the streets will be required to complete the

project. Construction personnel will park in designated areas that will not affect public parking capacity. As a result, construction will not affect public parking capacity.

14.4.2.4 Hazards

The intersection of the proposed switching station access road and San Juan Grade Road is on a blind curve. PG&E will work with Monterey County to install cautionary traffic signs on this road and implement traffic control measures required by the County in its Encroachment Permit to ensure construction traffic entering and leaving San Juan Grade Road does not create a hazard to motorists. PG&E met with Monterey County to discuss this intersection. Public works did not express any concerns that cannot be addressed through standard traffic control measures prescribed in their encroachment permit. As a result, impacts to existing traffic on San Juan Grade Road during project construction will be less than significant.

14.4.2.5 Emergency Access

There are no emergency response plan staging areas or exit routes in the project vicinity, so the project will not impact emergency response activities.

14.4.2.6 Public and Alternative Transportation

Highway 101 is a public bus route but there are no bus stops on the highway itself. There are no other public transit routes on any other roads that will be used for project access.

Public rail service is more than seven miles from the project site and will not be affected by project construction.

No officially-designated public bike facilities run along or intersect roadways that will be used to access the project site. The proposed bike lanes vary in priority from medium to low and are not being actively funded at this time, nor does Monterey County anticipate they would be implemented prior to or during the construction of the project. Therefore, there will be no impacts to public and alternative transportation.

14.4.2.7 Conflicts with Policies, Plans or Programs

Construction will occur on PG&E-owned property and will not conflict with transportation policies, plans, or programs. PG&E will obtain ministerial encroachment permits to conduct work in public rights-of-way, as necessary. The project will not conflict with any policies supporting alternative transportation. The project will involve construction in the viewsheds of San Juan Grade Road and Crazy Horse Canyon road. Both roads have been proposed as designated scenic routes by Monterey County. Potential impacts and applicant proposed measures related to the viewsheds are discussed in Chapter 4.0 Aesthetics.

14.4.3 Operations and Maintenance

Operation, including maintenance of switching station facilities and the access road, will not result in significant impacts to transportation and traffic in the project area. The switching station

will be unmanned, with automated features and remote control capabilities, and will only require PG&E maintenance personnel to visit approximately once a month. Therefore, operations and maintenance at the switching station will not create an impact on transportation and traffic. Power line operation and maintenance will not change from that of the existing power lines.

14.5 APPLICANT PROPOSED MEASURES

Construction and operation of the project will not result in significant impacts to transportation or traffic. Therefore, applicant proposed measures are not required.

14.6 REFERENCES

Association of Monterey Bay Area Governments. 2005. *2005 Monterey Bay Metropolitan Transportation Plan.* Online: http://www.ambag.org/publications/reports/MTP.html. Site visited November 2, 2008.

Chen, Kaki, Transportation Agency of Monterey County Transportation Planner. Email communication with O. Puryear, TRC January 6, 2010. 831-775-4413.

City of Salinas. 2005. *Traffic Improvement Program*. Online: http://www.ci.salinas.ca.us/documents.cfm. Site visited November 9, 2008.

County of Monterey. *General Plan and General Plan Update*. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited May 01, 2008.

_____. *North County Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/landuse.htm. Site visited November 19, 2009.

Monterey-Salinas Transit. 2009. *MST: System Maps*. Online: http://www.mst.org/maps/index.htm. Site visited November 9, 2008.

Palomino, Robert. Monterey County Public Works Encroachment Inspector. Meeting with Cristina Holstine, Steve Gallo, and Michael Lighstone, PG&E. March 16, 2010.

Transportation Agency for Monterey County. 2005. *2005 TAMC General Bikeways Plan*. Online: http://www.tamcmonterey.org/programs/bikeped/pdf/2005_TAMC_BikewaysPlan_correction.pdf. Site visited November 18, 2009.

_____. 2008. *TAMC: Traffic Counts*. Online: http://www.tamcmonterey.org/trafficcounts/index.html. Site visited November 18, 2009.

15.0 GROWTH-INDUCING AND CUMULATIVE IMPACTS

15.1 INTRODUCTION

This chapter describes the potential for growth-inducing and cumulative impacts that could result from Pacific Gas and Electric Company's Crazy Horse Canyon Switching Station Project. The California Environmental Quality Act (CEQA) requires a discussion of whether the project will foster economic or population growth, either directly or indirectly, in the surrounding environment, including projects that could remove obstacles to growth. CEQA and California Public Utilities Commission (CPUC) Rule 17.1 also require a discussion of any cumulative effects when the project is added to other closely related past, present and probable future projects. As explained further below, although the project will increase electrical service reliability in the surrounding area, implementation of the project will not result in any significant growth-inducing or cumulative environmental impacts.

15.2 GROWTH-INDUCING IMPACTS

15.2.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Individual or cumulative growth-inducing impacts may be considered significant if they result in any of the following environmental effects:

- the project, either directly or indirectly, fosters economic or population growth, or removes obstacles to growth in the area;
- the project provides new employment;
- the project provides access to previously inaccessible areas or extends public services to previously unserved areas;
- the project burdens existing community services; or
- the project causes development elsewhere.

15.2.2 Economic or Population Growth

Electrical transmission infrastructure in the region is expected to experience increasing demand due to increased population growth in the region. According to state projections from the United States Census Bureau, California's population as a whole is projected to increase by approximately 30 percent in the next two decades. Monterey County's growth is expected to increase nearly 33 percent. The growth within the city limits of Salinas is expected to be somewhat less; the population in 2006 was estimated to be approximately 145,032 and is expected to rise about 18 percent over the next 20 years.

The project is being implemented to improve electric service reliability and increase operational flexibility for the central and northern areas of Monterey County and northern San Benito County. The switching station will allow PG&E to quickly detect power outages, and efficiently adjust the system's operating parameters in order to restore service in a timely manner. This project will not add additional capacity to the system or directly or indirectly foster growth or

remove obstacles to economic or population growth in the area. While an improvement in reliability could potentially attract additional residents and businesses, this effect will be minimal since there will not be any additional capacity to support significant growth.

15.2.3 New Employment

The project will provide short-term construction employment but no permanent employment. A maximum of 20 construction workers will be at the construction site during peak construction. PG&E will draw primarily from its existing labor force in the Monterey Bay Area, with some local, non-PG&E contract laborers. The limited, temporary nature of this employment will not result in long-term growth in this area.

15.2.4 Extended Access or Public Services

The project will not require extension of public services and PG&E currently provides electric service to the project area. The project will require an access road for construction and operation. The road will be maintained by PG&E and will not be accessible to the public.

15.2.5 Existing Community Services

The project will not burden community services. The switching station will not require water, wastewater, or permanent solid waste services**,** and its demand for County-provided services, such as road improvements, law enforcement, and fire protection, will be negligible (refer to Chapter 13 Population and Housing, Public Services, and Utilities and Service Systems).

15.2.6 New Development

The project will not promote new development, either in the project area or elsewhere, because the project is not designed or directed at increasing capacity in the system to support additional development. The project will satisfy PG&E's statutory obligation to provide reliable power to the ratepayers served by these lines. While new developments will benefit from this increased reliability, it will not create an impetus for additional developments to be initiated as a result of the project.

15.3 CUMULATIVE IMPACTS

To determine the potential for cumulative impacts, the General Plans of the City of Salinas and Counties of Monterey and San Benito, and respective planning department staffs were consulted and/or contacted to determine if approved or proposed projects will occur in the same timeframe and location as the project. City planning department staff continually reviews and updates the list of potential projects for which development applications have been submitted. Four projects are currently being planned within the vicinity of the proposed switching station, three of which are PG&E projects (see Table 15-1). It is unclear whether, and how much, construction of these projects will overlap.

Table 15-1: Planned and Current Projects in the Vicinity of the Project

Project Name	Address	Proximity to Project (approx.)	Type of Development	Description	Size (approx.)	Status[1]	Anticipated Construction Schedule
Butterfly Village	Rancho San Juan	1.8 miles	Planned Community	1,077 homes, commercial space, golf course, parks, sewage treatment plant	671 acres	A	Unknown
PG&E Hollister 115 kilovolt (kV) Power Line Reconductoring Project	Monterey and San Benito Counties	Extends northerly from Crazy Horse Canyon Switching Station Project location	Utility	Replacing conductors on two segments of the 115 kV electric power line system near Hollister and San Juan Bautista	16 miles	A	2011
PG&E Watsonville Voltage Conversion Project	Monterey and San Benito Counties	Power line to be routed through Crazy Horse Canyon Switching Station Project location	Utility	Convert Watsonville-Salinas 60 kV power line to 115 kV	28 miles	F	Unknown; likely 2013-2014, depending on project planning and permitting

Project Name	Address	Proximity to Project (approx.)	Type of Development	Description	Size (approx.)	Status[1]	Anticipated Construction Schedule
Moss Landing – Salinas – Soledad Avian Retrofit Project	Monterey County	Work begins north of Crazy Horse Canyon Switching Station Project location and ends in Soledad	Utility	Avian retrofit of the Moss Landing-Salinas-Soledad 115 kV lines; replace insulators from Prunedale to Soledad	45 miles	C	Under construction. Anticipated completion summer 2010.

[1]Status:

F CAISO has approved the project, project planning will be initiated soon, and a future PTC application is anticipated

C The project is under construction

A The project is pending in the formal application review process

The Rancho San Juan Specific Plan outlines the development of approximately 671 acres of land located approximately 2 miles southwest of the proposed switching station site (see Figure 15-1). The project is planned for homes, commercial space, a golf course, parks, and a sewage treatment facility. While an application is on file for this development, the anticipated construction schedule is unknown. As part of the construction planning for the project, PG&E will coordinate with Monterey County on this and any other projects that will occur in the timeframe and in the vicinity of the project to address potential concerns about localized traffic on roads used in common by the projects.

