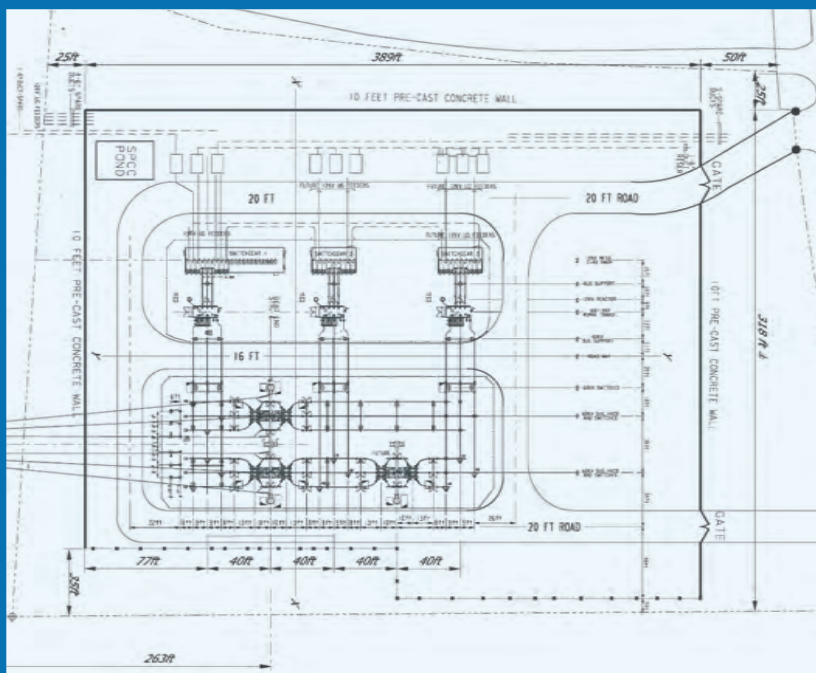




# Windsor Substation Project

## Final Mitigated Negative Declaration



Prepared for



Prepared by



October 2013

# **FINAL**

## **Mitigated Negative Declaration and Supporting Initial Study**

**for**

## **Pacific Gas and Electric Company's Windsor Substation Project**

**(A.10-04-024)**

**Lead Agency:**

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## **Appendix A. List of Preparers**

## **Appendix B. References**

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## **Appendix D. Notice of Intent**

## List of Acronyms

APM	Applicant Proposed Measure
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
BPA	Bonneville Power Administration
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCR	California Code of Regulations
CCWI	Community Clean Water Institute
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CSMP	Construction Site Monitoring Program
CTS	California tiger salamander
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DHS	Department of Health Services
DOC	Department of Conservation
DPA	Distribution Planning Area
DPM	diesel particulate matter
DPR	Department of Pesticide Regulation
DTSC	Department of Toxic Substances Control
EFZ	Earthquake Fault Zone
EHC	Environmental Health Criteria
EM	Environmental Monitor
EMF	electric and magnetic field
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FMP	Field Management Plan
FS/CAP	Feasibility Study/Corrective Action Plan



GANDA	Garcia and Associates
GHG	greenhouse gases
GO	General Order
HDD	Horizontal directional drilling
HSWA	Hazardous and Solid Waste Act
HWCL	Hazardous Waste Control Law
IARC	International Agency for Research on Cancer
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IS	Initial Study
IWMB	Integrated Waste Management Board
KOPs	Key Observation Point
LOS	level of service
MBTA	Migratory Bird Treaty Act
MMCRP	Mitigation Monitoring, Compliance, and Reporting Program
MND	Mitigated Negative Declaration
MRZ	mineral resource zone
MT	metric tonne
MVA	megavolt ampere
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Contingency Plan
NCRA	North Coast Railroad Authority
NERC	North American Electric Reliability Council
NESC	National Electrical Safety Code
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NSR	New Source Review
NWIC	Northwest Information Center
NWP	Nationwide Permit
NWPRR	Northwestern Pacific Railroad
OEHHA	Office of Environmental Health Hazard Assessment
PCB	polycarbonated biphenyl
PEA	Proponent's Environmental Assessment
PM10	respirable particulate matter
PM2.5	fine particulate matter
PTC	Permit to Construct
RCPA	Regional Climate Protection Authority
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases

RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SAVE	Spray Aeration and Vapor Extraction
SC	Service Commercial
SCADA	supervisory control and data acquisition
SCT	Sonoma County Transit
SMARA	Surface Mining and Reclamation Act
SMART	Sonoma-Marin Area Rail Transit
SPCC	spill prevention control and countermeasure
SRPCS	Santa Rosa Plain Conservation Strategy
SRRE	Source Reduction Recycling Element
SVE	Soil Vapor Extraction
SWGS	Solid Waste Generation Study
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
TSP	tubular-steel pole
UBC	Uniform Building code
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	underground storage tank
VOC	volatile organic compound
VS/VC	Visual Sensitivity/Visual Change
WECC	Western Electricity Coordinating Council
WFPD	Windsor Fire Protection District
WHO	World Health Organization
WMP	Water Master Plan
WUSD	Windsor Unified School District

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



# Mitigated Negative Declaration

## Pacific Gas & Electric Company's Windsor Substation Project Application No. A.10-04-024

### 1. Mitigated Negative Declaration

#### 1.1 Introduction to Mitigated Negative Declaration

Pursuant to California Environmental Quality Act (CEQA), California Public Resources Code § 21000 et seq., the California Public Utilities Commission (CPUC) must prepare an Initial Study (IS) for the proposed project to determine if any significant adverse effects on the environment would result from project implementation. The IS uses the significance criteria outlined in Appendix G of the State CEQA *Guidelines*, 14 CCR § 15000 et seq. If the IS for the project indicates that a significant adverse impact could occur, the CPUC would be required to prepare an Environmental Impact Report.

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

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

Based on the analysis in the IS, it has been determined that all project-related environmental impacts could be reduced to a less than significant level with the incorporation of feasible mitigation measures. Therefore, adoption of a Mitigated Negative Declaration (MND) will satisfy the requirements of CEQA. The mitigation measures included in this MND are designed to reduce or eliminate the potentially significant environmental impacts described in the IS. Where a measure described in this document has been previously incorporated into the project, either as a specific project design feature or as an Applicant Proposed Measure (APM), this is noted in the discussion. Mitigation measures are structured in accordance with the criteria in Section 15370 of the CEQA *Guidelines*.

## 1.2 Project Description

The proposed project would include the following activities:

- ¾ Constructing a new three-bank 115/12 kV distribution substation (initially energized at 60 kV) on 2.6 acres of a 4.1 acre property in the Town of Windsor, California;
- ¾ Connecting the new substation to the existing nearby Fulton No. 1 60 kV transmission line (via a 270-foot 60 kV power line loop);
- ¾ Installing underground distribution line vaults and conduits for current and future use;
- ¾ Installing 3 underground 12 kV circuits initially, with up to 9 additional circuits to be installed in the future as needed;
- ¾ Installing 700 feet (0.1 mile) of new underground distribution line;
- ¾ Rebuilding approximately 7,900 feet (1.5 miles) of the existing Fulton No. 1 60 kV Power Line to hold a new double-circuit 12kV distribution line underneath existing higher voltage lines (underbuild); and
- ¾ Replacing conductors (reconductoring) on approximately 9,420 feet (1.8 miles) of existing overhead and underground single-circuit distribution line with 12 kV double-circuit conductor along Old Redwood Highway

## 1.3 Alternatives

The purpose of an alternatives analysis pursuant to CEQA is to identify options that would feasibly attain the project's objectives while reducing the significant environmental impacts resulting from the proposed project. CEQA does not require the inclusion of an alternatives analysis in MNDs because the IS concludes that, with incorporation of mitigation measures, there would be no significant adverse impacts resulting from the proposed project. Therefore, no alternatives analysis needs to be provided in the IS.

## 1.4 Environmental Determination

The IS was prepared to identify the potential environmental effects resulting from proposed project implementation, and to evaluate the level of significance of these effects. The Initial Study relies on information in PG&E's Proponent's Environmental Assessment (PEA), filed in April 2010; PG&E's supplemental PEA, filed in May 2011; project site reconnaissance by the CPUC environmental team in October 2011, and other environmental analyses.

PG&E identified measures— the Applicant Proposed Measures (APMs) — to address potentially significant impacts. These APMs are considered to be part of the description of the proposed project. Based on the IS analysis, additional mitigation measures are identified for adoption to ensure that impacts of the proposed project would be less than significant. The additional mitigation measures supplement or supersede the APMs. PG&E has agreed to implement all of the additional recommended mitigation measures as part of the proposed project.

Implementation of the following mitigation measures would avoid potentially significant impacts identified in the IS or reduce them to less than significant levels.



### *Mitigation Measures for Construction-Phase Air Quality*

- AQ-1**      **Implement measures to control dust and equipment exhaust during construction.** PG&E shall implement measures to control dust and vehicle exhaust during construction of the proposed substation. These measures shall incorporate Applicant Proposed Measures AQ-1 through AQ-12 and additionally shall include the following:
- <sup>3</sup>/<sub>4</sub> Limit the speeds of construction vehicles on unpaved surfaces to 15 miles per hour.
  - <sup>3</sup>/<sub>4</sub> Limit size of area subject to excavation, grading, or other construction disturbance at any one time to avoid excessive dust; paving shall occur as soon as possible after grading.
  - <sup>3</sup>/<sub>4</sub> Provide BAAQMD phone number in a visible location. Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. PG&E shall report to the CPUC within 1 week regarding complaints and corrective action taken.
  - <sup>3</sup>/<sub>4</sub> Construction equipment will be properly maintained. All offroad construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program will meet at a minimum the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1).

### *Mitigation Measure for Biological Resources*

- B-1**      **Conduct environmental training, pre-construction surveys, and biological resources monitoring.** As described in APM BIO-1, ongoing special-status species/sensitive habitat education program for construction crews will be conducted by a qualified biologist (approved by CPUC) prior to the commencement of the project and during construction activities. Sessions will include discussion of the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA), the consequences of noncompliance with these acts, identification and values of habitats, and the importance of keeping all project activities and sediments within the designated work area. These requirements are supplemented by the following: training shall also address California Species of Special Concern and brochures addressing all potentially affected special-status species shall be provided to all crew members (in multiple languages if appropriate).

As described in APM BIO-4, pre-construction surveys for special-status species shall be conducted prior to the start of construction. These requirements are supplemented by the following: pre-construction surveys shall be conducted by a qualified biologist (approved by CPUC) within 7 days of construction activities. If special-status species are found, CDFW, USFWS, and the CPUC shall be notified within 24 hours and consulted, as appropriate, to confirm appropriate avoidance measures. Project construction (in area where a special-status species is found) shall not begin until the qualified biologist determines that the required or appropriate avoidance, minimization, and mitigation measures have been implemented.

As described in APM BIO-5, a biological monitor shall be present during grading activities and installation of the silt fence around the proposed substation site perimeter and needed areas along the distribution line alignment. The monitor will complete daily reports summarizing construction activities and environmental compliance. These

requirements are supplemented by the following: monitoring shall be conducted by a qualified biologist (approved by CPUC). Daily biological monitoring shall be required during all construction activities near sensitive resources, including special-status species, wetlands, vernal pools, and oak woodlands. If appropriate (based on the phase and location of construction activities), PG&E may request that the CPUC allow less frequent monitoring.

## B-2

**Preserve special-status plants, wetlands and vernal pools.** Special-status plants identified in the survey area were all located within vernal pools. The following avoidance and minimization measures will be used to protect both listed special-status plants and to avoid impacts to wetlands and vernal pools:

- <sup>3</sup>/<sub>4</sub> Design project and construction activities to avoid impacts to wetlands and water features to the extent feasible.
- <sup>3</sup>/<sub>4</sub> Prior to the onset of construction activities, a qualified biologist (approved by the CPUC) shall delineate any wetland or water features within the right of way as environmentally sensitive areas using clear markers. Construction crews shall be provided with maps of environmentally sensitive areas.
- <sup>3</sup>/<sub>4</sub> PG&E shall employ best management practices to avoid wetland impacts. These BMPs may include using padding or vehicles with balloon tires or other protective measures if temporary access roads or other construction activities occur in wetland areas.
- <sup>3</sup>/<sub>4</sub> There are three pole replacement locations that are located near vernal pool habitat (see *Biological Resources Figure, map set – poles a7, a8 and a10*). The following additional avoidance measures will be used in these particular locations and in any additional areas where work is required in or adjacent to a vernal pool:
  - Any project activities at these locations shall only take place between June 15 and September 30, after a qualified biologist (approved by CPUC) determines that vernal pools are dry and special-status plant species have completed their entire lifecycle for the year (i.e., seeds have set).
  - A qualified biologist (approved by the CPUC) shall be present during construction activities within the vicinity of these three locations. The biologist shall ensure that fencing remains intact and that construction activities do not affect the delineated vernal pool areas.
  - In the event that it is infeasible to completely avoid a vernal pool, and any associated listed plant species, PG&E will use the following additional avoidance measures: (1) No construction equipment will enter the vernal pool; and (2) Tarps will be placed over the vernal pool to ensure that no excavated soil mixes with the vernal pool vegetation and soils when the pole is removed.
  - The following additional avoidance measures will be used at one pole replacement (see *Biological Resources Figure, map set – pole a10*), which is located adjacent to a vernal pool: (1) The exposed hole from the removed pole will be filled with a clay material that supports vernal pool re-establishment; and (2) The new pole will be installed as far outside of the vernal pool as feasible.

**Compensatory mitigation for special-status plants.** If impacts to listed plants cannot be avoided, PG&E shall work with CFDW and USFWS to ensure that the impact is fully miti-

gated with compensation measures that are consistent with the Santa Rosa Plain Conservation Strategy, as applicable; these measures may include: habitat acquisition and long-term habitat enhancement, purchase of mitigation credits at mitigation banks approved by CDFW and USFWS to mitigate for the plant species impacted. Any necessary mitigation strategy will include adequate funding to ensure long-term management and monitoring.

**Compensatory mitigation for vernal pools.** If impacts to wetlands and vernal pools cannot be completely avoided, PG&E will consult with the appropriate agencies to ensure that there is no net loss of wetlands or vernal pools. In consultation with the appropriate resource agencies, PG&E may take the following actions to ensure the no net loss of wetlands or vernal pools, including (1) purchase of mitigation credits in an agency-approved wetlands mitigation bank with a service area that includes the project site, or (2) creation of wetlands according to an agency-approved plan. Any created wetlands shall emulate wetlands affected by the project. Any wetland preserve established on or offsite shall be permanently protected through fee title transfer to a qualified agency or conservation organization, through recordation of a conservation easement deed over the protected property, or some similar deed restriction. Prior to any ground disturbance, a wetland creation and preservation plan shall be approved by the applicable resource agencies.