The PG&E projects are projects that would mainly involve installation of new insulators, conductors and other line infrastructure. One of the projects, the Moss Landing – Salinas – Soledad Avian Retrofit Project, is already under construction with anticipated completion in 2010. The Hollister 115 kV Power Line Reconductoring Project is several months ahead of the proposed project in permitting, and its construction would likely occur at least partially in the same timeframe as the proposed project. The Watsonville Voltage Conversion Project is in the beginning planning stages, and is likely to occur after construction of the proposed project.

15.3.1 Significance Criteria

Consistent with CEQA Guidelines (Section 15130), a project has a significant cumulative impact if a change in the environment results from the incremental impacts of the project when added to other closely related past, present, and probable future projects. Cumulative impacts could result from individually minor, but collectively significant, projects taking place over a period of time.

15.3.2 Analysis of Cumulative Impacts

This section analyzes whether the project, when combined with other proposed projects in the area, will result in either short-term or long-term environmental impacts. Short-term impacts are those related primarily to project construction, and long-term impacts are those related primarily to permanent project features or operation of the project. In the region, short-term construction impacts could include increased traffic, air emissions, noise, and impacts to hydrology and water quality. Short-term construction-related impacts are not typically considered significant under CEQA. Long-term impacts could include those related to visual and biological resources.

15.3.2.1 Aesthetics

The viewshed that is being affected by the proposed project is not planned for development in the foreseeable future. In addition, the viewshed being altered by the proposed project already contains a number of steel towers and associated power lines. As such, the additional towers and steel poles erected as part of the project will not significantly alter the character of the viewshed or the landscape composition. The additional PG&E projects presented in Table 15-1 would be similar in having less than significant impacts on existing aesthetic resources as they are all projects that involve retrofits and upgrades of existing lines that would not cause additional impacts to the character of the viewshed or landscape composition. The land surrounding the project area is likely to remain active agricultural land for the foreseeable future with little to no change in its visual characteristic as a result of or independent of the project. In the region, there

is a trend towards increased development that will likely change viewsheds significantly as agricultural and natural land is converted into developed residential, commercial, and industrial areas. The project will not be enabling development within the viewshed either locally or within the region and, as such, there will be no cumulative or growth-inducing impacts to aesthetic resources. In addition, regulatory restrictions to changes in the viewshed will limit the potential for large scale changes in the project area.

15.3.2.2 Air Quality

Air emissions will result from construction of the project and the access road. As discussed in Chapter 5 Air Quality, the pollutants of concern during construction of this project are fugitive dust (PM_{10}) and greenhouse gas (GHG) emissions. The worst-case scenario for total project emissions (including PM_{10}, reactive organic gas, carbon monoxide, nitrogen oxides, sulfur dioxide, and GHG) will be less than significant with the implementation of construction mitigation measures identified in the Monterey Bay Unified Air Pollution Control District CEQA Guidelines and applicant-proposed measures (APMs) as described in detail in Chapter 5 Air Quality. The contributions for switching station construction are one percent or less for all pollutant categories, which is very small when compared to the total emissions in Monterey County. This amount, even when combined with other projects that could be under construction within the same timeframe, will not be cumulatively considerable.

There are negligible long-term air emissions associated with the operation of the switching station. Since the switching station is unmanned, there will be no vehicular emissions associated with regular commuting to and from the site. Therefore, no cumulatively considerable contribution to cumulative air quality impacts will result.

15.3.2.3 Biological Resources

With the implementation of the APMs identified in Chapter 6 Biological Resources, the proposed project will contribute a less than significant cumulative impact to biological resources. Construction of the proposed project will result in the permanent removal of non-native grassland, coastal scrub, northern mixed chaparral, coast live oak woodland, seasonal wetland and intermittent drainage habitat; however, the amount of habitat removed will be compensated for through the conservation and preservation of existing habitat near the project site. There is also established habitat located north and east of the site that can be utilized by wildlife. In addition, the proposed project will not induce or facilitate additional development causing additional habitat removal, nor is it being developed as part of a large plan of development that would remove habitat. Therefore, it will not represent a cumulative or growth-inducing impact.

Approximately 30 oak trees will be removed as a result of construction activities. The proposed project's contribution to any cumulative impact on the removal of oak trees will be less than significant with implementation of the APMs found in Chapter 6 Biological Resources.

Aquatic habitats (Gabilan Creek) could be affected if hazardous materials inadvertently spill into them. Implementation of the APMs discussed in Chapter 6 Biological Resources and Chapter 10

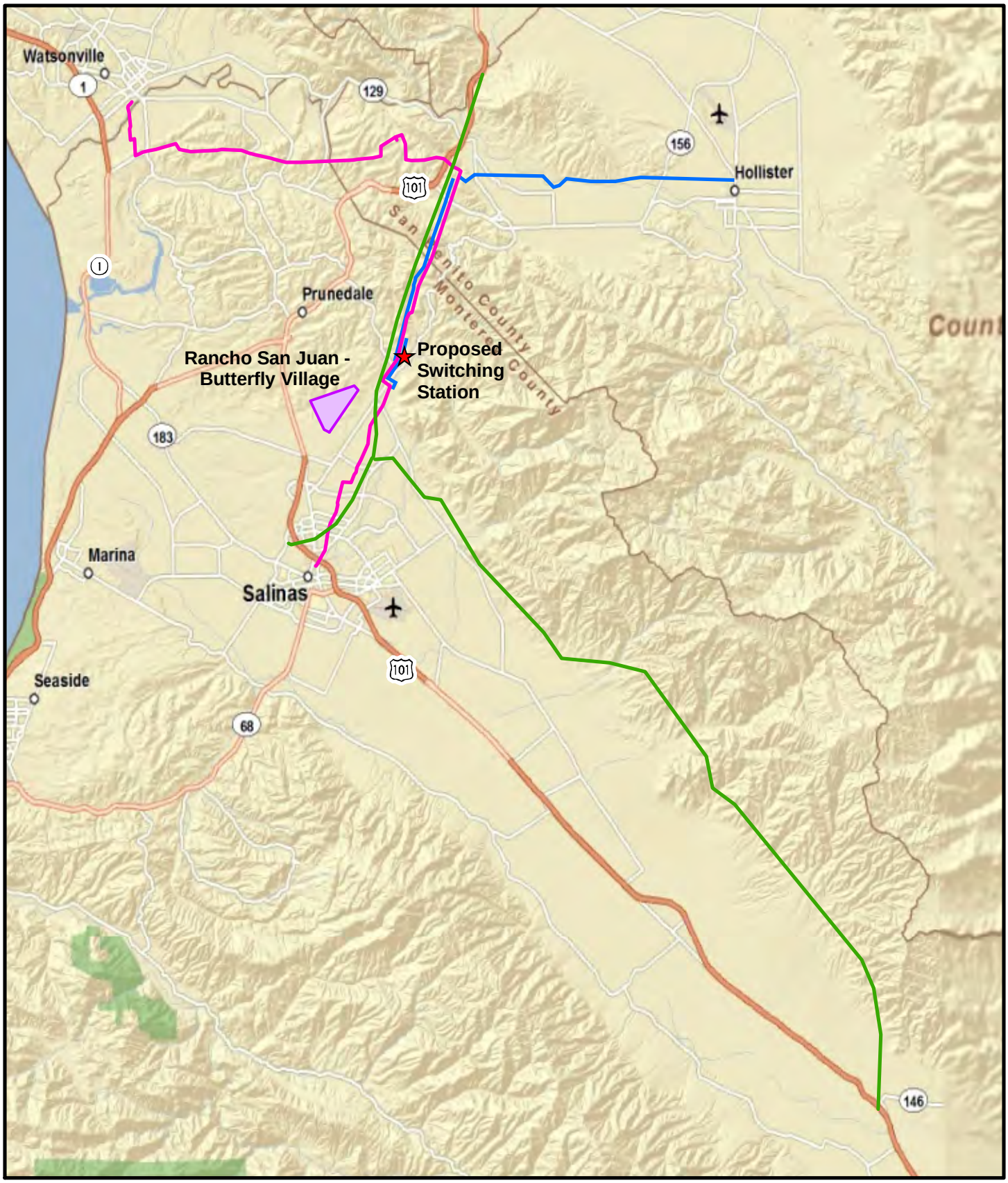


Figure 15-1
Planned Projects
Crazy Horse Canyon Switching Station

THIS PAGE IS INTENTIONALLY LEFT BLANK

Hydrology and Water Quality will minimize any disturbance caused by the construction and operation of the switching station and protect nearby aquatic habitats and their functions. Other projects planned and under construction will be subject to similar restrictions. Therefore, potential cumulative impacts on the aquatic habitats from construction and operation of the proposed project will be less than significant.

15.3.2.4 Hydrology and Water Quality

Any construction within the Rancho San Juan Specific Plan and any other future development projects in the area will be required to comply with National Pollutant Discharge Elimination System regulations governing stormwater discharges, which will require the use of Best Management Practices (BMPs) during construction and the implementation of stormwater controls during operation. These BMPs will control and reduce contaminants in stormwater runoff to levels acceptable to the Regional Water Quality Control Board.

With the implementation of the APMs discussed in Chapter 10 Hydrology and Water Quality, the construction and operation of the switching station will not adversely impact hydrology or water quality in the project area or contribute to a significant cumulative impact.

Cumulative impacts to the hydrology of the project area will also be less than significant. While the project will partially impact a wetland that eventually drains into Gabilan creek, the area surrounding the project is sparsely developed and there are only four planned projects in the vicinity of the project area. All of these projects would employ BMPs to limit their potential impacts to hydrology and water quality. As such, a cumulative effect on the hydrologic stability of the creeks and wetlands in the area will not occur as a result of the construction of the switching station.

15.3.2.5 Noise

As discussed in Chapter 12 Noise, construction and operation of the project will not result in any potentially significant noise impacts. Temporary noise will likely affect nearby residents during construction of the switching station and access road. The construction noise from earthmoving equipment, trucks, and cranes could occasionally be audible at 0.4 mile from the site, but with the implementation of APMs as described in Chapter 12 Noise, these noise levels constitute a less than significant impact. The nearest residence to the project site is 0.4 mile away, and PG&E projects in the vicinity have been identified as preceding, coinciding with, or following the construction of the facilities. However, these noise impacts will be similar in nature to noise impacts related to the operation of agricultural machinery and will also be brought to within a less-than-significant level with the adoption of APMs similar to those for the proposed project as outlined in Chapter 12 Noise. There will be no cumulative impacts from noise levels during operation of the switching station as the area is sparsely developed with no sensitive receptors in the immediate vicinity and there will be virtually no noise generated by the operating equipment at the switching station.

15.3.2.6 Transportation and Traffic

Construction and operation of the project will not result in any potentially significant transportation or traffic impacts. Use of local roads for transport of equipment and personnel will be a temporary impact during construction and will be managed through the encouragement of carpooling recommended in Chapter 5 Air Quality, and materials will be staged on site.

Taken into consideration with other potential development in the project area, the incremental contribution to traffic from construction and operation of the switching station will not constitute a significant cumulative impact. The public roads that will be used to access the project site during potential maintenance activities are moderately impacted with respect to traffic but additional trips necessitated by construction will not permanently increase traffic and will represent an insignificant increase to the daily trip volume on the roads. Additionally, any maintenance trips would be limited in frequency and would not result in a significant cumulative impact.

15.4 REFERENCES

County of Monterey. 2008. *Revised Rancho San Juan*. Online: http://www.co.monterey.ca.us/planning/major/rsj3/rsj3_main.htm. Site visited November 18, 2009.

County of Monterey. *Monterey County Environmental Impact Report*. Online: http://www.co.monterey.ca.us/gpu/reports/Draft%20General%20Plan.htm. 2004. Site visited November 18, 2009.

County of Monterey. *General Plan and General Plan Update*. Online: http://www.co.monterey.ca.us/gpu/gallery/landuse.html. Site visited November 19, 2009

County of Monterey. *Greater Salinas Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/GSAP.complete. Site visited November 11, 2009.

County of Monterey. *North County Area Plan*. Online: http://www.co.monterey.ca.us/planning/docs/plans/landuse.htm. Site visited November 19, 2009.

County of Monterey. *Major Projects*. Online: http://www.co.monterey.ca.us/planning/major/default.htm. Accessed November 18, 2009

Monterey Bay Unified Air Pollution Control District (MBUAPCD). 2008. The MBUAPCD CEQA Air Quality Guidelines.

U.S. Census Bureau: *State and County Quick Facts*, Online http://quickfacts.census.gov/qfd/states/06/0664224.html. Site visited November 6, 2008.

San Benito County. *San Benito County General Plan*. Online: http://www.san-benito.ca.us/departments/planning/general%20plan.htm. Site visited November 1, 2008

Somavia, Janet, San Benito County Planning Technician. Email communication with O. Puryear, TRC Solutions. November 3, 2008. jsomavia@planning.co.san-benito.ca.us.

ATTACHMENT A: LETTER FROM THE COUNTY OF MONTEREY

MONTEREY COUNTY

BOARD OF SUPERVISORS

April 13, 2010

Andrew Barnsdale
California Public Utilities Commission
505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102

Subject: Crazy Horse/San Juan Grade Road Switching Yard and Reconductoring Project REF100001

Dear Mr. Barnsdale:

Our staff has met with PG&E staff regarding the siting of a new switching facility over the last several months. We also appreciated hearing about a reconductoring project that needs to occur in the area. These two projects are intended to improve system reliability in this area of Monterey County.

We appreciate PG&E's efforts to minimize the visibility of the site by looking at alternative locations. We are recommending a site east of the originally proposed location. This preferred site is located over the hill east of Crazy Horse Canyon Road, so as not to be visible from that road, which is heavily travelled. We encourage you to ensure that multi-height (trees and shrubs) landscaping is installed along San Juan Grade Road to break up the visibility of the site from the traveling public on this road, a lightly used road.

Sincerely,

Simón Salinas, Chair
Board of Supervisors

Attachment: Site Map

cc: Cristina Salguero Holstine, Land Planner
Pacific Gas and Electric
Mail Code N10A
PO Box 770000
San Francisco, CA 94177-0001

Wendy Sarsfield
Pacific Gas and Electric
356 E. Alisal Street
Salinas, CA 93901

ATTACHMENT B: AIR QUALITY ANALYSIS SUPPORTING DATA

Crazy Horse Canyon Switching Station
Summary of Construction Phase Emissions

Emissions	NO_x	ROG	Exhaust PM_{10}	Fugitive PM_{10}	CO	SO_2	$PM_{2.5}$	CO_2[1]	CO_2[1] with APM[3]	CH_4[2]
Peak Daily (lb/day)										
Site Grading - July 2011 - October 2011	32.4	4.4	1.2	19.0	10.5	0.04	1.1	3867	3287	0.039
Foundations - November 2011 - March 2012	39.1	7.8	2.2	21.0	21.0	0.13	1.9	4019	3416	0.032
Station Construction - June 2012 - September 2012	57.4	7.8	3.5	33.5	38.6	0.09	3.1	7333	6233	0.070
Line and Tower - June 2012 - December 2012	66.0	7.5	2.7	29.5	55.1	2.66	2.4	14494	12320	0.042
Post-construction - January 2013 - February 2013	10.6	1.6	1.9	7.5	5.2	0.02	1.7	1456	1238	0.010
Max Daily	**123.4**	**15.3**	**6.2**	**62.9**	**93.8**	**2.8**	**5.5**	**21827**	**18553**	**0.1**
Average Daily 2011	**34.62**	**5.55**	**1.55**	**19.71**	**14.00**	**0.07**	**1.37**	**3917**	**3330**	**0.04**
Average Daily 2012	**62.21**	**8.22**	**3.03**	**31.02**	**46.41**	**1.49**	**2.68**	**10988**	**9340**	**0.05**
Average Daily 2013	**10.56**	**1.55**	**1.88**	**7.53**	**5.25**	**0.02**	**1.67**	**1456**	**1238**	**0.01**
Tons per Phase										
Site Grading - July 2011 - October 2011	1.294	0.136	0.049	0.668	0.420	0.0018	0.043	140	119	0.0014
Foundations - November 2011 - March 2012	1.957	0.388	0.109	1.052	1.049	0.0067	0.097	182	155	0.0015
Station Construction - June 2012 - September 2012	2.296	0.313	0.140	1.339	1.546	0.0034	0.124	266	226	0.0026
Line and Tower - June 2012 - December 2012	2.331	0.280	0.121	1.256	1.422	0.0099	0.107	284	242	0.0017
Post-construction - January 2013 - February 2013	0.132	0.019	0.024	0.094	0.066	0.0002	0.021	17	14	0.0001
Total Tons , 2011	**2.077**	**0.292**	**0.093**	**1.089**	**0.840**	**0.004**	**0.082**	**213**	**181**	**0.002**
Total Tons , 2012	**5.801**	**0.826**	**0.327**	**3.226**	**3.597**	**0.017**	**0.289**	**660**	**561**	**0.005**
Total Tons, 2013	**0.132**	**0.019**	**0.024**	**0.094**	**0.066**	**0.000**	**0.021**	**17**	**14**	**0.000**
Total tons per Project	**8.010**	**1.137**	**0.443**	**4.409**	**4.503**	**0.022**	**0.392**	**890**	**756**	**0.007**

1. Metric tons
2. Methane emissions from truck use only (metric tons).
3. Implementation of APM was assumed to reduce construction equipment, construction vehicles, and worker commutes by approximately 15 percent.

Crazy Horse Canyon Switching Station
Emissions calcs for Construction equipment
Emissions factors, approximate HP ratings, and load defaults are from URBEMIS 2007, Ver 9.2.4.
Equipment lists and construction schedule supplied by PG&E, March 2010.
Page 1

Site Grading - July 2011 - October 2011

Equipment	Fuel	Number	Days Operating**	HP	Load	Hr/day	Emissions Factor, g/hp/hr ROG	NOx	PM	PM2.5***	CO	SO2	CO2
Water Truck	Diesel	3	80	250	0.5	10.5	0.302	2.876	0.100	0.089	0.798	0.004	324.222
D9 Dozer	Diesel	2	80	500	0.55	10.5	0.227	2.251	0.080	0.071	0.732	0.004	312.846
D5 Dozer	Diesel	1	80	120	0.55	10.5	0.504	3.198	0.289	0.257	2.17	0.004	312.846
Elevating Scraper	Diesel	3	80	250	0.72	10.5	0.487	4.555	0.182	0.162	1.372	0.005	409.544
Motor Grader	Diesel	2	80	500	0.61	10.5	0.309	2.97	0.111	0.099	1.066	0.003	346.974
Compactor	Diesel	2	80	250	0.56	10.5	0.3	3.15	0.114	0.101	0.895	0.003	318.534
Excavator	Diesel	2	80	500	0.57	10.5	0.262	2.444	0.089	0.079	0.803	0.003	324.222
Paver	Diesel	1	80	120	0.62	10.5	0.672	4.01	0.355	0.316	2.234	0.004	301.47
Roller	Diesel	1	80	120	0.56	10.5	0.608	3.782	0.330	0.294	2.233	0.004	318.534
Total													

Foundations - November 2011 - March 2012

Equipment	Fuel	Number	Days Operating**	HP	Load	Hr/day	Emissions Factor, g/hp/hr ROG	NOx	PM	PM2.5***	CO	SO2	CO2
Backhoe	Diesel	2	100	175	0.55	10.5	0.555	4.208	0.246	0.219	2.265	0.004	364.039
Skid Steer	Diesel	2	100	50	0.55	10.5	1.162	3.165	0.298	0.265	3.528	0.004	312.846
Generator	Gasoline	2	100	10	0.74	10.5	6.804	4.990	0.327	0.291	3.178	0.268	489.888
Water Truck	Diesel	1	100	250	0.5	10.5	0.302	2.876	0.100	0.089	0.798	0.004	324.222
Total													