**B-3 Identify and relocate northwestern pond turtles.** If northwestern pond turtles are found near any proposed construction areas, impacts to individuals and their habitat shall be avoided to the extent feasible. To avoid impacts to occupied habitat, an exclusion zone shall be established around the habitat and temporary plastic fencing shall be installed around the buffer area with "Sensitive Habitat Area" signs posted and clearly visible on the outside of the fence. If avoidance is not possible and the species is determined to be present in work areas, the biologist (approved by the CPUC) shall capture turtles prior to construction activities and relocate them to nearby, suitable habitat (the closest water body) out of harm's way (e.g., upstream or downstream from the work area). PG&E shall consult with CDFW regarding any required relocation of western pond turtles.

If deemed necessary by the on-site biological monitor, exclusion fencing shall be installed to prevent turtles from re-entering the work area. For the duration of work in these areas the biologist should conduct regular follow-up visits (at least once per week) to monitor effectiveness and take appropriate corrective action if protection measures are not adequate.

**Milestones and Monitoring.** Preconstruction surveys shall be conducted by qualified biologist (approved by CPUC) before ground disturbance. Any exclusion fencing that is installed to prevent western pond turtles from entering the work areas will be inspected by the on-site biological monitor to maintain the integrity of the fence. Monitoring of habitat and exclusion fencing shall be conducted by a qualified biological monitor during construction activities as necessary.

**B-4 Protect nesting birds.** If construction activities occur during the avian nesting season (February 1 through September 15), a preconstruction survey for nesting birds (including raptors) shall be conducted by a qualified wildlife biologist (approved by the CPUC) 7 days or less before the start of vegetation removal or trimming and ground-disturbing construction activities, and prior to the start or re-start of construction in any

new work area. If there is no work in an area for 7 days, it will be considered a new work area if construction or vegetation trimming or removal begins again. At least 10 days before construction activities begin during nesting season, PG&E shall confer with CPUC and CDFW on nesting bird survey methodology. Survey will be submitted to CPUC for record keeping.

No additional measures will be implemented if active nests are more than the following distances from the nearest work site: (a) 500 feet for raptors, or (b) 250 feet for passerine birds. Buffers shall not apply to construction-related traffic using existing roads that is not limited to project-specific use (i.e., county roads, highways, farm roads, etc.).

All references in this mitigation measure to wildlife biologists refer to qualified biologists approved by the CPUC; these biologists may be PG&E employees or subcontractors. References to independent avian biologists refer to qualified avian biologists approved by the CPUC who report directly to CPUC.

**Buffer reduction.** The specified buffer sizes for birds may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity) and as determined by a qualified wildlife biologist that implementation of a specified smaller buffer distance will still avoid project-related "take" (as defined by Fish and Game Code Section 86). Requests to reduce standard buffers must be submitted to the independent avian biologist(s) to be reviewed in coordination with the California Department of Fish and Wildlife (CDFW). Requests to reduce buffers must include: the species, location, size and expected duration of proposed buffer reduction, reason for the buffer reduction, the name and contact information of the qualified wildlife biologist(s) who request the buffer reduction and will conduct subsequent monitoring. The independent avian biologist shall respond to PG&E's request for a buffer reduction within 24 hours.

Non-special status species found building nests within the standard buffer zone *after specific project activities begin*, shall be assumed tolerant of that specific project activity and such nests will be protected by the maximum buffer practicable (as determined by the qualified biologist). However, these nests shall be monitored on a daily basis by a qualified biologist until the qualified biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the buffer zone (whichever occurs first). If the qualified biologist determines that the nesting bird(s) are not tolerant of project activity, the standard buffer shall be implemented. As appropriate, exclusion techniques may be used for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment.

If nesting birds show signs of distress within a reduced buffer zone and that stress appears to be related to construction activities, the qualified wildlife biologist shall reinstate the recommended buffers. The recommended buffers may only be reduced again following the same process as identified above after the qualified biologist has determined that the nesting birds are no longer exhibiting signs of stress. Reporting regarding reduction of buffers will be documented in the monthly report.

**Listed and Fully Protected Species.** If the qualified wildlife biologist determines that there are nests of listed or fully protected bird species within 500 feet of project



activities, consultation with CPUC and CDFW (and USFWS as appropriate) shall be required to discuss how to implement the project and avoid “take.” If avoidance of state or federally listed species is not feasible, the applicant shall work with CDFW and and/or USFWS (as appropriate) to determine the necessary avoidance measures and possibly to obtain take authorization, as appropriate and necessary.

***Monitoring and reporting.*** All nests with a reduced buffer shall be monitored on a daily basis by a qualified wildlife biologist until the biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the reduced buffer (whichever occurs first). A monthly written report shall be submitted to CDFW and CPUC. Monthly reports shall include: all of the information included in buffer reduction requests in addition to duration of buffer reduction, and outcomes for nests, eggs, young and adults during construction within a reduced buffer. No reporting will be required if construction activities do not occur within a reduced buffer during any calendar month. A final report shall be submitted to CDFW and CPUC at the end of each nesting season summarizing all monitoring results and outcomes for the duration of project construction.

**B-5**

**Protect special-status bats.** Before the spring breeding season and prior to construction, a qualified biologist (approved by the CPUC) shall conduct a survey for roosting bat habitat. The survey shall include work areas adjacent to appropriate roosting habitat and are accessible from public or project areas within 200 feet of a work area. For trees considered to have a high or moderate probability for bat roosting, acoustic monitoring shall be conducted before any construction activities begin during the breeding season to determine if there are any roosting sites present. Surveys shall be conducted at the appropriate times to maximize detectability. At least ten days before surveys begin, PG&E shall confer with CPUC and CDFW on bat survey methodology. Survey will be submitted to CPUC for record keeping.

Note: All references in this mitigation measure to biologists or biological monitors refer to qualified biologists approved by the CPUC; these biologists may be PG&E employees or contractors. References to independent biologists refer to qualified biologists approved by the CPUC who report directly to the CPUC.

If an active roost or maternity roost is found within 100 feet of a work area, the limits of the work area will be clearly marked and a qualified biological monitor shall remain on-site during construction activities within the vicinity of the roost or maternity roost. The biologist shall ensure that construction activities do not encroach upon the 100 foot buffer around an active roost or maternity colony site. Buffers shall remain in place until the qualified biologist has determined that bats have vacated the occupied roost sites.

Trees containing maternity roosts shall not be removed during the breeding season (March 1 through August 31) to avoid disturbing females with young that cannot fly. No trees containing maternity roosts may be removed until the qualified biologist determines that breeding is complete and young are able to fly.

Requests to reduce buffers or exclude bats shall be submitted to CPUC for review by the CPUC’s independent biologist in consultation with CDFW. The CPUC’s independent biologist shall respond to requests to reduce buffers within 24 hours and shall respond to requests to exclude bats within 5 days. Exclusion plans may include the following:

- ¾ If fall/winter hibernacula cannot be avoided, humane techniques may be implemented to passively vacate bats from roosts. Methods to passively evict bats from tree roosts may include incrementally trimming limbs to alter the air flow and temperature around the roost feature where slight changes to the surrounding environment of roost features encourage bats to vacate roost features on their own.
- ¾ If acoustic monitoring detects that bats are using trees that need to be cut down, exclusionary one-way doors shall be installed in late August, after completion of the maternity season. Roost trees shall be removed after it has been confirmed that roosting bats have departed.
- ¾ If a roost is lost, PG&E shall consult with the CDFW to see to see if additional compensation for loss of habitat is required. Required compensation may include bat boxes be installed in the vicinity of the cut tree.

If an exclusion plan is approved by the independent biologist (in consultation with CDFW), PG&E shall submit a report to CPUC and CDFW after exclusion activities are completed describing the exclusion process and bat behavior after the implementation of the exclusion plan. All exclusion activities shall be closely monitored by the qualified biologist.

If buffer reductions are requested and approved, a monthly report shall be submitted to CPUC and CDFW with all of the information in the buffer reduction requests, monitoring results, and effects on bats. Reports shall be submitted for the duration of construction activities within buffer areas.

#### *Mitigation Measures for Cultural Resources*

- C-1**      **Mark limits of project area near known cultural resources.** In areas near identified cultural resources, a qualified cultural resources specialist (approved by the CPUC) shall mark the limits of the project area with visible flagging tape. The construction crews shall be instructed that no vehicle access, travel, equipment staging, storage, or other construction-related work shall occur outside the flagged areas to ensure that known historic resources are not inadvertently damaged during implementation of the project.
- Pal-1**     **Avoid previously unidentified paleontological resources.** If paleontological remains are discovered during construction, construction will cease or be directed away from the discovery, and the potential resource will be evaluated by a qualified paleontologist. The paleontologist will recommend appropriate measures to avoid, record, preserve, or recover the resource/s.

#### *Mitigation Measure for Hazards and Hazardous Materials*

- Haz-1**      **If contaminated soil is encountered, ensure proper sampling, data review, regulatory coordination, and documentation of compliance.** If construction crews uncover unanticipated buried contaminated soils, rock, or groundwater during substation construction or excavation activities associated with distribution work, samples shall be collected by an OSHA-trained technician with a minimum of 40-hours hazardous material site worker training. Laboratory data from suspected contaminated material shall be reviewed by the contractor's Health and Safety Officer and/or PG&E's representative and they shall coordinate with the appropriate regulatory agency if contamination is confirmed, to deter-

mine the suitable level of worker protection and the necessary handling and/or disposal requirements.

If during grading or excavation work, the contractor observes visual or olfactory evidence of contamination in the exposed soil, a report of the location and the potential contamination, results of laboratory testing, recommended mitigation (if contamination is verified), and actions taken shall be submitted to the CPUC for each event. This report shall be submitted within 30 days of receipt of laboratory data.

### ***Mitigation Measure for Water Quality***

**H-1 Construction Site Dewatering.** If groundwater is encountered during construction activities, dewatering shall be performed in accordance with the 2011 or most recent version of the *Construction BMP Handbook/Portal* prepared by the California Stormwater Quality Association (CASQA), and shall include, as applicable, the use of sediment traps and sediment basins.

### ***Mitigation Measure for Land Use***

**LU-1 Provide advance notice of construction.**

*Advance Notice.* Prior to construction, the Applicant shall give at least 10 ~~30~~ days advance notice of the start of any construction-related activities. Notification shall be provided by posting signs along affected roadsides to tell the public about the work. The posted signs shall:

<sup>3</sup>/<sub>4</sub> Describe where and when construction is planned;

<sup>3</sup>/<sub>4</sub> Provide contact information for a point of contact for complaints related to construction activities.

Prior to commencing ground disturbing activities, the Applicant shall submit a copy of the template used for the posted sign.

*Reporting of Complaints.* The Applicant shall document all complaints and strategies for resolving complaints in regular reporting to the CPUC.

### ***Mitigation Measures for Construction Noise***

**N-1 Avoid unnecessary construction traffic noise.** Where feasible, construction traffic shall be routed to avoid noise-sensitive areas, such as residences, schools, religious facilities, hospitals, and parks.

### ***Mitigation Measures for Construction Traffic and Transportation***

**T-1 Restrict lane closures.** PG&E shall restrict all necessary lane closures or obstructions on major roadways associated with overhead or underground construction activities to off-peak periods in congested areas to reduce traffic delays. Lane closures must not occur between 6:00 and 9:30 a.m. or between 3:30 and 6:30 p.m., unless otherwise authorized in writing by the responsible public agency issuing an encroachment permit.

**T-2 Ensure emergency response access.** PG&E shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services serving the project area shall be notified 30 days in advance by PG&E of the proposed locations, nature,

timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where roads will be temporarily blocked, work crews shall be ready at all times to accommodate emergency vehicles through immediately stopping work for emergency vehicle passage and/or facilitating the use of short detours and alternate routes in conjunction with local agencies.

**T-3 Consult with SCT and SMART.** PG&E shall consult with Sonoma County Transit District at least one month prior to construction to reduce potential interruption of bus transit services. If necessary, PG&E shall arrange for transit bus routes to be temporarily rerouted until construction in the vicinity is complete. PG&E shall obtain approval from SMART to encroach on the railroad right-of-way.

A Mitigation Monitoring Plan (Section 6 of the IS) has been prepared to ensure that the APMs and mitigation measures presented in this IS are properly implemented. The plan describes specific actions required to implement each measure, including information on timing of implementation and monitoring requirements.

Based on the analysis and conclusions of the IS, the impacts of the project as proposed by PG&E would be mitigated to less than significant levels with the implementation of the mitigation measures presented herein, which have been incorporated into the proposed project.

## 2. Environmental Determination

### 2.1 Environmental Factors Potentially Affected


The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" and requiring implementation of mitigation as indicated by the checklist on the following pages.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Aesthetics                        | <input checked="" type="checkbox"/> Agriculture & Forestry Resources | <input checked="" type="checkbox"/> Air Quality                        |
| <input checked="" type="checkbox"/> Biological Resources   | <input checked="" type="checkbox"/> Cultural Resources               | <input type="checkbox"/> Geology/Soils                                 |
| <input type="checkbox"/> Greenhouse Gas Emissions          | <input checked="" type="checkbox"/> Hazards & Hazardous Materials    | <input checked="" type="checkbox"/> Hydrology/Water Quality            |
| <input checked="" type="checkbox"/> Land Use/Planning      | <input type="checkbox"/> Mineral Resources                           | <input checked="" type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population/Housing                | <input checked="" type="checkbox"/> Public Services                  | <input type="checkbox"/> Recreation                                    |
| <input checked="" type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems                   | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

### 2.2 Environmental Determination

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

  
 Eric Chiang, Project Manager  
 Energy Division CEQA Unit  
 California Public Utilities Commission

10/2/13

Date

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## 3. Introduction to the Initial Study

Pacific Gas and Electric Company (PG&E), a regulated California utility, filed an application (A.10-04-024) with the California Public Utilities Commission (CPUC) on April 21, 2010, for a Permit to Construct (PTC) the Windsor Substation Project (proposed project). The application was deemed complete by the CPUC on May 20, 2010. Subsequently, on May 26, 2011, PG&E submitted a Supplemental PEA to include alternative project locations. Following public meetings in August 2011, the Town of Windsor indicated support for the site addressed in this Initial Study (IS). The application was formally amended by PG&E on December 5, 2011, with this new location as the proposed project site. The CPUC is the lead agency for review of the project under CEQA because it must make a decision whether to adopt the MND and to approve or deny the PTC.