Station Construction - June 2012 - September 2012

Equipment	Fuel	Number	Days Operating**	HP	Load	Hr/day	Emissions Factor, g/hp/hr ROG	NOx	PM	PM2.5***	CO	SO2	CO2
Water Truck	Diesel	1	80	250	0.5	10.5	0.286	2.631	0.090	0.080	0.768	0.004	324.222
Manlift	Diesel	5	80	120	0.46	10.5	0.41	2.728	0.219	0.195	1.679	0.003	261.653
Forklift	Diesel	2	80	175	0.3	10.5	0.188	1.409	0.084	0.075	1.005	0.002	170.643
Skip Loader	Diesel	2	80	175	0.55	10.5	0.327	2.56	0.147	0.131	1.81	0.004	312.846
Backhoe	Diesel	2	80	175	0.55	10.5	0.327	2.56	0.147	0.131	1.81	0.004	312.846
Total													

Line and Tower - June 2012 - December 2012

Equipment	Fuel	Number	Days Operating**	HP	Load	Hr/day	Emissions Factor, g/hp/hr ROG	NOx	PM	PM2.5***	CO	SO2	CO2
Water Truck	Diesel	1	90	250	0.5	10.5	0.302	2.876	0.100	0.089	0.798	0.004	324.222
Grader	Diesel	1	90	175	0.61	10.5	0.435	3.341	0.193	0.172	2.062	0.004	346.974
Fork Lift	Diesel	2	90	175	0.3	10.5	0.188	1.409	0.084	0.075	1.005	0.002	170.643
Backhoe	Diesel	1	90	175	0.55	10.5	0.327	2.56	0.147	0.131	1.81	0.004	312.846
Hole Auger	Diesel	1	90	175	0.75	10.5	0.227	2.261	0.111	0.099	2.279	0.005	426.608
Compactor	Diesel	1	90	15	0.75	10.5	0.285	1.783	0.071	0.063	1.493	0.004	244.589
Puller	Diesel	1	90	25	0.51	10.5	0.35	2.211	0.085	0.076	1.194	0.004	290.093
Tensioner	Diesel	1	90	120	0.51	10.5	0.587	3.367	0.324	0.288	2.116	0.003	290.093
Crane	Diesel	1	90	250	0.43	10.5	0.241	2.336	0.085	0.076	0.677	0.003	244.589
Total													

Post-construction - January 2013 - February 2013

Equipment	Fuel	Number	Days Operating**	HP	Load	Hr/day	Emissions Factor, g/hp/hr ROG	NOx	PM	PM2.5***	CO	SO2	CO2
Water Truck	Diesel	1	25	250	0.5	10.5	0.272	2.409	0.080	0.071	0.747	0.004	324.222
D3 Dozer	Diesel	1	25	50	0.55	10.5	0.921	2.983	2.46	2.189	3.298	0.004	312.846
Total													

* metric tons.

** Calculated based on the PG&E estimates.

*** For offroad combustion sources, it was assumed that 89% of PM10 would be PM2.5. This follows the SCAQMD calculation methodology, 2006.

Crazy Horse Canyon Switching Station
Emissions calcs for Construction equipment
Emissions factors, approximate HP ratings, and load defaults are from URBEMIS 2007, Ver 9.2.4.
Equipment lists and construction schedule supplied by PG&E, March 2010.
Page 2

Site Grading - July 2011 - October 2011

Emissions, lb/day							2010 Emissions, ton/phase**						
ROG	NOx	PM10	PM2.5	CO	SO2	CO2*	ROG	NOx	PM10	PM2.5	CO	SO2	CO2*
2.6220	24.9700	0.8682	0.7727	6.9284	0.0347	2814.9562	0.1049	0.9988	0.0347	0.0309	0.2771	0.0014	102.1475
2.8906	28.6640	1.0187	0.9067	9.3212	0.0509	3983.7419	0.1156	1.1466	0.0407	0.0363	0.3728	0.0020	144.5598
0.7701	4.8868	0.4416	0.3930	3.3159	0.0061	478.0490	0.0308	0.1955	0.0177	0.0157	0.1326	0.0002	17.3472
6.0886	56.9482	2.2754	2.0251	17.1532	0.0625	5120.2624	0.2435	2.2779	0.0910	0.0810	0.6861	0.0025	185.8012
4.3640	41.9454	1.5677	1.3952	15.0551	0.0424	4900.3225	0.1746	1.6778	0.0627	0.0558	0.6022	0.0017	177.8201
1.9448	20.4205	0.7390	0.6577	5.8020	0.0194	2064.9604	0.0778	0.8168	0.0296	0.0263	0.2321	0.0008	74.9321
3.4576	32.2533	1.1745	1.0453	10.5971	0.0396	4278.7334	0.1383	1.2901	0.0470	0.0418	0.4239	0.0016	155.2643
1.1576	6.9074	0.6115	0.5442	3.8482	0.0069	519.2959	0.0463	0.2763	0.0245	0.0218	0.1539	0.0003	18.8439
0.9460	5.8842	0.5134	0.4570	3.4742	0.0062	495.5905	0.0378	0.2354	0.0205	0.0183	0.1390	0.0002	17.9837
2.6220	**24.9700**	**0.8682**	**0.7727**	**6.9284**	**0.0347**	**2814.9562**	**0.1049**	**0.9988**	**0.0347**	**0.0309**	**0.2771**	**0.0014**	**102.1475**

Foundations - November 2011 - March 2012

Emissions, lb/day							2010 Emissions, ton/phase**						
ROG	NOx	PM10	PM2.5	CO	SO2	CO2*	ROG	NOx	PM10	PM2.5	CO	SO2	CO2*
2.4736	18.7545	1.0964	0.9758	10.0948	0.0178	1622.4695	0.1237	0.9377	0.0548	0.0488	0.5047	0.0009	73.5941
1.4797	4.0303	0.3795	0.3377	4.4925	0.0051	398.3742	0.0740	0.2015	0.0190	0.0169	0.2246	0.0003	18.0700
2.3314	1.7097	0.1121	0.0997	1.0889	0.0919	167.8636	0.1166	0.0855	0.0056	0.0050	0.0544	0.0046	7.6142
0.8740	8.3233	0.2894	0.2576	2.3095	0.0116	938.3187	0.0437	0.4162	0.0145	0.0129	0.1155	0.0006	42.5615
7.1587	**32.8178**	**1.8773**	**1.6708**	**17.9857**	**0.1264**	**3127.0260**	**0.3579**	**1.6409**	**0.0939**	**0.0835**	**0.8993**	**0.0063**	**141.8397**

Station Construction - June 2012 - September 2012

Emissions, lb/day							2010 Emissions, ton/phase**						
ROG	NOx	PM10	PM2.5	CO	SO2	CO2*	ROG	NOx	PM10	PM2.5	CO	SO2	CO2*
0.8277	7.6143	0.2605	0.2318	2.2226	0.0116	938.3187	0.0331	0.3046	0.0104	0.0093	0.0889	0.0005	34.0492
2.6199	17.4322	1.3994	1.2455	10.7290	0.0192	1671.9862	0.1048	0.6973	0.0560	0.0498	0.4292	0.0008	60.6721
0.4570	3.4253	0.2042	0.1817	2.4432	0.0049	414.8353	0.0183	0.1370	0.0082	0.0073	0.0977	0.0002	15.0533
1.4574	11.4096	0.6552	0.5831	8.0669	0.0178	1394.3097	0.0583	0.4564	0.0262	0.0233	0.3227	0.0007	50.5959
1.4574	11.4096	0.6552	0.5831	8.0669	0.0178	1394.3097	0.0583	0.4564	0.0262	0.0233	0.3227	0.0007	50.5959
6.8195	**51.2908**	**3.1744**	**2.8252**	**31.5286**	**0.0713**	**5813.7595**	**0.2728**	**2.0516**	**0.1270**	**0.1130**	**1.2611**	**0.0029**	**210.9664**

Line and Tower - June 2012 - December 2012													
Emissions, lb/day							2010 Emissions, ton/phase**						
ROG	NOx	PM10	PM2.5	CO	SO2	CO2*	ROG	NOx	PM10	PM2.5	CO	SO2	CO2*
0.8740	8.3233	0.2894	0.2576	2.3095	0.0116	938.3187	0.0393	0.3745	0.0130	0.0116	0.1039	0.0005	38.3053
1.0751	8.2574	0.4770	0.4245	5.0963	0.0099	857.5564	0.0484	0.3716	0.0215	0.0191	0.2293	0.0004	35.0083
0.4570	3.4253	0.2042	0.1817	2.4432	0.0049	414.8353	0.0206	0.1541	0.0092	0.0082	0.1099	0.0002	16.9350
0.7287	5.7048	0.3276	0.2915	4.0335	0.0089	697.1548	0.0328	0.2567	0.0147	0.0131	0.1815	0.0004	28.4602
0.6898	6.8706	0.3373	0.3002	6.9253	0.0152	1296.3617	0.0310	0.3092	0.0152	0.0135	0.3116	0.0007	52.9218
0.0742	0.4644	0.0185	0.0165	0.3889	0.0010	63.7070	0.0033	0.0209	0.0008	0.0007	0.0175	0.0000	2.6007
0.1033	0.6527	0.0251	0.0223	0.3525	0.0012	85.6338	0.0046	0.0294	0.0011	0.0010	0.0159	0.0001	3.4959
0.8317	4.7708	0.4591	0.4086	2.9982	0.0043	411.0423	0.0374	0.2147	0.0207	0.0184	0.1349	0.0002	16.7801
0.5998	5.8141	0.2116	0.1883	1.6850	0.0075	608.7560	0.0270	0.2616	0.0095	0.0085	0.0758	0.0003	24.8515
5.4338	**44.2834**	**2.3497**	**2.0913**	**26.2323**	**0.0644**	**5373.3662**	**0.2445**	**1.9928**	**0.1057**	**0.0941**	**1.1805**	**0.0029**	**219.3589**
Post-construction - January 2013 - February 2013													
Emissions, lb/day							2010 Emissions, ton/phase**						
ROG	NOx	PM10	PM2.5	CO	SO2	CO2*	ROG	NOx	PM10	PM2.5	CO	SO2	CO2*
0.7872	6.9718	0.2315	0.2061	2.1619	0.0116	938.3187	0.0098	0.0871	0.0029	0.0026	0.0270	0.0001	10.6404
0.5864	1.8993	1.5663	1.3940	2.0998	0.0025	199.1871	0.0073	0.0237	0.0196	0.0174	0.0262	0.0000	2.2587
1.3736	**8.8711**	**1.7978**	**1.6000**	**4.2617**	**0.0141**	**1137.5058**	**0.0172**	**0.1109**	**0.0225**	**0.0200**	**0.0533**	**0.0002**	**12.8991**

Crazy Horse Canyon Switching Station
Emissions calcs for on-site and commute truck miles
Equipment lists and usage percents supplied by PG&E, November 2009.
Page 1

Truck	Fuel	Number	Days Operating[1]	Average VMT Per day	Total VMT per day	Total VMT per phase	Emissions Factors (lb/mile)[2] CO	NOx	ROG	SOx	PM10	PM2.5	CO2	CH4
Site Grading - July 2011 - October 2011														
Pickup	Gasoline	2	80	30	60	4800	0.00826	0.00084	0.00085	0.00001	0.00009	0.00006	1.10235	0.00008
Crew Truck	Gasoline	3	80	30	90	7200	0.00826	0.00084	0.00085	0.00001	0.00009	0.00006	1.10235	0.00008
Fuel Truck	Diesel	1	80	30	30	2400	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Semi Truck	Diesel	4	80	30	120	9600	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Skip Loader Truck	Diesel	1	80	30	30	2400	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Mechanical Truck	Diesel	1	80	30	30	2400	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Total														
Foundations - November 2011 - March 2012														
Pickup	Gasoline	2	100	30	60	6000	0.00826	0.00084	0.00085	0.00001	0.00009	0.00006	1.10235	0.00008
Crew Truck	Gasoline	2	100	30	60	6000	0.00826	0.00084	0.00085	0.00001	0.00009	0.00006	1.10235	0.00008
1-ton Truck	Diesel	1	100	30	30	3000	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Dump Truck	Diesel	1	100	30	30	3000	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Concrete Truck	Diesel	2	100	30	60	6000	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Truck-mounted Digger	Diesel	2	100	30	60	6000	0.01112	0.03456	0.00280	0.00004	0.00166	0.00144	4.22046	0.00013
Total														
Station Construction - June 2012 - September 2012														
Pickup	Gasoline	21	80	30	630	50400	0.00765	0.00078	0.00080	0.00001	0.00009	0.00006	1.10153	0.00007
Crew Truck	Gasoline	2	80	30	60	4800	0.00765	0.00078	0.00080	0.00001	0.00009	0.00006	1.10153	0.00007
Boom Truck	Diesel	3	80	30	90	7200	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Semi Truck	Diesel	3	80	30	90	7200	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Total														

Line and Tower - June 2012 - December 2012														
Pickup	Gasoline	4	90	30	120	10800	0.00765	0.00078	0.00080	0.00001	0.00009	0.00006	1.10153	0.00007
Crew Truck	Gasoline	4	90	30	120	10800	0.00765	0.00078	0.00080	0.00001	0.00009	0.00006	1.10153	0.00007
Light Truck	Diesel	1	90	30	30	2700	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Fuel Truck	Diesel	1	90	30	30	2700	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Line Truck	Diesel	1	90	30	30	2700	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Bucket Truck	Diesel	2	90	30	60	5400	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Dump Truck	Diesel	1	90	30	30	2700	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
2-ton Flat-bed Truck	Diesel	1	90	30	30	2700	0.01022	0.03092	0.00253	0.00004	0.00150	0.00129	4.21591	0.00012
Total														
Post-construction - January 2013 - February 2013														
Pickup	Gasoline	2	25	30	60	1500	0.00709	0.00071	0.00075	0.00001	0.00009	0.00006	1.10087	0.00007
1-ton Truck	Diesel	2	25	30	60	1500	0.00932	0.02749	0.00226	0.00004	0.00134	0.00115	4.21519	0.00010
Total														

1: Calculated based on information supplied by PG&E.

2: Most conservative emissions factors from EMFAC2007 v.2.3 for the SCAQMD.

3: With 55% emissions reduction due to 2x daily watering (URBEMIS default).

See fugitive worksheet for calculation of emissions factors and paved/unpaved assumptions.

4: Calculated in metric tons.

Crazy Horse Canyon Switching Station
Emissions calcs for on-site and commute truck miles
Equipment lists and usage percents supplied by PG&E, November 2009.
Page 2

Emissions, tons/phase								
CO	NOx	ROG	SOx	Exhaust PM10	Fugitive PM10[3]	PM2.5	CO2[4]	CH4[4]
Site Grading - July 2011 - October 2011								
0.019831	0.002027	0.002046	2.58E-05	0.000213	0.06168	0.000136	2.40009	0.000167
0.029746	0.003041	0.003068	3.88E-05	0.00032	0.09252	0.000204	3.600136	0.000251
0.01335	0.04147	0.003355	4.77E-05	0.001993	0.11976	0.001734	4.594486	0.000141
0.053398	0.165879	0.013418	0.000191	0.007972	0.12336	0.006935	18.37795	0.000562
0.01335	0.04147	0.003355	4.77E-05	0.001993	0.11976	0.001734	4.594486	0.000141
0.01335	0.04147	0.003355	4.77E-05	0.001993	0.11976	0.001734	4.594486	0.000141
0.143023	**0.295356**	**0.028596**	**0.000398**	**0.014484**	**0.63684**	**0.012476**	**38.16163**	**0.001402**
Foundations - November 2011 - March 2012								
0.024788	0.002534	0.002557	3.23E-05	0.000266	0.0771	0.00017	3.000113	0.000209
0.024788	0.002534	0.002557	3.23E-05	0.000266	0.0771	0.00017	3.000113	0.000209
0.016687	0.051837	0.004193	5.96E-05	0.002491	0.1497	0.002167	5.743108	0.000176
0.016687	0.051837	0.004193	5.96E-05	0.002491	0.1497	0.002167	5.743108	0.000176
0.033374	0.103674	0.008386	0.000119	0.004983	0.2994	0.004335	11.48622	0.000351
0.033374	0.103674	0.008386	0.000119	0.004983	0.2994	0.004335	11.48622	0.000351
0.149698	**0.31609**	**0.030273**	**0.000422**	**0.015481**	**1.0524**	**0.013343**	**40.45887**	**0.001472**
Station Construction - June 2012 - September 2012								
0.1929	0.019551	0.020066	0.00027	0.002263	0.64764	0.001449	25.18206	0.001639
0.018371	0.001862	0.001911	2.58E-05	0.000215	0.23952	0.000138	2.398292	0.000156
0.036775	0.111326	0.0091	0.000146	0.005384	0.35928	0.004657	13.7686	0.000381
0.036775	0.111326	0.0091	0.000146	0.005384	0.09252	0.004657	13.7686	0.000381
0.28482	**0.244064**	**0.040176**	**0.000587**	**0.013247**	**1.33896**	**0.0109**	**55.11756**	**0.002556**

Line and Tower - June 2012 - December 2012								
0.041336	0.004189	0.0043	5.79E-05	0.000485	0.13878	0.000311	5.396156	0.000351
0.041336	0.004189	0.0043	5.79E-05	0.000485	0.13878	0.000311	5.396156	0.000351
0.013791	0.041747	0.003412	5.46E-05	0.002019	0.13473	0.001746	5.163226	0.000143
0.013791	0.041747	0.003412	5.46E-05	0.002019	0.13473	0.001746	5.163226	0.000143
0.013791	0.041747	0.003412	5.46E-05	0.002019	0.13473	0.001746	5.163226	0.000143
0.027581	0.083494	0.006825	0.000109	0.004038	0.26946	0.003493	10.32645	0.000285
0.013791	0.041747	0.003412	5.46E-05	0.002019	0.13473	0.001746	5.163226	0.000143
0.013791	0.041747	0.003412	5.46E-05	0.002019	0.13473	0.001746	5.163226	0.000143
0.179205	**0.300609**	**0.032486**	**0.000498**	**0.015104**	**1.22067**	**0.012845**	**46.93489**	**0.001701**
Post-construction - January 2013 - February 2013								
0.005319	0.000534	0.000559	8.04E-06	6.8E-05	0.019275	4.4E-05	0.749023	4.56E-05
0.006988	0.02062	0.001697	3.06E-05	0.001003	0.07485	0.00086	2.867967	7.1E-05
0.012308	**0.021154**	**0.002257**	**3.87E-05**	**0.001071**	**0.094125**	**0.000904**	**3.616991**	**0.000117**

Crazy Horse Canyon Switching Station
Emissions calcs for on-site and commute truck miles
Equipment lists and usage percents supplied by PG&E, November 2009.
Page 3