### 3.1 Environmental Analysis

The IS presents an analysis of potential effects of the proposed project on the environment. The IS is based on information from PG&E's Proponent's Environmental Assessment (PEA) and Supplement to the PEA and associated submittals, site visits, CPUC data requests, and additional research and analysis. Construction activities and project operation could have direct and indirect impacts on the environment. The following environmental parameters are addressed based on the potential effects of the proposed project and potential growth-inducing or cumulative effects of the project in combination with other projects:

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| ¾ Aesthetics                      | ¾ Land Use and Planning              |
| ¾ Agricultural Resources          | ¾ Mineral Resources                  |
| ¾ Air Quality                     | ¾ Noise                              |
| ¾ Greenhouse Gases                | ¾ Population and Housing             |
| ¾ Biological Resources            | ¾ Public Services                    |
| ¾ Cultural Resources              | ¾ Recreation                         |
| ¾ Geology and Soils               | ¾ Traffic and Transportation         |
| ¾ Hazards and Hazardous Materials | ¾ Utilities and Service Systems      |
| ¾ Hydrology and Water Quality     | ¾ Mandatory Findings of Significance |

The IS has been organized into the following sections:

- ¾ Section 3: Introduction. Provides an introduction and overview describing the proposed project and the CEQA process, and identifies key areas of environmental concern.
- ¾ Section 4: Project Description. Presents the project objectives and provides an in-depth description of the proposed project, including construction details and methods.
- ¾ Section 5: Environmental Analysis and Mitigation. Includes a description of the existing conditions and analysis of the proposed project's potential environmental impacts, and identifies mitigation measures to reduce potentially significant impacts to less than significant levels.
- ¾ Section 6: Mitigation Monitoring Plan. Includes applicant proposed measures (APMs) and mitigation measures that PG&E must implement as part of the project, actions required to implement these measures, monitoring requirements, and timing of implementation for each measure.
- ¾ Appendix A: List of Preparers.
- ¾ Appendix B: References.
- ¾ Appendix C: Figures

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## 4. Project Description

Pacific Gas & Electric Company (PG&E) is proposing to build a new 115/12 kilovolt (kV) distribution substation in the Fulton-Fitch Mountain Distribution Planning Area (DPA).<sup>1</sup> The Windsor Substation would provide a capacity increase of 89.1 megawatts (MWs) at ultimate build-out. The proposed substation site is on Old Redwood Highway in the Town of Windsor in Sonoma County, six miles from the existing Fulton Substation and three miles from the existing Fitch Mountain Substation. The Windsor Substation would step-down power from 60 kV to 12 kV for local distribution. In addition to constructing and operating the substation, PG&E would improve its 12 kV distribution system in the project area. In the future, the substation would be upgraded to 115 kV from the initial 60 kV, and the step-down would be from 115 kV to 12kV. See Figure 4-1 for a Project Overview Map and Figure 4-2 for a Proposed Substation Site Aerial Map. (All figures are found in Appendix C.) The proposed project would include the major activities described in Section 1.2 above.

As demand increases for electric power in the future, additional equipment would be installed at the substation and conductors would be installed in the conduits constructed as part of the proposed project. The substation would be designed and built to accommodate the future equipment; therefore, limited construction would be required for the future upgrades. Because the existing Fulton No. 1 60 kV line was built to 115 kV standards, only minor changes at the Windsor Substation would be required to establish the 115 kV circuit. At the time of the transmission line upgrade, the Windsor Substation 60 kV transformer would be replaced with a 115 kV transformer. PG&E anticipates a new transformer bank would be installed every five to 10 years after the installation of the preceding bank. New distribution circuits would be installed after each new bank is installed and would occur over several years. The specific equipment required for the fully constructed three-bank substation is outlined in Section 4.9 (Project Components). The locations of the proposed substation and distribution line upgrades are shown in Figure 4-3.

The proposed Windsor Substation would be located on a 4.11-acre privately-owned parcel. The site is zoned Service Commercial (SC), and it contains asphalt paving and concrete foundations from a previous structure. Currently, 3.83 acres of the 4.11-acre parcel are fenced. The permanent fenced footprint of the substation would be approximately 2.6 acres. The north, east, and west sides of the substation would be bordered by 10-foot tall prefabricated perimeter walls. The south side would be enclosed by a chain-linked fence. During construction, the entire 4.11-acre site would be used for parking and for lay down and staging of construction materials and equipment; no additional lay down areas would be required outside of the property.

The proposed project would include work outside of the substation footprint:

- Access to the substation property would be from Old Redwood Highway and Herb Road (public section). Pole replacement and line work would occur along Old Redwood Highway, Starr Road, and Gumview Road, Wilcox Road, Starr Circle, Railroad Avenue and Joni Court.
- An existing wood pole on the Fulton No. 1 60 kV Power Line located across the railroad tracks west of the Windsor Substation site would be replaced with a new tubular-steel pole (TSP).
- Underground distribution lines would connect the substation to existing and future infrastructure.
- Approximately 1.5 miles of the existing Fulton No. 1 60 kV Power Line would be rebuilt. This would require replacing 39 wooden poles (with 38 wood poles and 1 steel pole) and installation of 2 new wood riser poles.

<sup>1</sup> The Fulton-Fitch Mountain DPA serves northern Santa Rosa, Windsor, and the greater Larkfield-Wikiup area.

- Approximately 1.8 miles of existing distribution line with 12 kV double-circuit conductor along Old Redwood Highway would be reconducted. This would require replacement of 44 wooden poles with taller wood poles and the installation of 3 additional wood riser poles.

Please note: Dimensions and pole numbers identified in the Project Description and elsewhere in the IS/MND are approximate because final engineering is not yet complete. Slight changes may be necessary based on final engineering requirements, but any changes would comply with applicable regulations, applicant proposed measures, and mitigation measures.

The replacement TSP would be used to loop<sup>2</sup> the existing Fulton No. 1 60 kV power line from its position west of the Northwestern Pacific Railroad (NWPRR) over the tracks and into the substation. A 270-foot, 60 kV power line loop would be built between the TSP and the new substation. Distribution circuits and proposed improvements are described in Section 4.9.4 (Distribution Lines).

Offsite, distribution line undergrounding, pole placement and replacement, and reconductoring would take place primarily in public rights-of-way. Access to conduct construction activities at individual pole locations along the Fulton No. 1 60 kV Power Line may require the installation of a temporary access road along the power line route and from the power line across the southern edge of the vacant parcel west of the substation site (Site Alternative 6 in Section 4.18) to Herb Road. This access road will be within the 45-foot-wide corridor extending 500 feet east from Herb Road shown in Figure 5.4-1 (Biological Resources Mapset). An easement would be required over the railroad to install the loop linking the existing 60 kV line and the substation.

## 4.1 Project Title

Pacific Gas & Electric Company's Windsor Substation Project

## 4.2 Project Sponsor's Name and Address

Pacific Gas & Electric Company (PG&E)  
245 Market Street  
Mail Code N10A  
San Francisco, California 94105

## 4.3 Lead Agency Name and Address

California Public Utilities Commission  
Energy Division  
505 Van Ness Avenue, Fourth Floor  
San Francisco, California 94102

## 4.4 Lead Agency Contact Person and Phone Number

Eric Chiang, Project Manager  
Energy Division  
California Public Utilities Commission  
505 Van Ness Avenue, Fourth Floor  
San Francisco, California 94102  
(415) 703-1956

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<sup>2</sup> Looping is the term used for tying a substation into an existing transmission line by opening the line and looping it into and out of the substation, thereby providing a circuit through the substation. A looped line feeds all the power carried on the line into the substation. A step-down substation transforms the power to a lower voltage for distribution.

## 4.5 Project Location

The proposed Windsor Substation would be located at 10789 Old Redwood Highway in the Town of Windsor, Sonoma County. The property is 850 feet west of Highway 101. The substation property is bounded by Herb Road on the northwest, rural residential on the north, Old Redwood Highway on the northeast, a school bus yard on the southeast, and the Northwestern Pacific Railroad (NWPRR) and rural residential areas on the west.

## 4.6 Project Objectives

PG&E has defined the basic objectives of the proposed project as follows:

- **Meet Immediate Capacity Needs:** Provide the necessary electric distribution capacity to serve existing and new customers within and around Windsor in the Fulton-Fitch Mountain 12 kV DPA.
- **Meet Long-Term Capacity Needs:** Eliminate electric distribution capacity deficiencies expected to occur beyond 2012.
- **Construct a New Substation to Reinforce Existing System:** Maximize system efficiency and increase future flexibility by constructing a new distribution substation within the limits of the DPA and approximately three to five miles from the existing distribution substations.
- **Construct a New Substation Near Load Growth:** Minimize ratepayer costs and environmental impacts, and maximize system efficiency and reliability by locating the new substation near the center of the load growth so that distribution circuit routes are short.

## 4.7 Purpose and Need

The Windsor Substation Project is needed to meet projected electric demand in the Fulton-Fitch Mountain DPA. The project would help ensure the ability of the regional electrical system to safely and reliably serve the area without interruptions or emergency conditions that could otherwise result.

Under Federal Energy Regulatory Commission (FERC), North American Electric Reliability Council (NERC), Western Electricity Coordinating Council (WECC), and CPUC rules, guidelines, and regulations, electrical transmission systems must have sufficient capacity to maintain safe, reliable, and adequate service to customers. The safety and reliability of the system must be maintained under normal conditions (base case), when all facilities are in service, and also under abnormal conditions (both likely and unlikely contingencies) that can result from equipment or line failures, maintenance outages or outages that cannot be predicted or controlled due to weather, earthquakes, traffic accidents, and other unforeseeable events.

The Fulton-Fitch Mountain 12 kV DPA currently is served by the Fulton and Fitch Mountain Substations. These substations are built out to maximum capacity. There is continuing residential, commercial, and light-industrial growth in the area, contributing to increasing demand for electricity. The current annual growth rate in demand for electricity is 1.8 MW/year. At the Fulton Substation banks 5 and 6 there is a projected electricity supply deficiency of 12 and 14 percent in 2013 (PG&E 2011-2013). The highest concentration of demand for electricity in the Fulton-Fitch DPA is within the Town of Windsor. The recent economic downturn has not substantially reduced growth and electricity demand in this area (PG&E 2010).

## 4.8 Setting and Surrounding Land Uses

The Town of Windsor, incorporated in 1992, is the fourth largest town in Sonoma County. Until the 1980s, much of the area surrounding Windsor was agricultural. In 2010, Windsor had a population of 26,801 (CADO 2011).

Local land use plans and zoning are considered in this analysis in order to assist the CPUC in determining the proposed project's consistency with local policies. However, local discretionary permits (such as conditional use permits) and an evaluation of local plan consistency are not required for the proposed project because the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of public utilities. The long-term land use and development goals for Windsor are identified in the Town of Windsor General Plan (Town of Windsor 2005). Land use designations in the vicinity of the site are shown in Figure 5.10-1 (General Plan Map) and discussed in Section 5.10 (Land Use).

The proposed substation site is zoned Service Commercial. "Utility infrastructure" is an allowed use in the Service Commercial Zoning District. The school bus yard to the south is zoned for Public Institutional use. Land to the west are zoned Estate Residential, and land to the east, on the east side of Old Redwood Highway, are zoned Gateway Commercial. Lands to the north and west of Herb Road are outside of the Town of Windsor jurisdiction in unincorporated Sonoma County. These properties are zoned for Rural Residential in the Sonoma County land use plan.

The adjacent parcels to the north and west each contain two single-family dwellings. There also is one residence on the east side of Old Redwood Highway (in the area zoned Gateway Commercial). The nearest homes are approximately 60 feet north and 160 feet west of the project property boundary and 125 feet north and 200 feet west of the proposed substation fenceline. Homes to the north are separated from the site by Herb Road and homes to the west are separated from the site by the railroad tracks. The home to the east of the site is approximately 265 feet from the project property boundary and 355 feet from the proposed fenceline; this home is separated from the site by Old Redwood Highway and a row of trees. See Figure 4-2 for an aerial view of the site. See Figure 5.12-1 for a map of residences in the project area.

### 4.8.1 Zoning

#### Town of Windsor Zoning Ordinance, Section 27.10.020

**D. SC (Service Commercial).** The SC zoning district is applied to areas suitable for land intensive personal and business service uses, including automobile repair shops, construction equipment sales and rental yards, service stations, and outdoor recreation uses. The SC zoning district is consistent with the Service Commercial land use classification of the General Plan.

#### Section 27.06.040 – Exemptions from Land Use Permit requirements

**8. Utilities.** The erection, construction, alteration, or maintenance by a public utility or public agency of underground or overhead utilities intended to service existing or nearby approved developments shall be permitted in any zoning district. These include: water; gas; electric; telecommunication; supply or disposal systems; including wires, mains, drains, sewers, pipes, conduits, cables, fire-alarm boxes, police call boxes, traffic signals, hydrants, etc., but not including new transmission lines and structures. Satellite and wireless communications antennas are subject to Section 27.34.200 (Telecommunications Facilities).



## Section 27.28.040 – Landscape Area Requirements

Landscaping shall be provided in the locations specified below except for single-family uses.

**A. Setbacks.** All setback and open space areas required by this Zoning Ordinance and easements for utilities, and drainage courses shall be landscaped, except where a required setback is screened from public view or it is determined by the [Town Planning] Director that landscaping is not necessary to fulfill the purposes of this Chapter.

**B. Unused areas.** All areas of a project site not intended for a specific use, including pad sites in shopping centers held for future development, shall be landscaped unless it is determined by the [Town Planning] Director that landscaping is not necessary to fulfill the purposes of this Chapter.

## 4.9 Project Components

### 4.9.1 Windsor Substation

The Windsor Substation would consist of electrical equipment needed to operate the substation and distribution lines, a looped transmission line into and out of the substation, and distribution lines out of the substation. The fenced footprint of the facility would cover approximately 2.6 acres. Site access would be via paved driveways to two gates on the east side of the site, from Old Redwood Highway. The proposed substation layout is shown in Figure 4-4, and the substation profile is shown in Figure 4-5.

Electrical equipment required for the three-bank substation would consist of the following at ultimate 115 kV build-out:

- Three 115 kV bus structures
- Six 115 kV circuit breakers
- Three 115/12 kV power transformers
- Eighteen 115 kV disconnecting switches
- Three 12 kV metal-clad switchgear enclosures
- Twelve 12-kV distribution circuits
- Three 30 MVA power transformers
- Connection of the new substation to an existing 60 kV powerline by way of a new tubular steel pole [TSP] replacing an existing wood pole)
- Two 42-foot-high dead-end structures within the substation supporting the 60 kV powerline entering and exiting the substation

PG&E would also install other necessary electric equipment at the substation, including neutral grounding reactors, instrument transformers, protective relaying, metering and control equipment, remote supervisory control and data acquisition (SCADA) equipment, telemetering equipment, an auxiliary alternating current and direct current power system, an electric grounding system, and underground conduits or trench systems.

The tallest equipment in the substation would be the two 42-foot-tall dead-end structures supporting the looped lines. One switchgear enclosure would be 75 feet long, 18 feet wide, and 12 feet high, and two other switchgear enclosures would be each 28 feet long, 18 feet wide, and 12 feet high. The switchgear enclosures would house sensitive recording and communication equipment that requires weather protection. They also would house the controls and relays for the 115 kV lines and circuit breakers and

the 12 kV switchgear for the initial distribution circuits. Switchgear enclosures would be covered in steel sheeting with sloped roofs. All structures and equipment in the substation would be a non-reflective gray color.

Each transformer would contain up to 5,000 gallons of mineral oil, which would be circulated to cool the transformers. The mineral oil would not contain polychlorinated biphenyls (PCBs). A spill prevention control and countermeasure (SPCC) basin would be installed to contain the mineral oil in the event of a release from any one transformer. The SPCC basin would be designed to contain 110 percent of the transformer's coolant (mineral oil) volume. The initial transformer would contain 5,000 gallons of coolant; therefore, the basins would be designed to contain 5,500 gallons. If a transformer installed at the substation in the future has a larger volume of mineral oil than 5,000 gallons, the SPCC basins ~~would be~~ would be enlarged to accommodate the larger volume.

### 4.9.2 Site Access

During construction, access to the substation site and the power and distribution lines would be via Highway 101, Old Redwood Highway, Starr Road, Gumview Road, Herb Road (public section), and other minor side streets for short-term access to individual pole locations, as described in Section 5.16 (Transportation and Traffic). Access to the substation site would require driveways to be built off Old Redwood Highway. See Figure 4-4 for site layout. Temporary access roads from Herb Road parallel to the Fulton No. 1 60 kV Line and along Old Redwood Highway could be required to conduct construction at individual pole locations.

### 4.9.3 Perimeter and Landscaping

The substation would have an earth-tone decorative wall and new landscaping on three sides. This 10-foot-tall prefabricated concrete wall would be installed along the north, east, and west sides of the substation with entrance and exit gates on the eastern side, along Old Redwood Highway. The south side of the substation site would be enclosed by a chain-linked fence for security. Double swing entry and exit gates on the east side of the substation would be designed to blend with the wall. Wall designs and landscaping plans have been submitted to the Town of Windsor for review. As of January 2013, PG&E had received no comments on the proposed landscaping.

### 4.9.4 Lighting

Five sodium vapor lamps, mounted on substation structures and equipment, would provide security lighting. Exterior lighting would use non-glare light bulbs. The design and location of lighting fixtures would avoid casting light or generating glare off-site. On the east side of the substation, there would be 12-foot-tall free-standing light poles. Switchgear enclosure doors would also have fixed lights.

### 4.9.5 Drainage

Substation site grading during construction would alter existing onsite drainage patterns so that runoff from the proposed substation pad would flow into a Spill Prevention Control and Countermeasure (SPCC) retention pond on the western end of the site (near the railroad right-of-way). The location of this pond is shown in Figure 4-4 (Typical Three Bank Substation). From this pond, runoff would be pumped or directed into the existing drainage system along the northwestern boundary of the site, an underground concrete pipe that parallels Herb Road. Approximately 200 feet from Old Redwood Highway the underground pipe discharges into an existing 24-inch culvert under Herb Road. From there,

a drainage ditch extends approximately 300 feet to Sotoyome Creek. A second 24-inch culvert under a private lane exists between the project site and Sotoyome Creek. (PG&E 2011-2013)

Because the same retention basin would be used for oil capture and storm water management, the SPCC plan prepared in conjunction with detailed site planning would include engineered methods for containing and controlling a release from oil-filled electric equipment present at the proposed substation, including a water-collection system and retention basin equipped with an oil/water separator. If oil is present in the basin, a vacuum truck would be used to remove the oil for offsite disposal at a permitted facility. This collection and retention system would also regulate the release of stormwater runoff from the northern portion of the substation site (housing the transformers) and serve as a settling basin to reduce turbidity and sedimentation. Releases from this basin into the existing storm drain system would only be made when no oil or sediment would be released with the discharge.

In areas with no mineral oil-filled equipment, storm water not absorbed into the substation yard could flow to the fence around the site and soak into the ground on the remaining PG&E property. Site drainage and use of a SPCC retention pond would be consistent with the National Pollutant Discharge Elimination System (NPDES) and the project's Storm Water Pollution Prevention Plan (SWPPP), as well as local ordinances and best engineering practices. In addition, the substation design would incorporate SPCC Plan design requirements.

#### 4.9.6 Power Lines

To loop the existing Fulton No. 1 60 kV circuit into and out of the substation, an existing wood pole located on the 60 kV power line, approximately 270 feet west of the substation property, would be replaced with a new 75-foot-tall TSP. The pole would support a short power line looped to the substation's 42-foot-tall dead-end structures. This pole location would allow the lines looping into and out of the substation to comply with the railroad's requirement that the tracks be crossed at a right angle. More information on the appearance of the proposed substation and TSP is included in Section 5.1 (Aesthetics).

#### 4.9.7 Distribution Lines

Figure 4-3 (Aerial View of Project Components) shows the 12 kV distribution line reconductoring that would occur as part of the proposed project. Figure 4-3 also shows the locations of pole removals and replacements, underground conduits, and overhead line locations.

The substation would be designed to allow for twelve 12 kV distribution circuits to originate at the substation. Initially, three 12 kV distribution circuits would leave the substation underground. Based on current demand projections, it is estimated that up to nine additional distribution circuits would be installed out of the substation at an approximate rate of two circuits every other year. Provision would be made in the initial substation construction for these additional future circuits. The initial construction phase would include the installation of Circuits 1-3 and their associated vaults, as well as the installation of empty vaults and conduits that would be available for future Circuits 4 through 12, when required.

Circuit 1 would run west out of the substation in a conduit that connects to riser a1 (on the Fulton No. 1 60 kV Power Line); Circuit 1 would be 458 feet long. Circuit 3 would be 538 feet long; it would run in a conduit parallel to Circuit 1, but would extend further, to connect to riser a3. (Pole numbers are shown in Figure 5.4-1, Biological Resources Maps 1 through 10.) These two circuits, 1 and 3, would continue south mounted (underbuilt) on the Fulton No. 1 60 kV Power Line poles and would tie into an existing distribution line along Windsor River Road. To support the new double-circuit 12kV distribution

conductors, the existing Fulton No. 1 60 kV Power Line in this area would be rebuilt on taller wooden poles. This rebuild would require 39 new poles (38 wood replacement poles and 1 steel replacement pole) and 2 new risers.

Circuit 2 would head east in a conduit to pole b1, 620 feet from the substation. Beginning from pole b1, where Circuit 2 rises overhead, 1.8 miles of existing distribution line would be reconducted along Old Redwood Highway.<sup>3</sup> As part of the reconductoring, 44 existing wood poles would be replaced with new taller wood poles and 3 new riser poles would be installed along Old Redwood Highway. Circuit 2 would be undergrounded along Old Redwood Highway where there is existing undergrounding (320 feet at Rio Ruso, 270 feet at Dawn Way, and 480 feet at Godfrey Drive). Circuit 2 would ultimately tie into the existing main feeder line at Windsor River Road.

Initially, the nine future circuits would be stubbed and capped ~~at the Fulton No. 1 60 kV Power Line~~. The ultimate location of these circuits beyond their termination points will be determined in the future, based on demand and engineering. The partial installation of the nine future distribution-circuit conduits at this time would prevent future disruption of landscaping at the substation property. Four conduits for future circuits would parallel Circuit 1 and 3, heading west out of the substation (one empty conduit would be within the same trench as 1 and 3 and three empty conduits would be in a separate trench, offset approximately 6 feet). At the Fulton No. 1 60 kV Power Line they would be stubbed and capped within PG&E's existing easement. The other five future circuit conduits would parallel Circuit 2, heading east out of the substation (with two of the empty conduits located in the same trench as Circuit 2, and three empty conduits located in a separate trench, offset approximately 6 feet). The conduits for the circuits heading east would be stubbed and capped in a vault at Old Redwood Highway. See Table 4-1 for the lengths of the various distribution circuits.

Future Circuits 4 through 12 could be installed and directed along other streets, depending on the location of load growth. Depending on location, additional splice boxes for cable pulling and connections at street crossings could be required. If the two-circuit maximum on pole lines is met, remaining circuits would likely be installed underground alongside existing overhead lines.

**Table 4-1. Distribution Circuits from Proposed Substation**

Circuit	Approximate Lengths and Locations of Circuit Installation (feet)		
	Underground	Overhead	Total
1	458 (west across the substation parcel and under the railroad tracks to the Fulton No. 1 60 kV Power Line)	7,900 (south along existing Fulton No.1 60 kV Power Line to Windsor River Road)	8,358
2	3,190 (620 feet east across the substation parcel to Old Redwood Highway; 320 feet, 270 feet, and 480 feet along Old Redwood Highway at Rio Ruso Drive, Dawn Way, and Godfrey Street; 1,500 feet from Joe Redota Drive until Windsor River Road)	6,850 feet (south on portions of the west and east side of Old Redwood Highway to Windsor River Road)	10,040
3	538 (west across the substation parcel and under the railroad tracks to the Fulton No. 1 60 kV Power Line)	7,900 (south along existing Fulton No.1 60 kV Power Line to Windsor River Road)	8,428
<b>Total for Initial Circuits</b>	<b>4,186</b>	<b>22,650</b>	<b>26,836</b>

<sup>3</sup> Reconductoring is the replacement of existing power lines with new power lines. For the Windsor Substation Project, existing distribution lines would be replaced with upgraded lines.

**Table 4-1. Distribution Circuits from Proposed Substation**

Circuit	Approximate Lengths and Locations of Circuit Installation (feet)		
	Underground	Overhead	Total
Future: <sup>1</sup> 4	400 (west across the substation parcel and to the Fulton No. 1 60 kV Power Line easement)	None	400
Future: 8 & 9	620 (east across the substation parcel to Old Redwood Highway)	None	620 each (1,240 total)
Future: 5-7	400 (west across to the Fulton No. 1 60 kV Power Line easement )	None	400 each (1,200 total)
Future: 10-12	620 (east across to Old Redwood Highway)	None	620 each (1,860 total)
<b>Total for Future Circuits</b>	<b>4,700</b>	<b>None</b>	<b>4,700</b>
<b>Total for Initial and Future Circuits</b>	<b>8,886</b>	<b>22,650</b>	<b>31,536</b>

1 - Conduits for future use would ~~be~~ initially be stubbed and capped.  
Source: PG&E 2011 and 2012.

### 4.9.8 Right-of-Way Acquisition

PG&E would purchase the proposed substation site from the current landowner and acquire a new easement for the power line interconnection loop over the railroad property and for distribution lines under the tracks. Construction work along Old Redwood Highway would take place in the street and public utility easement. PG&E would obtain ministerial encroachment permits to conduct work in public rights-of-way in accordance with the Town of Windsor requirements.

## 4.10 Substation Construction

### 4.10.1 Construction

During construction, PG&E would comply with the *PG&E Code of Safe Practices* and its internal safety standards, which address topics such as the use of personal safety equipment (e.g., use of hard hats and eye and ear protection), the use of vehicular safety equipment (e.g., back-up warning beepers on construction equipment), and attendance at regular safety briefings. Construction power to the proposed site would be provided by an existing adjacent distribution line on Old Redwood Highway. A temporary overhead construction service tap and meter set would be installed just inside the substation property.

Site preparation would begin with removal of existing asphalt paving and concrete foundation remnants from previous buildings, clearing of vegetation, and grading of the substation pad. Approximately 1,120 cubic yards of existing material (370 cubic yards of asphalt and 750 cubic yards of concrete) would be removed from the site. The property lacks any significant vegetation except scattered trees along its northern and western edges (along Herb Road and the railroad right-of-way). Three trees would likely need to be removed during construction. Approximately 1,300 cubic yards of soil and aggregate would be required to achieve the substation site’s drainage (described in Section 4.9.6) and to bring the substation to its final grade. For this, it is estimated 1,000 cubic yards of material would be excavated and reused on-site, and 300 cubic yards would be imported. As part of site preparation, approximately

1,420 cubic yards of material would be hauled, consisting of 1,070 cubic yards of material to be removed and 300 cubic yards of soil to be imported. (PG&E 2011-2013).

Excavation for the substation’s foundations would begin after site grading is complete. Up to 250 cubic yards of excess soil would be generated in this phase of the project. In addition to the substation work, trenching and backfilling of the underground distribution circuits will generate additional truck trips. This is discussed below in Section 4.12 as part of the reconductoring and distribution system. Table 4-2 details the total volume of materials to be imported or exported from the project site, as well as the truck trips required to handle these volumes. (Although not part of the current project, it is expected that installation of future transformer banks and other structures at the substation would generate a total of up to 425 cubic yards of excess soil.)

**Table 4-2. Volumes of Material Imported and Exported from the Project Sites and Required Truck Trips**  
(10 cubic yards/truck trip)

Phase	Material Removed (cubic yards)	Material Imported (cubic yards)	Total Material (cubic yards)	Truck Trips
Substation Site Preparation	1,120	300	1,420	142
Substation Foundation Excavation	250		250	25
Trench Vaults	202		202	21
Jack and Bore Entry and Exit Pits	200		200	20
Distribution Line – Trench and Bore	796		796	80
<b>Total Current</b>			<b>2,868</b>	<b>288</b>
Future Installation	425		425	43
<b>Total Current + Future</b>			<b>3,293</b>	<b>331</b>

Source: PG&E 2010-2012.

Construction of the subsurface ground grid would follow grading and excavation. The grid is used to ground all above grade structures to mitigate any shock hazard. At the same time, the security wall, fencing, and paved interior road would be installed, and aggregate would be placed throughout the remainder of the enclosed site. With the site secured, excavation for subsurface footings for all the aboveground structures would begin. Reinforced concrete footings and slabs would be poured for structure and equipment support. After the concrete is cured, the aboveground steel structures, circuit breakers, transformers, switchgears, buses, dead ends, and other electrical equipment, including associated control system hardware, would be installed.

Structures would be erected to support buses, switches, overhead conductors, instrument transformers, and other electrical equipment, as well as to terminate incoming circuits. Supports for the aluminum bus structures would be fabricated from low profile tubular steel components. Structures within the substation would be grounded to the station-grounding grid. Equipment would be bolted or welded securely to slabs and footings to exceed Uniform Building Code seismic requirements. Additional equipment that would be installed includes high-voltage circuit breakers and air switches, tie structures and buswork, high-voltage instrument transformers and line traps, control and power cables, metering, relaying, and communication equipment.

The final stage of substation construction would be landscaping, including installation of an irrigation system. The proposed site property is outside the Town of Windsor’s recycled water service area. The Town of Windsor ~~may would~~ supply both potable water for irrigation and water for construction purposes such as dust control from an existing valve box along Old Redwood Highway at the eastern



edge of the proposed site. Water may also be obtained from a well adjacent to Herb Road or from construction baker tanks. Construction crew members would drink bottled water.

#### 4.10.2 Cleanup

PG&E would ensure that the substation site is kept clean during the construction period. Trash would be picked up daily and either removed from the work site or properly contained. All disturbed areas and temporary work locations would be cleaned after construction activities are complete.