Emissions, lb/day								
CO	NOx	ROG	SOx	Exhaust PM10	Fugitive PM10[3]	PM2.5	CO2[4]	CH4[4]
Site Grading - July 2011 - October 2011								
0.495766	0.050676	0.05114	0.000646	0.005327	1.5420	0.003392	66.14109	0.004607
0.743648	0.076014	0.07671	0.000969	0.007991	2.3130	0.005088	99.21164	0.00691
0.333739	1.036743	0.083863	0.001192	0.049826	2.994	0.043347	126.6137	0.003873
1.334956	4.146971	0.335452	0.004766	0.199304	3.0840	0.173387	506.4548	0.015492
0.333739	1.036743	0.083863	0.001192	0.049826	2.994	0.043347	126.6137	0.003873
0.333739	1.036743	0.083863	0.001192	0.049826	2.994	0.043347	126.6137	0.003873
3.575586	**7.383889**	**0.71489**	**0.009957**	**0.362101**	**15.921**	**0.311906**	**1051.649**	**0.038628**
Foundations - November 2011 - March 2012								
0.495766	0.050676	0.05114	0.000646	0.005327	1.5420	0.003392	66.14109	0.004607
0.495766	0.050676	0.05114	0.000646	0.005327	1.5420	0.003392	66.14109	0.004607
0.333739	1.036743	0.083863	0.001192	0.049826	2.9940	0.043347	126.6137	0.003873
0.333739	1.036743	0.083863	0.001192	0.049826	2.9940	0.043347	126.6137	0.003873
0.667478	2.073485	0.167726	0.002383	0.099652	5.988	0.086693	253.2274	0.007746
0.667478	2.073485	0.167726	0.002383	0.099652	5.988	0.086693	253.2274	0.007746
2.993965	**6.321808**	**0.605457**	**0.008442**	**0.309611**	**21.048**	**0.266864**	**891.9644**	**0.032452**
Station Construction - June 2012 - September 2012								
4.822493	0.488773	0.501656	0.00676	0.056568	16.1910	0.036225	693.961	0.045165
0.459285	0.04655	0.047777	0.000644	0.005387	5.9880	0.00345	66.09152	0.004301
0.919367	2.783141	0.227488	0.003638	0.134609	8.9820	0.116419	379.4317	0.010486
0.919367	2.783141	0.227488	0.003638	0.134609	2.3130	0.116419	379.4317	0.010486
7.120512	**6.101605**	**1.004408**	**0.014679**	**0.331174**	**33.474**	**0.272512**	**1518.916**	**0.070438**

Line and Tower - June 2012 - December 2012								
0.91857	0.0931	0.095554	0.001288	0.010775	3.0840	0.0069	132.183	0.008603
0.91857	0.0931	0.095554	0.001288	0.010775	3.0840	0.0069	132.183	0.008603
0.306456	0.927714	0.075829	0.001213	0.04487	2.9940	0.038806	126.4772	0.003495
0.306456	0.927714	0.075829	0.001213	0.04487	2.9940	0.038806	126.4772	0.003495
0.306456	0.927714	0.075829	0.001213	0.04487	2.9940	0.038806	126.4772	0.003495
0.612911	1.855427	0.151658	0.002425	0.08974	5.9880	0.077612	252.9545	0.006991
0.306456	0.927714	0.075829	0.001213	0.04487	2.994	0.038806	126.4772	0.003495
0.306456	0.927714	0.075829	0.001213	0.04487	2.994	0.038806	126.4772	0.003495
3.98233	**6.680195**	**0.721912**	**0.011063**	**0.335638**	**27.126**	**0.285443**	**1149.707**	**0.041673**
Post-construction - January 2013 - February 2013								
0.425537	0.042695	0.04474	0.000643	0.00544	1.5420	0.003517	66.05246	0.004024
0.559074	1.64961	0.135785	0.002452	0.080218	5.9880	0.068777	252.9111	0.006265
0.984611	**1.692305**	**0.180525**	**0.003095**	**0.085658**	**7.53**	**0.072294**	**318.9636**	**0.010289**

Crazy Horse Canyon Switching Station
Fugitive Dust Emissions

Fugitive Dust from Grading
Acreage supplied by PG&E

Phase	Acres Graded	Acres Paved	Emission Factor[1] (lb PM10 / acre)	Emission Factor[1] (lb ROG / acre)	PM 10 Emissions[3] (lb/phase)	PM10 Emissions (tons/phase)	PM 10 Emissions (lb/day)[2]	ROG Emissions[3] (lb/phase)	ROG Emissions (tons/phase)	ROG Emissions (lb/day)[2]
Site Preparation	5.2	NA	20	NA	46.8	0.02	2.34	NA	NA	NA
Access Road	1.7	0.3	20	2.62	15.5	0.01	0.77	5.5	0.003	1.10
Total, Site Grading	**6.9**				**62.3**	**0.03**	**3.11**	NA	NA	NA
Towers (6) plus crane pads	4.3	NA	20	NA	38.5	0.02	1.28	NA	NA	NA
TSPs (5)	3.5	NA	20	NA	31.5	0.02	1.05	NA	NA	NA
Total, Line and Tower	**7.8**				**70.0**	**0.04**	**2.33**	NA	NA	NA

1: Emisions factor from URBEMIS2007, Version 9.2.4.
2: lb per day calculated based on estimated days grading/paving per phase.
3: With 55% emissions reduction due to 2x daily watering (URBEMIS default).

Fugitive Dust from Roads

Calculation of Emissions Factors **$E=[k(sL/2)^{0.65}*(W/3$** From USEPA AP-42, Chapter 13 Part 2.1
Paved Surfaces
Eq 1:
E = 0.001 Emissions PM10 (lb/vehicle mile traveled)
k = 0.016 Particle size multiplier (lb/vehicle mile traveled)
Where:
sL = 0.03 Silt loading (g/m^2)
W = 3 Weight (tons)
C = 0.0004 Brake and tire wear (lb/vehicle mile traveled)

$E=[k(s/12)^{a}*(W/3)^{b}]$ From USEPA AP-42, Chapter 13 Part 2.2
Unpaved Surfaces
Eq 1a:
E = 1.1 Emissions PM10 (lb/vehicle mile traveled)
k = 1.5 Particle size multiplier (lb/vehicle mile traveled)
Where:
s = 8.5 Silt content (%)
a = 0.9 Empirical constant
W = 3 Weight (tons)
b = 0.45 Empirical constant

Emissions for Fugitive PM10 are calculated on the Trucks worksheet using the Emission Factors calculated above.
Vehicle miles were estimated for pickups to consist of 95% paved surfaces and 5% unpaved.
Vehicle miles were estimated for other vehicles to consist of 80% paved surfaces and 20% unpaved.

Crazy Horse Canyon Switching Station
Emissions calcs for helicopter use.

				Emissions Factors[2]								Emissions (ton/quarter)					
Helicopter[1]	Engine	Mode	Fuel rate[2] (lb/hr)	CO (lb/hr)	NOx (lb/hr)	HC (lb/hr)	SOx (lb/hr)	PM (lb/hr)	CO2[3] (kg/gal)	Minutes per day[4]	Days per Quarter[5]	CO (ton/Q)	NOx (ton/Q)	HC (ton/Q)	SOx (ton/Q)	PM (ton/Q)	CO2[6] (ton/Q)
Hughes 500	250B17B	Idle	63	6.13	0.09	1.27	0.06	0	9.56	14.0	5	0.00358	0.00005	0.00074	0.00004	0.00000	0.10472
		Takeoff	265	2.07	1.75	0.07	0.27	0	9.56	4.3	5	0.00037	0.00032	0.00001	0.00005	0.00000	0.13655
		Climbout	245	2.21	1.46	0.09	0.25	0	9.56	608.7	5	0.05605	0.03703	0.00228	0.00634	0.00000	17.70496
		Approach	85	4.13	0.19	0.44	0.09	0	9.56	13.0	5	0.00224	0.00010	0.00024	0.00005	0.00000	0.13119
											TOTAL	**0.0622**	**0.0375**	**0.0033**	**0.0065**	**0.0000**	**18.08**
										Peak Daily (lb/day)		24.89	15.00	1.31	2.59	0.00	7970.77

1. Assume Hughes 500 is representative of helicopter to be used: emissions factors available from USEPA.
2. Emission factors used are from USEPA AP-42 Volume II. Source recommended by FAA EDMS tech support.
3. Emission factor for Jet Fuel - CA ARB Mandatory Reporting Regulation Appendix A, Table 4.
4. Minutes per mode based on default times in EDMS, assume 2 landing / takeoff cycles per day plus 10 hours in climbout mode during structure work.
5. 5 days activity assumed, during line and tower work.
6. In metric tons.

ATTACHMENT C: CALCULATIONS FOR OPERATIONS EMISSIONS ESTIMATES

PG&E Crazy Horse Canyon Switching Station Project
Calculation of Criteria Pollutant Emissions Estimates for station operation.
Mobile Sources

BAAQMD CEQA Guidelines – Section 3.4 – Calculating Mobile Source Emissions – "Manual Calculation Method".
Emissions from vehicle use:

Light truck	**U**	**T**	**L[1]**	**R**	**S**	**g/day**	**lb/day**	**tons/day**
ROG	1	1	9.1	0.22	0.79	2.792	0.006155203	3.0776E-06
NOx	1	1	9.1	0.76	0.89	7.806	0.017208995	8.6045E-06
CO	1	1	9.1	3.66	12.85	46.156	0.10175485	5.08774E-05
SOx	1	1	9.1	0.03		0.273	0.000601852	3.00926E-07
PM10	1	1	9.1	0.44		4.004	0.00882716	4.41358E-06
Heavy truck	**U**	**T**	**L[1]**	**R**	**S**	**g/day**	**lb/day**	**tons/day**
ROG	1	1	2.3	0.22	0.79	1.296	0.002857143	1.42857E-06
NOx	1	1	2.3	0.76	0.89	2.638	0.005815697	2.90785E-06
CO	1	1	2.3	3.66	12.85	21.268	0.046887125	2.34436E-05
SOx	1	1	2.3	0.03		0.069	0.000152116	7.60582E-08
PM10	1	1	2.3	0.44		1.012	0.002231041	1.11552E-06

1) based on PG&E estimated miles per month and 22 work days per month.

PG&E Crazy Horse Canyon Switching Station Project
Calculation of GHG Emissions Estimates for station operation.

SF6 from operations - info supplied by PG&E.
= 0.71 MTon/year CO2e

Operations vehicles GHG emissions estimate*.

Vehicle	Fuel effic. miles/ gallon**	Trip Miles/month	Annual Miles	Fuel use Gallons/year	Gasoline vehicle, Model year 2005 Emission factor kgCO2/gal	Emission factor gN2O/mile	Emission factor gCH4/mile	Emissions Mt CO2	Emissions kg N2O	Emissions kg CH4	GWP N2O	GWP CH4	N2O MtCO2e	CH4 MtCO2e	Total emissions MtCO2e/year
Light truck	15	200	2400	160	8.81	0.0101	0.0157	1.4096	0.02424	0.03768	310	21	0.0075	0.0008	1.42
HD truck	5.8	50	600	103	8.81	0.0177	0.0326	0.9114	0.01062	0.01956	310	21	0.0033	0.0004	0.92

* emissions factors from The Climate Registry General Reporting Protocol. Adapted from USEPA Cllimate Leaders.
** TCR GRP and manufacturers average for 2005.

ATTACHMENT D: NATIVE AMERICAN CONSULTATION

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

[1] Enclosure(s) [ ] Per your request [x] For your review [x] For your information/use

[ ] Other Total Pages Faxed: 2

To: Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, #364
Sacramento, CA 95814
(916) 657-5390

Date: September 30, 2008
Client: Pacific Gas and Electric Company
Project: Crazy Horse Substation and Switchyard Project
Project #: 534

Subject: **Native American Contacts and Inventory Check for the Crazy Horse Substation and Switchyard Project**

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

We are requesting a list of representatives from the Native American community to contact regarding cultural resources on this project. In addition, we request that you check your inventory of sacred lands for properties that may be affected by the project in the ¼ mile radius. We have included a map showing the approximate project located.

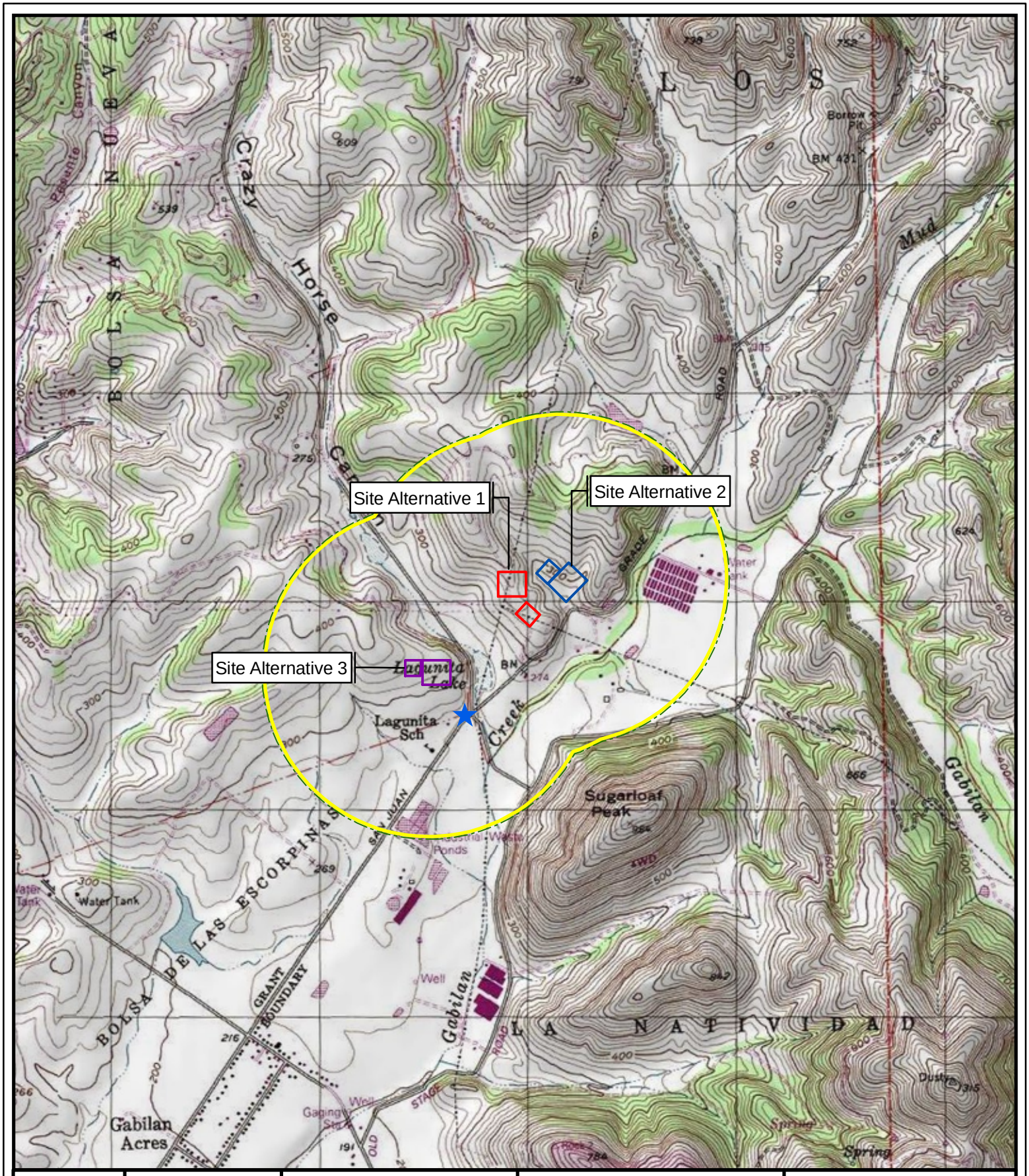
Please contact me at the number below if you have any questions regarding this project or require any additional information. **(415) 458-5803 ext.31**.

Kindly,

Cassidy DeBaker

Cassidy DeBaker, Archaeologist

GANDA


Site Alternative 1
Site Alternative 2
Site Alternative 3
Crazy Horse Canyon
Mud
Lagunita Sch
Lagunita Creek
Sugarloaf Peak
Gabilan
Gabilan Acres
Water Tank
Well
Spring
BOLSA DE LAS ESCORPINAS
LA NATIVIDAD
GRANT BOUNDARY
SAN JUAN
ROAD
GRADE
STAGE
Project Location
Legend
1/2 Mile Buffer
Site Alternative 1
Site Alternative 2
Site Alternative 3
State Historic Site #651
0 0.1 0.2 0.4 mi
0 600 1,200 2,400 ft
N
Map Scale = 1:24,000 (One Inch = 2,000 Feet)
Quadrangle Name: SAN JUAN BAUTISTA
Legal Description: Parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas Land Grants (No Township, Range, Section Data Available)
GANDA
Crazy Horse Switching Station Project Area
Monterey County, CA
September, 2008

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

Cassidy DeBaker
Garcia and Associates

Sent by Fax: 415-458-5829
Number of Pages: 2

RE: Crazy Horse Substation and Switchyard project, Monterey County

Dear Ms. DeBaker:

A record search of the sacred lands 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. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez
Program Analyst

Native American Contacts
Monterey County
October 3, 2008

Salinan Nation Cultural Preservation Association
Gregg Castro, Administrator
5225 Roeder Road Salinan
San Jose , CA 95111
glcastro@pacbell.net
(408) 864-4115

Ohlone/Coastanoan-Esselen Nation
Rudy Rosales, Cultural Resources Committee Chair
PO Box 647 Esselen
Monterey , CA 93942 Ohlone/Costanoan
esselennation46@aol.com
(831) 659-5831
(831) 917-1866 - cell

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 inventory check for Crazy Horse Substation and Switchyard Project, PG & E; Monterey County.

Native American Contacts
Monterey County
October 3, 2008

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 Ohlone/Costanoan
Hollister , CA 95024
ams@garlic.com
831-637-4238

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
3929 Riverside Drive Ohlone/Costanoan
Chino , CA 91710
(909) 622-1564
(909) 464-2074

Jakki Kehl
1307 Horizon Lane Ohlone/Costanoan
Patterson , CA 95363
jakki@bigvalley.net
(209) 892-1060

Ohlone/Coastanoan-Esselen Nation
Louise Miranda-Ramirez, Chairperson
PO Box 1301 Esselen
Monterey , CA 93942 Ohlone/Costanoan
ljramirez@comcast.net
408-629-5189
408-205-7579 - cell

Esselen Tribe of Monterey County
Tom Little Bear Nason
38655 Tassajara Road Esselen
Carmel Valley , CA 93924
(408) 659-2153

Trina Marine Ruano Family
Ramona Garibay, Representative
16010 Halmar Lane Ohlone/Costanoan
Lathrop , CA 95330 Bay Miwok
Plains Miwok
Patwin

Judith Bomar Grindstaff
63161 Argyle Road Salinan
King City , CA 93930
(831) 385-3759-home

Amah MutsunTribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40 Ohlone/Costanoan
Sacramento , CA 95821
vlopez@amahmutsun.org
(916) 481-5785

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 inventory check for Crazy Horse Substation and Switchyard Project, PG & E; Monterey County.