**Table 4-3. Construction – Typical Equipment Use**

Equipment	Use	Number of Vehicles	Days per Week of Operation	Hours per Day of Operation	Duration of Use (weeks)
<b><i>Access Road and Substation</i></b>					
3/4-ton pickup trucks	Transport construction personnel	3	5	8	8
1-ton Truck	Tools, supplies and equipment	1	5	8	8
Truck-mounted Digger	Light excavation	1	5	8	8
Concrete Truck	Transport concrete	1	5	8	8
Man Lift	Elevation of personnel	2	5	8	8
Water Truck	Water site	1	5	8	8
Fork Lift	Elevation of materials	1	5	8	8
Crawler Backhoe	Excavation of foundation	1	5	8	8
D-3 Bulldozer	Grading of site	1	5	8	8
Excavator with breaker	Demolition of existing structure and foundations	1	5	10	4
Sheep's foot roller	Demolition of existing structure and foundations	1	5	10	4
Dump truck	Removal of existing structure and foundations	1	5	10	4
Loader	Demolition of existing structure and foundations	1	5	10	4
<b><i>Transmission Line Substation Interconnection</i></b>					
3/4-ton pickup trucks	Transport construction personnel	3	4	3	2
Crew-cab trucks (3/4 to 1 ton)	Transport construction personnel	1	4	3	2
Bucket truck	All line construction activities	2	4	5	2
Puller	Pull conductor wire	1	2	2	1
Line Truck	Install shoo-fly poles	1	2	4	2
50-ton crane	Lift transmission conductors	1	1	6	1
Water Truck	Water site	1	4	8	2
<b><i>TSP Replacement and Installation</i></b>					
3/4-ton pickup trucks	Transport construction personnel	3	5	3	1
Crew-cab trucks (3/4 to 1 ton)	Transport construction personnel	3	5	3	1
Boom truck	All construction activities	1	1	6	1
50- and/or 70- ton mobile cranes	Erect structures/install transformers	1	1	4	1
Lo-Drill	Excavate foundations	1	2	12	1
Backhoe or Bobcat	Load excavated dirt	1	2	7	1

**Table 4-3. Construction – Typical Equipment Use**

Equipment	Use	Number of Vehicles	Days per Week of Operation	Hours per Day of Operation	Duration of Use (weeks)
Concrete trucks	Transport concrete	8	1	2	1
Air compressor	Operate pneumatic equipment	1	2	2	1
Dump Truck	Haul excavated material (5 truck-loads per hole)	5	2	3	1
2-ton flat-bed truck	Haul equipment and materials to job site	1	5	3	1
Potholer and vacuum truck	Hydro probe of excavation site to confirm no subsurface utilities	2	2	2	1
Water truck	Water site	1	5	12	1
<b><i>Distribution Line Installation (Overhead)</i></b>					
3/4-ton pickup trucks	Transport construction personnel	3	5	8	22
Crew-cab trucks (3/4 to 1 ton)	Transport construction personnel	3	5	8	22
Line Truck	Drill hole and install poles	3	5	8	22
Puller Rig	Pull conductor wire	1	5	8	13
Bucket truck	String conductor wire	5	5	8	13
Splicing Van	Make splices in conductor	5	5	8	17
Crane Truck	Pole & conductor delivery	6	5	8	14
Water Truck	Water Site	1	5	8	22
<b><i>Distribution Line Installation (Underground)</i></b>					
3/4-ton pickup trucks	Transport construction personnel	1	4	3	20
Crawler backhoe	Excavate trench	1	4	8	20
Dump trucks	Haul trench spoils from site & deliver clean backfill	1	4	5	20
HDD Rig	Directional drilling	1	4	8	17
Bore Rig	For jack & bore under railroad tracks	1	4	8	17
Excavator	For large volume excavations	1	4	8	17
Crew truck	Tools and equipment	1	4	2	20
Water truck	Water site	1	4	8	20

Source: PG&E 2011.

### 4.10.3 Construction Workforce and Schedule

PG&E has targeted construction to begin in ~~December~~ ~~February~~ 2014 to meet an in-service date of ~~May 2015~~ ~~June 2016~~.<sup>4</sup> The size and composition of the workforce would vary, depending on the phase of construction. Substation work (civil construction) would occur over eight months. During substation grading, a maximum workforce of approximately 15 workers would be needed over a three to four week period. The security wall and fencing, buswork structure, new TSP, and substation foundation work would require approximately eight workers. Installation of the switchgear enclosure and overhead work would also require approximately eight workers. As phases of the work are completed, the workforce at

<sup>4</sup> Storm events during the rainy season (December through March) could preclude construction activities from occurring, delaying completion of construction.

the substation site would gradually decline. A small workforce would remain at the substation site to complete required project cleanup and landscaping.

Distribution line work would require approximately 16 workers and would take six to seven months (~~beginning December 2014~~~~between October 2014 and April 2015~~). Construction crews would work during weekday daylight hours unless otherwise required for project safety or to take advantage of necessary line clearances. The tasks would be conducted in stages, so personnel and equipment would not be working on all tasks simultaneously at a given location.

No permanent workers would be hired for this project. The workforce would be primarily PG&E employees or a contracted workforce. Laborers employed during the construction of the project would commute to the area or stay in nearby hotels for the duration of the project. Contractor construction personnel would be from Sonoma County or surrounding areas.

## 4.11 Power Line Interconnection Construction

The construction for the power line interconnection work would be in two phases: (1) replacing the existing pole on the Fulton No. 1 60 kV power line with a TSP and (2) installing the conductor.

### 4.11.1 Pole Installation and Replacement

The existing wooden pole on the Fulton No. 1 60 kV power line that would be replaced with a TSP is located on the west side of the railroad right-of-way in an area containing open space and rural residences. The new TSP would be made of weathered steel tapering upward from a ground-level diameter of approximately 30 inches. A concrete foundation for the TSP would have a diameter of approximately 5.5 feet. The TSP would reach a height of 75 feet; two cross arms would extend 4-feet laterally on each side of the pole.

To erect the pole, a semi-truck and trailer would deliver the TSP to the pole site in sections. A crane would off-load TSP sections in preparation for assembly. An area approximately 50 feet square would be required temporarily for the installation of the TSP. This would require a brief temporary lane closure on Old Redwood Highway that would be coordinated with the Town of Windsor.

The Fulton No. 1 60 kV Power Line currently has two 12 kV distribution circuits mounted under the 60 kV conductors. Installing the replacement TSP requires horizontal and vertical clearance between these two circuits for access and manipulation of equipment and TSP sections. To achieve this, two temporary wood poles called “shoo-flys” would be erected near the existing wood pole. Because the two 12 kV circuits are on opposite sides of the existing pole, the shoo-fly poles would be offset 10 feet east and west of the pole and the 12 kV distribution circuits would be transferred to the two shoo-fly poles. If necessary, a brace support would help counter any lateral tension on the shoo-fly poles that might result from temporarily offsetting the existing alignment from its original position.

Once the 12 kV circuits have been moved, a tracked drilling rig would excavate the TSP’s foundation. The rig would auger a hole between five feet and eight feet in diameter and approximately 15 to 20 feet deep, with the exact depth determined by local soil characteristics. Excavated soil would be tested and disposed of in accordance with applicable regulations or reused. The completed hole would be temporarily covered ~~by the end piece of a conductor spool~~ until installation of the new foundation. A reinforcing bar cage would be lowered into the hole and foundation bolts would be attached to the cage. Wood forms would then be constructed around the foundation and concrete poured into these forms. Excavating the foundation hole and pouring the concrete would require approximately three days. Once the

concrete has cured, the bottom section of the TSP would be delivered to the site and lowered onto the foundation by a crane. The remaining sections would be installed later as described below.

The existing wood pole and, later, the temporary shoo-fly poles would be loosened for removal by a hydraulic jack mounted on a line truck. Once these wooden poles have been removed, the resulting holes would be backfilled with the soil from the TSP foundation auguring. Some unused soil would be used to backfill around the concrete foundation of the TSP and would be feathered around the new pole site. Wooden poles and any sawdust would be deposited at the appropriate Santa Rosa PG&E Service Center collection bin or another appropriate available facility as necessary for ultimate disposal at a licensed Class 1 landfill or a composite-lined portion of a solid waste landfill.

Before attaching conductors to the new TSP, a circuit clearance would be scheduled. At that time, a crane or bucket truck would lift the existing 60 kV transmission conductors from their current position and shift them out of the way. A second crane would lower the remaining sections of the new TSP into place. Line crews would then transfer the 12 kV distribution circuits from the shoo-fly poles to the TSP and the 60 kV transmission conductors from the crane to the TSP.

#### **4.11.2 Stringing 60 kV Conductor**

Stringing the conductor looping between the Fulton No. 1 60 kV power line and the substation would begin with the installation of sheaves or stringing blocks. Sheaves are rollers that are attached to the cross arm of a supporting structure. The sheaves allow the conductor to be pulled through each pole until it is ready to be pulled up to its final tension position. Once the pull and tension equipment is in place, a small cable used to pull the conductor, a “sock line,” would be pulled from structure to structure by ground equipment. The conductor would then be attached to the sock line and strung via the tension-stringing method. This method controls the tension of the conductor as it is pulled through each sheave, ensuring the conductor remains elevated above the railroad. After pulling the conductor into place, sag would be adjusted to a pre-calculated level. Finally, the conductor would be clamped to the end of each insulator, and the sheaves would be removed. Vibration dampers and other accessories would complete the installation.

### **4.12 Reconductoring of Distribution Line and Power Line Underbuild**

Distribution of the increased capacity provided by the new substation would require constructing 1,161 feet of new underground circuits, rebuilding 7,900 feet of the existing overhead Fulton No. 1 60 kV line and installing two underbuilt distribution circuits, and reconductoring of 9,420 feet of the 12 kV power line along Old Redwood Highway.

#### **4.12.1 Pole Replacement**

Proposed reconductoring and rebuilding of power lines for the proposed project would require replacement of 88 wooden poles along two existing distribution lines and the installation of 5 new riser poles. Existing poles are approximately 45 feet tall, and new poles would be approximately 20 feet higher, or about 65 feet tall. The new wood poles would employ an avian-safe design to protect raptors and other birds from electrocution.

Pole replacement would require an approximately 75-foot radius of temporary impact around the TSP, a 50-foot radius of temporary impact around wood poles, and an approximately 10-foot-wide corridor of temporary impacts between poles. Most replacement poles would be installed within three to six feet of the existing pole they are replacing. Wood poles would be delivered to each pole site on a line truck

with trailer. The line truck would auger a hole to the appropriate depth. The replacement wood pole would be framed with the necessary insulators and hardware, and then installed in the hole by the line truck or a crane. Soil from the augered hole would be covered with plastic tarps and would be used for filling holes, feathered around the pole base, or would be removed.

Whenever possible, work would take place within previously disturbed areas around the base of the existing poles. At most pole locations, crews would be working from paved streets. In addition to electric lines, the existing wood poles along Old Redwood Highway support telephone and cable television lines. Collocated utility lines would be detached from the existing poles and attached to the replacement poles.

Bucket trucks would be used to remove cross arms and wires from poles. A boom mounted on the line truck would loosen old poles as needed so that crews could then use the line truck to pull the wood poles out of the ground. Based on site-specific conditions, however, some old wood poles may be cut off at the base or six to 12 inches below the surface and left in place. All old poles, associated hardware, and any debris generated would be removed and disposed of properly.

#### 4.12.2 Reconductoring

During reconductoring of overhead distribution lines, the existing conductor would be replaced with heavier-duty 1,100 thousand circular mil (kcmil)<sup>5</sup> all-aluminum conductor, increasing the capacity of the line. Approximately nine pull and tension locations along public streets would be required for the project. These pull and tension sites would be located around dead end or angle poles and would require an area of approximately 400 to 500 square feet (40 to 50 feet long by 10 feet wide) for operations. Insulators would be installed or replaced as part of the reconductoring work.

The exact locations of pull and tension sites would depend on town traffic permits and permission from property owners. PG&E anticipates using two pull and tension sites for Circuits 1 and 3, and seven pull and tension sites for Circuit 2. For Circuits 1 and 3 the approximate sites would be Starr Road where it intersects with the Fulton No. 1 60 kV Power Line, and Windsor River Road where it intersects with the Fulton No. 1 60 kV Power Line. The approximate pull and tension site locations for Circuit 2 would be Old Redwood Highway just east of the substation and on Old Redwood Highway near its intersections with Starr Road, Arata Lane, Rio Ruso Drive, Dawn Way, Godfrey Drive, and Windsor Road (PG&E 2011-2013).

New insulators would be placed on poles with conductor rollers at their end. To install the new overhead conductors, the existing conductor at one end of a given pull section would be attached to a puller-truck cable. The new conductor would be attached to the existing conductor at the opposite end of the pull section. Once the new conductor is in place and the sags between structures have been adjusted to a pre-calculated level, the new conductor would be detached from the rollers and clipped into the end of each insulator. At maximum sag, the conductor would be 25 feet or more above ground level. The rollers would be removed and vibration dampers and other accessories would be installed. A line truck would take the old conductor from the site to the PG&E construction storage yard located at 101 Airport Boulevard in Santa Rosa.

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<sup>5</sup> One circular mil is the unit of area equal to a circle with a diameter of 1 mil (1/1000th inch). It is used to indicate the cross-sectional area of a wire. One thousand circular mils are denoted as 1 kcmil.

### 4.12.3 Underground Installation

Underground installation of distribution lines would require horizontal directional drilling, jack and bore, or open trenching. A total of 796 cubic yards of spoils from open trench and bore operations and 200 cubic yards from entry and exit pits and vaults would need to be removed (see Table 4-2). For underground segments, the 12 kV underground distribution line would be installed pursuant to PG&E's established franchise agreements with the Town of Windsor. Underground installation would include installing three 1,100 kcmil all-aluminum conductor cables in a single conduit. Each conductor would be approximately two inches in diameter and would fit in a 6-inch diameter conduit.

PG&E would coordinate with the Town of Windsor regarding construction techniques; however, PG&E anticipates that it would use the following methods for the underground installation: Undergrounded conductor segments extending across the substation parcel between the Fulton No. 1 60 kV Power Line and Old Redwood Highway would be completed using open trenching. Jack-and-bore techniques would be employed for crossing under the NWP RR tracks. Three underground segments that would extend south on Old Redwood Highway at Rio Ruso Drive, Dawn Way, and Godfrey Drive would be installed using horizontal directional drilling. Underground vaults, approximately 4.5 feet long by 8.5 feet wide by 6 feet deep, would be installed at each of the bore locations along Old Redwood Highway, unless existing vaults could be used. The 1,500-foot underground segment to be reconducted along Old Redwood Highway from Joe Redota Road to Windsor River Road would be placed in an existing 6-inch duct located within a Public Utility Easement.

Regional groundwater occurs at a depth of approximately 80 feet below the ground surface, which is deeper than any of the proposed bores (PG&E 2010). If significant volumes of perched groundwater are encountered, water would be evacuated using a sump pump, transferred into water storage tanks (to be sited at the proposed substation site), sampled, analyzed, transported, and disposed in accordance with all federal, state, and local regulations. If any worker observes potential contamination or signs of pre-existing hazardous waste during excavation, work in that area would be stopped until the contamination is dealt with in accordance with all federal, state, and local regulations. As part of final construction activities, PG&E would restore all paved surfaces, and restore landscaping or vegetation, as necessary and in compliance with the road encroachment permit.

To ensure no contamination would occur to nearby storm drains and water sources, PG&E construction crews would implement best management practices (BMPs) outlined in PG&E's *Water Quality Construction Best Management Practices Manual*, a copy of which would be provided to CPUC staff. These include the following BMPs:

- Evaluate, mark and protect important trees and associated rooting zones, unique areas (e.g., wetlands), and other areas to be preserved;
- Designate parking and fueling areas;
- Control vehicle speed and access near sensitive areas or waterways; and
- Begin excavation, trenching, or grading after installing applicable sediment and runoff control measures.

**Open Trenching.** PG&E would obtain a Town of Windsor road encroachment permit and comply with its conditions and requirements. Where used, trenches would measure approximately 48 to 56 inches deep and 18 to 24 inches wide. A backhoe would be used to dig the trenches; trenching in paved locations would require first saw-cutting and/or breaking the pavement. Cable conduit would be installed in the open trench using reinforcement bar, ground wire, and concrete conduit encasement. To complete the work, thermal select or controlled backfill would be added and compacted in the trench. A road base



backfill or slurry concrete cap would then be installed. Soils excavated during trenching would be temporarily stored at the substation property. If testing shows these soils are non-hazardous, they could be used as backfill at any project site. Unused soil would be disposed of in accordance with all federal, state, and local regulations.

Approximately 19 vaults would be installed at various locations along the open trenches. Vaults would be approximately 4.5 feet long by 8.5 feet wide by 6 feet deep and would require excavation of approximately 10.6 cubic yards of soil each. Excavation and disposal of soils from vaults would be conducted as addressed above for trenching. Comcast® would require installation of additional underground vaults along the trenches to access its collocated cable television line, which would be undergrounded within the joint trench. The number and locations of vaults required by Comcast® are not available at this time.

**Jack and Bore.** Jack and bore techniques would likely be used under the railroad west of the substation. The final location of entrance and exit pits for jack and bore techniques have not been determined. Placement would be determined by PG&E engineering design and a Town of Windsor encroachment permit, and/or consultation with SMART, as appropriate. Boring would begin with the digging of entrance and an exit pits (approximately 24 feet long, 16 feet wide, and 6 feet deep). Shoring will be installed when necessary. Relief holes along the course of the bore would not require shoring. After shoring, bore equipment would be installed in the bore pit. Steel casing would be welded in sections and jacked into the bore. Finally, assembled conduits would be pulled through the steel casing.

Approximately 200 cubic yards of material would be excavated to create the pits. Approximately 20 truck trips would be needed to haul soils removed from the pits. The soil would be transported to one of three locations or another appropriate available facility as necessary: the proposed substation site; Syar Industries at 13666 Healdsburg Avenue, Healdsburg; or a private property at 40887 River Road, Cloverdale for temporary storage. Soils classified as non-hazardous could be used as backfill or at another permitted construction site. Unused soil would be disposed of in accordance with all federal, state, and local regulations.

**Horizontal Directional Drilling.** Horizontal directional drilling (HDD) is completed by a hydraulically-powered horizontal drilling rig with a variable-angle drilling unit. This rig is supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. The drilling unit would be set to the proper design angle for the particular bore, which has not yet been determined for this project. During the bore, drilling fluid, a water/bentonite (dehydrated clay) mixture, would be pumped under high pressure through the drill stem to rotate the cutting head and return the excavated spoils to a pit at the entry point. The HDD contractor would be responsible for disposal of any soil cuttings, drilling mud, fluids, or waste in accordance with all federal, state, and local regulations.

To begin boring, an entry pit (approximately 4 feet long by 2 feet wide) and exit pit (approximately 20 feet long by 4 feet wide) would first be created. Relief holes (approximately 4 feet long by 2 feet wide) would be added at approximately 100 foot intervals, determined by local ground conditions. Concurrently with boring, sections of steel casings would be welded together. Assembled PVC conduit bundles would then be pulled through these casings. Casings with conduit bundles would be pulled completely through the finished bore hole. Shoring would not be required in the entry and exit pits.

Exact locations for entry and exit pits have ~~not~~ yet to be determined by PG&E engineering design and a Town of Windsor encroachment permit. Geotechnical surveys may be used to analyze underlying strata along the bore path for unanticipated weakness or lack of consolidation. Strata of this type are at risk of fracture, potentially allowing drilling mud to rise to the surface. In this event, the boring process would be immediately halted. The HDD contractor would be responsible for minimizing the potential for frac-

outs by maintaining the ~~drill~~-drilling fluid pressure at a reasonable level. A PG&E inspector with the authority to shut down HDD operations at any time would provide further oversight at every HDD location.

Mud, fluids, and waste generated by drilling are typically non-hazardous. Soil removed from the entry and exit pits would be transported to the proposed substation site or the PG&E construction storage yard located at 101 Airport Boulevard, in Santa Rosa, Sonoma County for temporary storage. If testing classifies soils as non-hazardous, they may be used as backfill on site, or at another permitted construction site. Unused soil would be disposed of at a landfill in accordance with all federal, state, and local regulations.

During construction, PG&E would implement the best management practices outlined in the *PG&E Horizontal Directional Drilling Manual*. A copy of this manual would be provided to CPUC staff. Lengths, dimensions, and volumes associated with trenching and boring are listed in Table 4-4.

**Table 4-4. Trench and Bore Details for the Proposed Project**

Trench/Bore	Approximate Length of Trench/Bore (feet)	Depth & Width Dimensions	Excavated Soil* (cubic yards)	Circuits within Trench/Bore
Trench #1 (west from the substation crossing west of the NWPRR)	400	48 to 56 inches deep, and 18 to 24 inches wide	173	Circuit 1, 3-7
Trench #1a (west of the substation and the NWPRR, branching off from Trench #1 and ending at pole a1)	58	48 to 56 inches deep, and 18 to 24 inches wide	25	Circuit 1
Trench #1b (west of the substation and the NWPRR, branching off from Trench #1 and ending at pole a3)	138	48 to 56 inches deep, and 18 to 24 inches wide	60	Circuit 3
Trench #2 (east from the substation crossing Old Redwood Highway)	620	48 to 56 inches deep, and 18 to 24 inches wide	268	Circuit 2, 8-12
Bore # 1 (crossing from the east side of NWPRR to the west side of NWPRR)	200	Minimum 42 inches deep, and 12 inches wide	32	Circuit 1
Bore #2 (Rio Drive)	320	Minimum 24 inches deep, and 12 inches wide	30	Circuit 2
Bore #3 (Dawn Way)	270	Minimum 24 inches deep, and 12 inches wide	25	Circuit 2
Bore #4 (Godfrey Street)	480	Minimum 24 inches deep, and 12 inches wide	44	Circuit 2
Trench #3 (along Old Redwood Highway from Joe Redota Road to Windsor River Road)	1,500	Minimum 24 inches deep, and 12 inches wide	139	Circuit 2, 8-12

Source: PG&E 2010, 2011, 2012

\* The above cubic yard quantities are estimates based upon currently-available information and include a fluff factor of 25% applied to the in-situ quantities.

## 4.13 Operations and Maintenance

### 4.13.1 Substation Operations, Maintenance, and Inspection

Distribution equipment at the proposed substation site would be operated remotely from the PG&E Control Center in Vacaville, California. The PG&E Pittsburg Control Center in Pittsburg, California would control transmission equipment for the proposed substation and power lines. Substation operation would be monitored by monthly routine inspections, with additional inspections as needed under emergency conditions. The station and line alarms would connect to control centers via telecommunications lines. Santa Rosa PG&E personnel would be dispatched in response to an alarm. Because all telecommunication equipment would be located within conduits, switchgear enclosures, and pull boxes, no microwave dish and/or poles would be needed.

Parking for facility inspection, operation and maintenance would be located within the substation site. Substation structures would be inspected annually for corrosion, equipment misalignment, or foundation problems. This ground inspection would also include examination of hardware, insulator keys, and conductors. Additionally, conductors and fixtures would be tested for corrosion, breaks, broken insulators, and bad splices. Electric lines would be checked for correct sag. Annual ground inspections also would be conducted on poles, anchors, and right-of-way conditions. As needed, trimming of vegetation would be performed in accordance with the CPUC's General Order 95.

## 4.14 Applicant Proposed Measures

PG&E would implement Applicant Proposed Measures (APMs) during the design and construction of the proposed project in order to avoid or minimize potential environmental impacts. The APMs listed in Table 4-5 are part of the proposed project and are considered in the evaluation of environmental impacts (see Section 5, Environmental Analysis and Mitigation). CPUC approval would require PG&E adherence to the proposed project as described in this document, including this project description and the APMs, as well as any adopted mitigation measures identified by this Initial Study.

Table 4-5 details each PG&E APM by environmental resource. Additional mitigation measures recommend to be imposed are presented in Section 5. These are measures that are not otherwise included in the APMs or that expand upon or add detail to the APMs presented, to ensure that potential impacts would be reduced to less than significant levels.

**Table 4-5. Applicant Proposed Measures (APMs)**

APM Number	Issue Area
<b>Aesthetics</b>	
APM AE-1	Additional landscaping comprised of trees and shrubs will be included along Herb Road and along the east edge of the <u>substation</u> site in the setback area from Old Redwood Highway to provide additional screening and reduce project visibility. Suggested plant material includes a mix of redwood trees and evergreen native oaks with a small number of deciduous accent trees. Landscaping under transmission lines will consist of small trees and/or shrubs to allow for overhead clearance. All planting will be consistent with PG&E operational requirements for landscaping in proximity to electric transmission facilities.
<b>Air Quality</b>	
APM AQ-1	Water all active construction areas at least twice daily during dry conditions.
APM AQ-2	Cover all trucks hauling dirt, sand, or loose materials, or require all trucks to maintain at least two feet of freeboard.

**Table 4-5. Applicant Proposed Measures (APMs)**

APM AQ-3	Pave, apply water as necessary to prevent fugitive dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
APM AQ-4	Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites, <u>if visible soil material is present.</u>
APM AQ-5	Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
APM AQ-6	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.
APM AQ-7	Minimize construction equipment exhaust by using low-emission 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 shall meet at a minimum USEPA/CARB Tier 1 engine standards.
APM AQ-8	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.
APM AQ-9	Encourage use of natural gas powered vehicles for passenger cars and light duty trucks where feasible and available.
APM AQ-10	Minimize welding and cutting by using compression of mechanical applications where practical and within standards.
APM AQ-11	Encourage the recycling of construction waste where feasible.
APM AQ-12	Comply with California Air Resources Board Early Action Measures as these policies become effective.
APM AQ-13	Maintain substation breakers in accordance with PG&E's maintenance guidelines.
APM AQ-14	Require that the proposed substation's breakers have a manufacturer's guaranteed leakage rate of 0.5 percent per year or less for SF6.
<b>Biological Resources</b>	
APM BIO-1	An ongoing special-status species/sensitive habitat education program for construction crews will be conducted by a qualified biologist(s) prior to the commencement of the project and during construction activities. Sessions will include discussion of the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA), the consequences of noncompliance with these acts, identification and values of habitats, and the importance of keeping all project activities and sediments within the designated work area.
APM BIO-2	Soil and vegetation disturbance will be minimized to the greatest extent possible.
APM BIO-3	An educational brochure will be produced for construction crews working on the project. Color photos of some of the special-status species will be included, as well as a discussion of protective measures agreed to by PG&E and the resource agencies.
APM BIO-4	A pre-construction wildlife and plant survey will be conducted prior to the start of construction activities to identify any special-status species, nesting birds or mammals, and occupied burrows in the proposed substation site or alignments for the Fulton No. 1 60 kV power line and distribution line. Should a sensitive wildlife or plant species be found, CDFW and/or USFWS will be contacted promptly.
APM BIO-5	A biological monitor will be on-site during grading activities and installation of the silt fence around the proposed substation site perimeter and needed areas along the distribution line alignment. After these activities are completed, the biological monitor will visit the site as needed, depending on work activities and locations. The biologist will complete daily reports from such visits summarizing construction activities observed and environmental compliance.
APM BIO-6	Trash dumping, firearms, and pets will be prohibited in project work areas.

**Table 4-5. Applicant Proposed Measures (APMs)**

APM BIO-7	<p>If special-status plant species are found during any of the special-status plant surveys, PG&amp;E will modify the project to avoid impacts to special-status plant species. If identified special-status plant species cannot be avoided, PG&amp;E will consult with the appropriate resource agency and comply with permit conditions to ensure that the project will not have a substantial adverse effect on such species, either directly or through habitat modification. Examples of feasible measures that could be required include the following:</p> <ul style="list-style-type: none"> <li>• acquire suitable habitat for identified species within the project site,</li> <li>• develop a long-term habitat enhancement plan for identified species, and/or</li> <li>• monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan.</li> </ul>
APM BIO-8	<p>Mobile equipment will not be parked overnight within 100 feet of aquatic habitat. Stationary equipment (e.g., pumps and generators) used or stored within 100 feet of aquatic habitat will be positioned over secondary containment.</p>
APM BIO-9	<p>Anti-perch devices will be applied to the overhead distribution line improvements to inhibit raptor perching and nesting.</p>
APM BIO-10	<p>A qualified wildlife biologist shall conduct pre-construction surveys for burrowing owls according to the Burrowing Owl Survey Protocol and Mitigation Guidelines developed by The California Burrowing Owl Consortium (1993). If any ground disturbing activities are planned during the burrowing owl nesting season (approximately February 1 through August 31), avoidance measures shall be implemented following the recommendations in California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (CDFW, 2012). Avoidance measures shall include a no construction buffer zone of a minimum distance of 656 feet for designated low/medium disturbance activities and 1,640 feet for high disturbance activities. If occupied burrows are closer than those distances to the nearest work site, the specified buffer size may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity) and as determined by a qualified wildlife biologist, that implementation of a specified smaller buffer distance will still avoid project-related "take" of adults, juveniles, chicks, or eggs. Any variance from the standard buffers must be submitted to CDFW in a written report that includes the location, reason for the buffer reduction, the name and contact information of the qualified wildlife biologist(s) who authorized the buffer reduction and conducted subsequent monitoring, the reduced avoidance buffer size, duration of buffer reduction, and outcome to the nest, egg, young and adults. The report should be submitted to CDFW at the end of each nesting season for the duration of the project. The owls will be monitored on a daily basis by a qualified biologist when construction is within the buffer zone during the entire nesting season unless the qualified wildlife biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends (whichever occurs first). If the nesting owls show signs of distress within a reduced buffer zone, and that stress is related to construction activities, the qualified wildlife biologist reinstate will the recommended buffers. The recommended buffers will only be reduced after the qualified biologist has determined that the nesting owls are no longer exhibiting signs of stress. Reporting regarding reduction of buffers will be documented in a written report and will follow the procedure described above.</p>
APM BIO-11	<p>Badger dens will be clearly demarcated with appropriate flagging and signs and avoided if possible.</p>
APM BIO-12	<p>If a badger den cannot be avoided, CDFW will be consulted to discuss the possible relocation of the badger.</p>
APM BIO-13	<p>The introduction of noxious weeds carried in with construction equipment will be minimized by ensuring the equipment is clean before it arrives at the proposed substation site, Fulton No. 1 60 kV power line and distribution line alignment. In addition, only weed-free erosion control materials will be used on the project.</p>
APM BIO-14	<p>Native seed mix will be used when restoring areas of grassland, oak woodland and wetland.</p>
APM BIO-15	<p>The valley oaks and oak woodlands will be denoted as environmentally sensitive and will be avoided to the extent practical. If any protected oak trees are removed, they will be replaced or compensated for in a manner that is consistent with the provisions in the Town of Windsor's Ordinance for Tree Mitigation.</p>
<b>Cultural Resources</b>	
APM CU-1	<p>Prior to the initiation of construction or ground-disturbing activities, PG&amp;E will train all construction personnel to understand the potential for exposing subsurface cultural resources and to recognize possible buried cultural resources. Training will inform all construction personnel of the anticipated procedures that will be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains and their treatment.</p>