Native American Contacts
Monterey County
October 3, 2008

Amah/MutsunTribal Band
Irene Zwierlein, Chairperson
789 Canada Road Ohlone/Costanoan
Woodside , CA 94062
amah_mutsun@yahoo.com
(650) 851-7747 - Home
(650) 851-7489 - Fax

Salinan Nation Cultural Preservation Association
Jose Freeman, President
15200 County Road, 98B Salinan
Woodland , CA 95695
josefree@ccio1.com
(530) 662-5316

Ohlone/Coastanoan-Esselen Nation
Christianne Arias, Vice Chairperson
PO Box 552 Esselen
Soledad , CA 93960 Ohlone/Costanoan
carias@montereybay.com
831-235-4590

Amah MutsunTribal Band
Edward Ketchum
35867 Yosemite Ave Ohlone/Costanoan
Davis , CA 95616 Northern Valley Yokuts
aerieways@aol.com

Salinan Nation Cultural Preservation Association
Doug Alger, Cultural Resources Coordinator
PO Box 56 Salinan
Lockwood , CA 93932
fabbq2000@earthlink.net
(831) 262-9829 - cell
(831) 385-3450

Amah/Mutsun Tribal Band
Joseph Mondragon, Tribal Administrator
882 Bay view Avenue Ohlone/Costanoan
Pacific Grove , CA 94062
831-372-9015
831-372-7078 - fax

Salinan Nation Cultural Preservation Association
Robert Duckworth, Environmental Coordinator
Drawer 2447 Salinan
Greenfield , CA 93927
dirobduck@thegrid.net
(831) 385-1882
(831) 674-5019

Amah/Mutsun Tribal Band
Melvin Ketchum III, Environmental Coordinator
7273 Rosanna Street Ohlone/Costanoan
Gilroy , CA 95020
408-842-3220

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 Inventory check for Crazy Horse Substation and Switchyard Project, PG & E; Monterey County.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Salinan Nation Cultural Preservation Association
Doug Alger, Cultural Resources Coordinator
PO Box 56
Lockwood, CA 93932

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Alger:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Indian Canyon Mutsun Band of Costanoan
Anne Marie Sayers, Chairperson
PO Box 28
Hollister, CA 95024

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Sayers:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Ohlone/Coastanoan-Esselen Nation
Rudy Rosales, Cultural Resources Committee Chari]
PO Box 647
Monterey, CA 93942

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Rosales:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Ohlone/Coastanoan-Esselen Nation
Louise Miranda-Ramirez, Cultural Chairperson
PO Box 1301
Monterey, CA 93942

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Miranda-Ramirez:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Esselen Tribe of Monterey County
Tom Little Bear Nason
38655 Tassajara Road
Carmel Valley, CA 93924

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Nason:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Amah Mutsun Tribal Land
Joseph Mondragon, Tribal Administrator
882 Bay View Ave
Pacific Grove, CA 94062

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Mondragon:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40
Sacramento, CA 95821

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Lopez:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Amah Mutsun Tribal Land
Melvin Ketchum III, Environmental Coordinator
7273 Rosanna Street
Gilroy, CA 95020

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Ketchum III:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Amah Mutsun Tribal Land
Edward Ketchum
35867 Yosemite Ave
Davis, CA 95616

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Ketchum:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Jakki Kehl
1307 Horizon Lane
Patterson, CA 95363

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Kehl:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Judith Bomar Grindstaff
63161 Argyle Road
King City, CA 93930

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Grindstaff :

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Trina Marine Ruano Family
Ramona Garibay, Representative
16010 Halmar Lane
Lathrop, CA 95330

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Garibay:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Salinan Nation Cultural Preservation Association
Jose Freeman, President
15200 County Road, 96B
Woodland, CA 95695

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Freeman:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Salinan Nation Cultural Preservation Association
Robert Duckworth, Environmental Coordinator
Drawer 2447
Greenfield, CA 93927

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Duckworth:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
3929 Riverside Drive
Chino, CA 91710

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Cerda:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Salinan Nation Cultural Preservation Association
Gregg Castro, Administrator
5225 Roeder Road
San Jose, CA 95111

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Mr. Castro:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Ohlone/Coastanoan-Esselen Nation
Christianne Arias, Vice Chairperson
PO Box 552
Soledad, CA 93960

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Arias:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5803
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 6, 2008

Amah Mutsun Tribal Band
Irene Zwierlein, Chairperson
789 Canada Road
Woodside, CA 94062

RE: **Cultural resources Inventory Check for the Crazy Horse Substation and Switchyard Project, Monterey, California.**

Dear Ms. Zwierlein:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. This project area lies within Monterey County on the **San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle** (see attachment). There is no Township, Range, or Section data available for this project area; however the project location falls within parts of Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

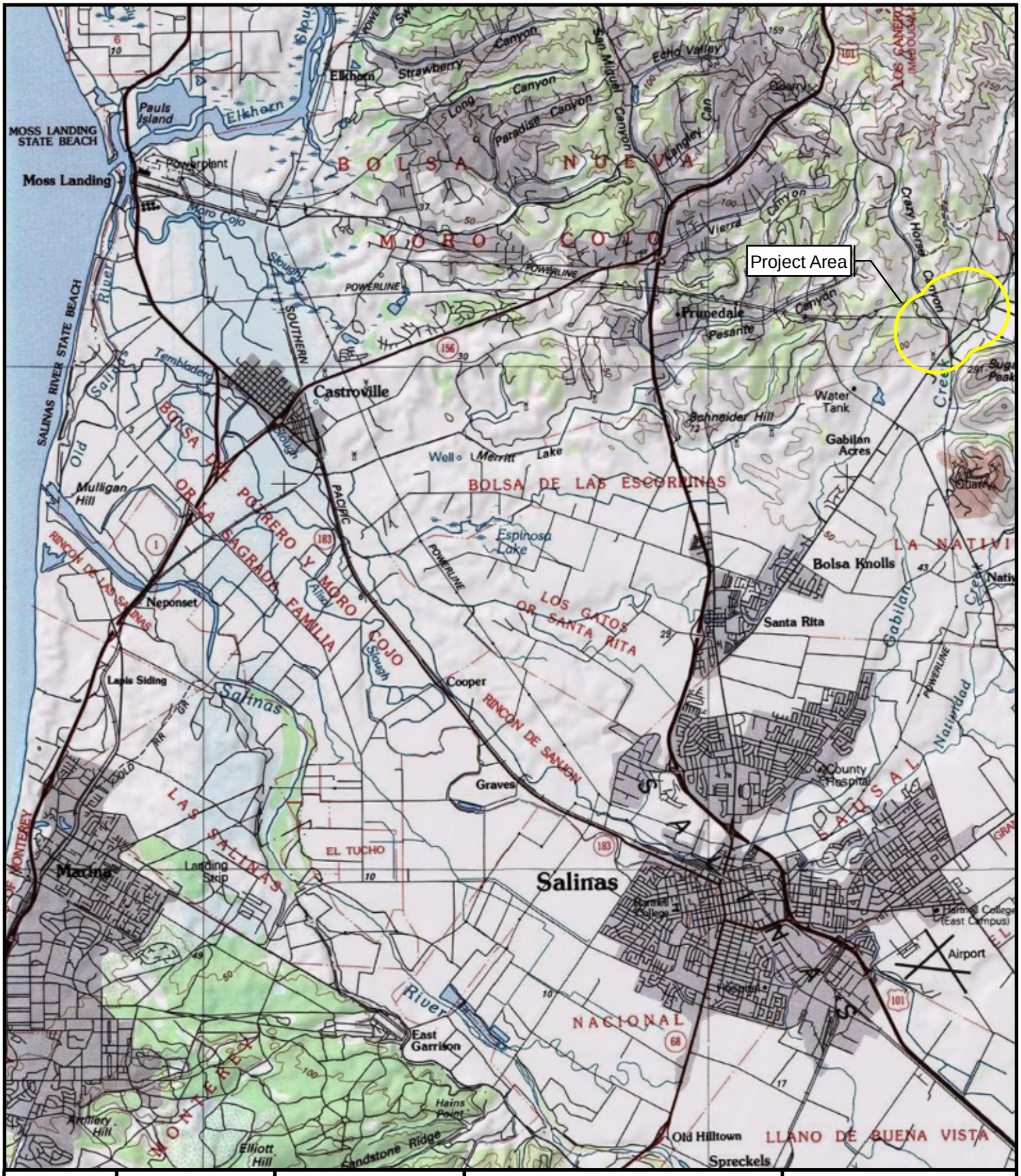
GANDA has checked the records of the California Native American Heritage Commission (NAHC). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the vicinity of the project area. However, they recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this project area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these individuals.

We encourage you to participate in this process. Feel free to contact me with any information, questions or concerns you may have.

Sincerely,

Cassidy DeBaker

Cassidy DeBaker
Archaeologist
(415) 458-5803 ext.31.



GANDA

Legend:

Project Area

0 0.5 1 2 3 mi

0 0.5 1 2 3 4 5 km

Map Scale = 1:95,040 (One Inch = 1.5 Miles)

Location Map
Crazy Horse Switching Station

Monterey County, CA
September, 2008

GARCIA AND ASSOCIATES 1 SAUNDERS AVENUE PHONE 415.458.5805
SAN ANSELMO, CA 94960 FAX 415.458.5829

October 8, 2008

Monterey County Historical Society
P.O. Box 3576
Salinas, CA 93912

Re: PG&E Crazy Horse Substation and Switchyard Project

Dear Monterey County Historical Society:

Garcia and Associates (GANDA) is providing cultural resource consulting to Pacific Gas and Electric Company (PG&E) for the Crazy Horse Substation and Switchyard Project. The project area lies within Monterey County on the San Juan Bautista and Prundale CA 7.5 minute USGS Quadrangle (see attachment), north of Salinas. There is no Township, Range, or Section data available for this project area; however the project location falls within parts of the Bolsa Nueva Moro Cojo, Los Vergeles, La Natividad, and Bolsa Del Las Escorpinas land grants.

We are requesting that the Monterey County Historical Society conduct a search of its files and records regarding cultural resources within the Project area, and a list of individuals who might have interest or information concerning the Project area's prehistory and history.

Please contact me if your have any question regarding this project or if you requite any additional information.

Sincerely,

Jennifer Lang
Senior Architectural Historian
Garcia and Associates

GANDA