**Table 4-5. Applicant Proposed Measures (APMs)**

APM CU-2	Upon discovery of possible buried cultural materials (including potential Native American skeletal remains), work in the immediate area of the find will be halted and PG&E's archaeologist notified. Once the find has been identified and evaluated, PG&E's archaeologist will make the necessary plans for treatment of the find(s) and mitigation of impacts if the finds are found to be significant according to CEQA. State law will be followed in the event of the exposure of Native American skeletal remains.
APM CU-3	In the event human remains are encountered during the project, work in the immediate area 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 identify a Most Likely Descendent. The Most Likely Descendent will consult with PG&E's archaeologist to determine further treatment of the remains.
<b>Hazards and Hazardous Materials</b>	
APM HM-1	A Hazardous Substance Control and Emergency Response Plan will be prepared for the project. It will prescribe hazardous material handling procedures to reduce the potential for a spill during construction or exposure of the workers or public to a hazardous material. The plan will provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during field activities.
APM HM-2	Emergency-spill supplies and equipment will be clearly marked and immediately available at all work areas. Oil-absorbent materials, tarps, and storage drums will be used to contain and control any minor releases. Detailed information for responding to accidental spills, and for handling any resulting hazardous materials, will be provided in the project's Hazardous Substances Control and Emergency Response Plan.
APM HM-3	An environmental training program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention, and will include a review of the Hazardous Substances Control and Emergency Response Plan and the Stormwater Pollution Prevention Plan (SWPPP).
APM HM-4	If contaminated soils or groundwater due to VOCs, xylene, or other contaminants are encountered, appropriate abatement actions will be implemented in accordance with applicable regulatory requirements.
<b>Hydrology and Water Quality</b>	
APM WQ-1	All BMPs will be on-site and ready for installation before the start of construction activities.
APM WQ-2	PG&E will develop a Stormwater Pollution Prevention Plan (SWPPP), as outlined in General Permit 2009-0009-DWQ, which will describe BMPs to prevent the acceleration of natural erosion and sedimentation rates. The SWPPP will include a written site-specific Construction Site Monitoring Program (CSMP). A monitoring program will be established to ensure that the prescribed BMPs are followed during project construction. BMPs will include: <ul style="list-style-type: none"> <li>• silt fences or other sediment containment methods placed around and/or down slope of disturbed areas prior to construction;</li> <li>• protection of drain inlets from receiving polluted stormwater through the use of filters, such as fabrics, gravel bags, or straw wattles;</li> <li>• construction of a stabilized construction entrance/exit to prevent tracking onto roadway;</li> <li>• 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</li> <li>• 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 over secondary containment.</li> </ul>
xAPM WQ-3	A worker education program will be established for all field personnel prior to initiating fieldwork to provide training in the appropriate application and construction of erosion and sediment control measures. This education program will also discuss appropriate hazardous materials management and spill response.
APM WQ-4	All BMPs will be inspected on a weekly basis, and at least once every 24-hour period during extended storm events. BMPs will be inspected as described in the SWPPP, maintained on a regular basis, and replaced as necessary through the course of construction. For each inspection required, an inspection checklist will be completed using a form as described in Attachment C of General Permit 2009-0009-DWQ. This checklist will remain onsite with the SWPPP.
APM WQ-5	The SPCC plan will include engineered methods for containing and controlling an oil release, including a water-collection system and retention pond equipped with an oil/water separator. Oil-absorbent material, tarps, and storage drums will be present on-site to contain and control any minor releases.



**Table 4-5. Applicant Proposed Measures (APMs)**

APM WQ-6	Permits may need to be obtained prior to construction from the Army Corps of Engineers (404), Regional Water Quality Control Board 401 Certification, and California Department of Fish and Game Streambed Alteration agreement (1600) if any identified jurisdictional waters are found .
APM WQ-7	Construction work will avoid all wetlands, swales and drainages during construction. If waters areas cannot be avoided, work will be performed outside of the wet season.
APM WQ-8	Vehicle maintenance wastes, including used oils and other fluids will be handled and disposed of properly. Fuels and lubricating oils for vehicles heavy equipment will not be stored or transferred within 100 feet of any waterbodies.
<b>Noise</b>	
APM NO-1	All construction equipment will use noise-reduction features (such as mufflers) that are no less effective than those originally installed by the manufacturer.
APM NO-2	Construction will be limited 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 take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.
APM NO-3	Construction crews will limit unnecessary engine idling. (See Air Quality measures.)
APM NO-4	Construction crews will use equipment that is specifically designed for low noise emissions.
APM NO-5	Locate all stationary construction equipment as far as practical from noise sensitive receptors.

## 4.15 EMF Summary

### 4.15.1 Electric and Magnetic Fields

Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to electric and magnetic fields (EMF) from power lines, this document provides information regarding EMF associated with electric utility facilities and the potential effects of the proposed project related to public health and safety. Potential health effects from exposure to electric fields from power lines (produced by the existence of an electric charge, such as an electron, ion, or proton, in the volume of space or medium that surrounds it) are typically not of concern since electric fields are effectively shielded by materials such as trees, walls, etc., therefore, the majority of the following information related to EMF focuses primarily on exposure to magnetic fields (invisible fields created by moving charges) from power lines. However, this Initial Study does not consider magnetic fields in the context of CEQA and determination of environmental impact. This is because (a) there is no agreement among scientists that EMF does create a potential health risk, and therefore, (b) there are no defined or adopted CEQA standards for defining health risk from EMF. As a result, EMF information is presented for the benefit of the public and decisionmakers.

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remains inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer. The International Agency for Research on Cancer (IARC), an agency of the World Health Organization (WHO), and the California Department of Health Services (DHS) both classified EMF as a *possible* carcinogen (WHO 2001; DHS 2002).

In addition, the 2007 WHO [Environmental Health Criteria (EHC) 238] report concluded that:

- Evidence for a link between Extremely Low Frequency (50–60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, “...virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or



disease status....the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern.”

- “For other diseases, there is inadequate or no evidence of health effects at low exposure levels.”

Currently, there are no applicable regulations related to EMF levels from power lines or substations. However, following a decision from 1993 (D.93-11-013) that was reaffirmed on January 27, 2006 (D.06-01-042), the CPUC requires utilities to incorporate “low-cost” or “no-cost” measures to mitigate EMF from new or upgraded electrical utility facilities up to approximately 4 percent of total project cost. To comply, PG&E has incorporated such measures to reduce magnetic field levels in the vicinity of the proposed substation and subtransmission lines.

#### 4.15.2 EMF and the Windsor Substation Project

In accordance with Section X(A) of GO 131-D, CPUC Decision No. D.06-01-042, and PG&E's EMF Design Guidelines prepared in accordance with the EMF Decision, PG&E would incorporate “no cost” and “low cost” magnetic field reduction steps in the design of the proposed substation. The design guidelines include the following measures that may be available to reduce the magnetic field strength levels from electric power facilities:

- Optimal phasing of the substation interconnection;
- Keeping high current transformers, capacitors, and reactors away from substation property lines;
- For underground duct banks, keeping at least 12 feet from the adjacent property lines or as close to 12 feet as practical;
- Locating substation near existing power lines;
- Increasing the substation property boundary to the extent practical.

The CPUC’s EMF Decision and PG&E’s EMF Guidelines require PG&E to prepare a Field Management Plan (FMP) that indicates that no-cost and low-cost EMF measures will be used in engineering design.

Further information regarding EMF and the Windsor Substation Project can be found in Attachment F of the Proponent’s Environmental Assessment. PG&E’s application (A.10-04-024) and Proponent’s Environmental Assessment are available for public review at the CPUC Energy Division CEQA Unit and on the project website at: <http://www.cpuc.ca.gov/Environment/info/asp/windsorsub/toc-pea.htm>.

#### 4.16 Other Public Agencies Whose Approval is Required

The CPUC has exclusive authority to approve or deny PG&E’s application; however, various permits from other agencies may also need to be obtained by PG&E for the proposed project. If the CPUC issues a PTC, it would provide overall project approval and certify compliance of the project with CEQA. In addition to the PTC, Table 4-6 summarizes the permits from other federal, State, and local agencies that may be needed for the project.

**Table 4-6. Permits that May Be Required for the Windsor Substation Project**

Agency	Jurisdiction	Requirements
<b>Federal/State Agencies</b>		
United Fish and Wildlife Service	Endangered species consultation	Consultation on federally listed species; possible impacts to threatened and endangered species (if appropriate).

**Table 4-6. Permits that May Be Required for the Windsor Substation Project**

Agency	Jurisdiction	Requirements
United States Army Corps of Engineers	Clean Water Act Section 404 permits	Consultation on any potential impacts to jurisdictional waters (if appropriate).
California Department of Transportation	Highways and State-owned roadways	Transportation Permit for movement of vehicles that may qualify as an oversized or excessive load (if required)
California Office of Historic Preservation	Consultation (through CEQA review process)	Cultural resources management (if appropriate)
Regional Water Quality Control Board (RWQCB) – North Coast Region	National Pollution Discharge Elimination System, General Construction Storm Water Pollution Prevention Plan (SWPPP)	Submission of Notice of Intent (NOI) to Regional Board and preparation of SWPPP
RWQCB – North Coast Region	Spill Prevention Control and Countermeasure (SPCC) for mineral oil in transformers. Clean Water Act Section 401 permits.	Calculation of containment requirements and system design. Consultation on any potential impacts to jurisdictional waters (if appropriate).
California Department of Fish and Wildlife	Endangered species consultation. Section 1600 permit (if appropriate).	Consultation on State-listed species; possible impacts to threatened and endangered species (if appropriate). Consultation on impacts to jurisdictional waters and riparian areas (if appropriate).
<b>Local/Regional Agencies</b>		
Town of Windsor	Building and Grading Permits and Safety Requirements	Ministerial approval for construction of new facilities
Sonoma County	Roadway Encroachment and/or Transportation Permit	Ministerial approval for possible closure of roads for transportation of heavy or oversized equipment and construction of facilities within public roadway rights-of-way

## 4.17 Substation Site Alternatives Considered

CEQA does not require consideration of alternatives when a proposed project would result in no significant environmental impacts after mitigation. This is because, under CEQA, a “reasonable alternative” is one that could feasibly accomplish most of the basic objectives of the project and avoid or substantially lessen one or more of the significant effects of the project. Nevertheless, CPUC’s GO 131-D requires that an application for a 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.). A summary of the alternatives presented in PG&E’s PEA is provided below.

In identifying the project site, PG&E evaluated other sites that could potentially be used for a substation. In all, ten potential sites were considered:

- Site 1 on American Way between the Fulton No. 1 line and Highway 101
- Site 2 is near the center of Windsor on Bell Road, just east of the NWPRR and Fulton No. 1 line
- Site 3 is at the Town of Windsor Public Works Office/Yard, wastewater treatment storage ponds and water treatment plant, west of the NWPRR and the Fulton No. 1 line
- Site 4 is at the end of Star View Drive south of Windsor town limits
- Site 5 is on Wilcox road, just west of the NWPRR and Fulton No. 1 line and 2000 feet south of the proposed site

- Site 6 is south of the proposed project site on Herb Road, west of the NWPRR and Fulton No. 1 line
- Site 7 is southeast of the proposed project site on Old Redwood Highway, east of the NWPRR and Fulton No. 1 line
- Site 8 is the proposed project site. It is near the northern limits of the town of Windsor at the corner of Old Redwood Highway and Herb Road, immediately east of the NWPRR and Fulton No. 1 line
- Site 9 is on Jensen Lane on agricultural land near the eastern border of Windsor
- Site 10 is at the corner of Shiloh Road and Conde Lane in south Windsor, adjacent to the NWPRR and Fulton No. 1 line

### Site Alternative 1

Site 1 is located on American Way at Lot 8 of the Evans Drew Industrial Subdivision. The site is zoned light industrial and currently is vacant. The western portion of the site serves as a wetland preserve under a conservation easement. The surrounding land uses include vacant light industrial to the north, east, and south. To the west are the conservation easement, railroad tracks, and single family residential beyond the railroad tracks. The parcel is 5.4 acres including the conservation easement, which cannot be developed. Substation construction would require removal of at least three oak trees, and the fenced footprint would fully occupy the developable area of the site. Only frontage landscaping would be possible. ~~Distribution work would be similar to the proposed substation site (Site 8).~~ Because of the undevelopable areas under conservation easement, the remaining site area is too small to accommodate the substation. Therefore, it has been removed from further consideration.

### Site Alternative 2

Site 2 is located at 8711 Bell Road, in an area zoned High Density Residential/Neighborhood Center. Currently the site is vacant; it has a history of industrial use, specifically as the site of a lumber mill. Surrounding areas are zoned for residential, for a public school, for railroad tracks, and for wastewater treatment ponds. The parcel is 8.91 acres. The substation would be located at the southern tip of the parcel, immediately adjacent to the railroad right-of-way, allowing the northern portion of the parcel to remain available for future development. The substation site is immediately adjacent to the Fulton No. 1 60 kV line, so power line connection would be direct.

The potential substation location at Site 2 would conflict with existing development plans by the Town of Windsor, and the Town would be opposed to a substation at this site. A perennial creek with dense riparian vegetation borders the east side of the site, and setbacks would be required. In addition, the site is in close proximity to Windsor Creek Elementary School. Combined, these issues represent significant constraints that would make this site extremely difficult to permit.

### Site Alternative 3

Site Alternative 3 is at 8400 Windsor Road, on a 24 acre lot zoned Public/Institutional. Currently, the site serves as a Town of Windsor Public Works Office/Yard, and houses wastewater treatment storage ponds and a water treatment plant. Adjacent land uses include residential, wastewater treatment storage ponds, railroad tracks, the Site Alternative 2, a public works office building, a fire station, and two single-family residences. Windsor High School is 825 feet from Site 3. The Public Works Department has an unfunded plan to expand the wastewater treatment storage ponds, which means the substation would need to be in the northeast corner of the site. The substation would be immediately adjacent to the Fulton No. 1 60 kV line, so connection to the power line would be direct. There is no sensitive habitat on

the site. However, proximity to residential areas could create construction traffic and visual impact concerns.

### **Site Alternative 4**

Site Alternative 4 is at 1144 Starr View Drive, at the end of the public street, and is zoned Estate Residential. Currently, the site is vacant pasture and is surrounded by residential subdivisions and rural residential land use. The substation would be in the northeast corner of the 24-acre parcel (at the end of Starr View Drive).

Connecting the substation to the power line would require construction of a 2,400-foot-long, double-circuit 60 kV loop. The loop would extend along a strip of land owned by the Town of Windsor, which is currently occupied by oak trees. The interconnection poles would need to be greater in height than these trees. West of Starr Road, the double-circuit loop would be in a utility franchise along Starr View Drive for approximately 1,500 feet. Starr View Drive is fronted by single-family homes. It may be possible to convert the existing overhead distribution line to underground to help minimize the number of overhead lines viewed by fronting residences. Reconductoring of the existing overhead circuit along Starr Road would still be required from Starr View Road south to Windsor Road River Road.

Review of aerial photographs suggests that a seasonal stream transects the property diagonally from the northwest to the southeast. It is possible the stream could be avoided. However, the overhead double circuit 60 kV power line along a residential street could represent a potentially significant environmental constraint.

### **Site Alternative 5**

Site 5 is located at 309 Wilcox Road. The current land use is rural residential in the southeast corner of the parcel. Neighboring land uses include rural residential, subdivision residential, railroad tracks, a private Christian Academy, and an auto dismantler. The parcel is 5.09 acres, and the substation would be sited on the northeast side of the property adjacent to the railroad tracks. Wilcox road, a private road serving a parcel to the north, is proposed to provide access to the site; this section of road is likely on an access easement.

Because the Fulton No. 1 60 kV power line runs adjacent to the Site 5, power line connection would be direct. Site 5 is located north of town center, and thus would require similarly extensive distribution reinforcement as the proposed substation site (Site 8). Unlike the proposed site, however, there are no adjacent public roads to the undergrounding, meaning routing and installation would be much more challenging. The site has environmental constraints as well. In particular, aerial photos indicate its hydrology may provide suitable habitat to Burke's Goldfields, a state and federally listed plant species. The Christian Academy across the railroad tracks has playing fields and classrooms within 120 and 500 feet, respectively, of Site 5.

### **Site Alternative 6**

Site 6 is located at 10501 Herb Road on a 23-acre parcel. The parcel is zoned Estate Residential, and surrounding land uses include Rural Residential, a vineyard, railroad tracks, the Windsor school bus yard, and the proposed substation site (Site 8). The parcel has approximately 980 feet of frontage along the railroad tracks. The substation would front the railroad tracks, with the actual location to be determined by both potential environmental issues and negotiations with the existing property owner.

The existing Fulton No. 1 60 kV Power Line runs along the northeast side of the parcel, meaning power line connection would be direct. Site 6 is located north of town center, and thus would require similarly extensive distribution reinforcement as the proposed site. Herb Road is the nearest public street, abutting the south side of the parcel. Several environmental constraints apply to the site. A wetland delineation prepared for the parcel by the owner indicates numerous wetlands, both in the center of the parcel and near the existing power lines. The site is known to contain Burke's goldfields, a listed plant species. Three mature oak trees situated approximately 100 feet west of the railroad right-of-way are equally spaced along this frontage, and substation development would likely require removal of at least three trees.

## Site Alternative 7

Site Alternative 7 is at 10525 Old Redwood Highway on a 4.81 acre parcel zoned Service Commercial. Currently the parcel is the site of Pick & Pull Auto Parts, an auto dismantling service. Surrounding land uses include auto dismantling, commercial, railroad tracks, and rural residential. The substation would occupy approximately 1.5 acres adjacent to the railroad tracks, covering a minimum of 250 by 270 feet at the southwestern corner of the parcel.

Because the Fulton No. 1 60 kV is directly across the railroad tracks from Site 7, a short span would provide a power line connection. Site 7 is located north of town center, and thus would require similarly extensive distribution reinforcement as the proposed site (Site 8). The site's history as an auto dismantling facility means that hazardous materials could be found at the site. The site is not currently for sale, meaning development at this site would require cooperation from the current owner for purchasing and for an access/distribution line easement from Old Redwood Highway to the site. Furthermore, construction access could significantly affect the daily business operations of neighboring land uses.

## Site Alternative 8

This is the proposed substation site. Its location, description, power line connection, and distribution circuits are described at length in the preceding sections. The Town of Windsor supports the use of the rear portion of this site, as long as landscaping along road frontages is consistent with the Town Gateway Concept. Although there is potential presence of rare plants and wetlands along the northern portion of the 60 kV line, it is anticipated that these resources could be avoided or temporary impacts mitigated to a less-than-significant level.

## Site Alternative 9

Site Alternative 9 is located at 657 Jensen Lane on a 27.9 acre parcel. The parcel is currently used for vineyards and is zoned Surrounding Residential. Surrounding land uses include additional vineyards to the east and single-family residential around the remainder of the parcel. The substation would be sited along the east parcel border to create the maximum amount of distance from the neighboring residential land uses.

To create power line connection, an approximately 1.10-mile double-circuit line from the substation to the Fulton-Hopland 60 kV Power Line to the east would be built. All 12 distribution circuits would be underground, heading west from the substation approximately 1,000 feet down Jensen Lane. Interconnection would be with an existing distribution circuit on Hembree Lane. This existing circuit would not need reinforcement, as the location is situated close to the center of the Windsor's electrical load. Based on a history of opposition to neighborhood development at the site, this location would likely be difficult

to permit for a substation. Additionally, the long power line could result in potential visual and agricultural impacts and add substantial costs.

## **Site Alternative 10**

Site 10 is located at the northeast corner of Shiloh Road and Conde Lane. The north half of the parcel is zoned Recreation, while the south half is zoned Light Industrial. Currently, the land is actively used for agriculture. Site 10 was suggested by the Town of Windsor Planning Department based on its close proximity to heavy industrial land uses south of Shiloh Road. The parcel covers 40 acres, and the substation would be in the northwest corner of the property fronting Conde Lane.

To create a power line connection, an approximately 1,200-foot extension from the existing Fulton No. 1 60 kV Power Line at Shiloh Road to the substation would be required. All distribution circuits would be underground to the north since Conde Lane is an underground distribution district, and would connect to circuits similar to the arrangement at the proposed substation site. However, this site's close proximity to the Fulton Substation would result in minimal distribution benefits.

The site is adjacent to a perennial stream with mature riparian vegetation, which may provide habitat for some sensitive species. The power line connection would avoid most mature oak trees, but potentially significant tree trimming and possible removal would be required for the span over Pool Creek into the station. Additionally, the site is currently proposed for retail development. Even if a substation could be accommodated within this development, the location of this site is too close to Fulton Substation to provide the distribution load support needed for the Town of Windsor.

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## 5. Environmental Analysis

### 5.1 Aesthetics

AESTHETICS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

#### 5.1.1 Visual Inventory of Existing Conditions

##### *Existing Landscape Setting and Viewer Characteristics*

This section discusses the existing visual character of the region, existing visual quality in the project area, and potential viewer exposure to the proposed project.

**Regional Context.** The proposed project is just inside the northern border of the Town of Windsor, which has a population of approximately 26,000. It is located in the Santa Rosa Valley, between the Sonoma Mountains to the east and a series of coast ridges to the west. Many vineyards occupy the Santa Rosa Valley, as do grazing lands and other agriculture. Surrounding ridges are heavily forested and less developed than the valley floor. Highway 101 serves as the major north-south transportation corridor and is just east of the project. Windsor and the surrounding Santa Rosa Valley have grown rapidly in the last decade, resulting in a mixture of older homes and structures, some more than 100 years old, new subdivisions, industrial and commercial development, and agriculture. These varying land uses are interspersed, with development often directly abutting rural and agricultural areas.

The proposed project area is relatively flat, located between Highway 101 on the east and the railroad corridor on the west (see Figure 4-1, Project Overview Map). Nearby ridges and hills are partially visible in the background from some places within the general vicinity, but are not directly visible from the proposed project site. Industrial/commercial land uses located nearby along Old Redwood Highway include a building supply warehouse and an auto dismantler. Existing vertical elements in the landscape include wood pole power lines along Old Redwood Highway and overhead lighting poles associated with nearby industrial/commercial properties.

**Proposed Substation Site.** The substation site is bounded by Herb Road on the northwest, Old Redwood Highway on the northeast and east, rural residences on the north, a school bus yard on the southeast, and the railroad right-of-way and more rural residences to the west. See Figure 4-2 for an aerial view of the site and Figure 5.12-1 for residences near the substation site (identified as sensitive receptors). Both Herb Road and Old Redwood Highway afford relatively unobstructed, close-range views of the project site. The proposed substation property is zoned for Service Commercial (SC). Although currently vacant, it contains a remnant foundation and paving from its former industrial use. The site has only a few

scattered trees along the northern and western edges near Herb Road and the railroad; much of the site is covered with grasses and other weedy vegetation.

### ***Project Viewshed***

The project viewshed is the area from which the proposed project would be visible. The proposed substation would generally be visible only in the immediate foreground (0 – 300 feet) and foreground (300 feet to 1/2 mile) distance zones. Due to intervening landforms, vegetation, and structures, the site would be only intermittently visible at greater distances. As described below, the proposed project would be visible from some nearby locations along public roads, and the chief viewers would be passing motorists. A Class I hiking and bicycle trail is proposed along the rail corridor as part of the Sonoma-Marin Area Rail Transit (SMART) project and a Class II bike lane is proposed along Old Redwood Highway adjacent to the project site (Sonoma County 2008). Cyclists currently constitute a small viewer group, but both hikers and cyclists may become a larger group in the future. Visibility from nearby residential areas would be limited. Several existing overhead power lines, including those that would be upgraded as part of the proposed project, are existing landscape features in the vicinity of the proposed project site. Current nighttime lighting in the project area includes street lighting on nearby roadways. Figure 5.1-1 shows four photographs of the proposed substation site and vicinity. Figure 5.1-2 displays the photo viewpoints on a vicinity map.

### ***Project Features***

**Proposed Substation.** The substation site is 4.1 acres; the walled/fenced substation footprint would occupy 2.6 acres within the property. A 10-foot-high prefabricated concrete wall would border the north, east, and west sides of the 2.6-acre substation; chain link mesh fabric fencing would enclose the south side. Access to the substation would be from Old Redwood Highway.

The major project components and dimensions are summarized in Table 5.1-1. The tallest components within the substation property would be the dead-end structures, approximately 42 feet tall. The majority of the substation equipment would be 20 feet tall or lower. The equipment and structures within the substation would be neutral gray in color with a non-reflective finish. The substation components are described in further detail in Section 4.9.1 of the Project Description. The substation layout plan and a typical profile are shown in Figures 4-4 and 4-5.

**Table 5.1-1. Approximate Dimensions of Major Project Components**

Component (number of elements installed at ultimate build-out)	Height (ft)	Length (ft)	Width (ft)
Dead-end Structures (2)	42	32	1
Bus Structure Sections (6)	20	varies	18
Disconnect Switches (18)	20	18	7
Transformers (3)	18	18	16
Circuit Breakers (6)	15	12	10
Switchgear Enclosure (1)	12	75	18
Switchgear Enclosures (2)	12	28	18
Replacement weathered TSP (1 outside substation site)	75	—	—

— = Dimension not applicable

~~A final landscape plan and concrete wall design for the substation property would be developed during the final project design phase, and would incorporate input from the Town of Windsor, CPUC, and project engineers and security personnel. Although some screening exists around the site in the form of~~

~~mature trees, the final landscape plan would be designed to increase the amount of screening with respect to public views of substation facilities, to enhance the substation property's appearance, and to integrate the substation with its surroundings.~~

The conceptual landscape plan is provided as Figure 5.1-3. The new project landscaping would include ecologically appropriate species, including a mixture of native, deciduous and evergreen trees, such as valley oak and coast live oak (*Quercus lobata* and *Quercus agrifolia*). As indicated, PG&E will provide landscaping along Old Redwood Highway, Herb Road, and the railroad tracks. Conceptual plans include planting eight broadleaf evergreen trees, four coniferous trees, five deciduous trees, and 65 evergreen shrubs along the two roads and the railroad ROW. No trees would be planted under the overhead conductors on the southwest side of the site.

The 10-foot-high concrete wall would be earth-toned and set back from adjacent roads. Along Old Redwood Highway the setback would vary from 50 feet near Herb Road to nearly 150 feet at the southeast corner of the site, owing to a curve in the road. The wall would be set back at least 25 feet from Herb Road. These setbacks would allow for trees and other landscaping to be planted along these roadways. Two gates on the east side of the substation, facing Old Redwood Highway, would be designed to blend with the wall.

Security lighting ~~for surrounding~~ the substation would consist of sodium vapor lamps. On the south side of the substation, five lights would be mounted 9.5 feet above the ground with three located on the steel gantry structure and one between the transformer and switchgear. On the north side of the substation, there would be free-standing light poles, approximately 12 feet tall. On the switchgear enclosure, doors would have fixed lights. Exterior lighting would use of non-glare light bulbs. Lighting fixtures would be located and designed to avoid casting light or glare toward off-site locations.

**Distribution Line Work.** Distribution line work would require reconductoring of 9,420 feet of existing transmission line along Old Redwood Highway and rebuilding 7,900 feet of the Fulton No. 1 60kV line. On both lines, existing 45 foot tall wood poles would be replaced with wood poles approximately 20 feet taller. To connect the substation to the existing power line, an approximately 75-foot-tall weathered TSP would be installed west of the railroad, replacing an existing wood pole. Some underground work would be required for reconductoring along Old Redwood Highway. Additional details of the power line interconnection and distribution lines are described in Sections 4.9.3 and 4.9.4 of the Project Description.

### ***Applicable Regulations, Plans, and Standards***

The project is not within the viewshed of any designated or eligible State scenic highways; however, Highway 101 is identified by the Town of Windsor as a scenic corridor. Because the CPUC has exclusive jurisdiction over the siting and design of utility facilities, local governments have no discretionary authority over utility power line or substation projects. However, this aesthetics analysis considers public plans and policies related to visual quality that are locally applicable.

**Town of Windsor General Plan 2015.** The Town of Windsor General Plan 2015 (Plan) identifies views of the surrounding foothills, agricultural lands, open space areas and woodlands as scenic resources that should be preserved. Chapter 6, Environmental Resources, of the Plan contains provisions to preserve scenic resources and designates a number of roadways as Scenic Corridors, including nearby Highway 101. Additionally, the plan has some general goals for preserving riparian vegetation and mature trees in street designs.

Figure 6-3 in the Plan identifies Highway 101 as a scenic corridor. The Scenic Resources subsection states that "The Town should recognize the roads shown in Figure 6-3 as scenic corridors (also referred to as

scenic routes) which enhance the visual experience for Town residents and non-residents.” It further recognizes the worth of roads that “exhibit unusual natural or man-made features of interest, such as close-up to mid-range views of rock outcroppings, waterways, or oak woodlands.” The plan states that “development proposals along scenic corridors should not detract from the visual and recreational experience, but should seek to be harmonious and subordinate to the natural features that comprise the scenic viewshed. Components of project design that should be considered in making this assessment should include building height, massing, orientation, color, building materials, rooftop appurtenances, storage areas, signage, lighting, and landscaping.” The plan further requires that scenic views of surrounding hills be preserved and sound walls avoided if possible. The Town will review any project “along designated rural lanes and scenic corridors” to ensure it complies with the mandates above.

## 5.1.2 Environmental Impacts and Mitigation Measures

### *Visual Impact Assessment Methodology*

This visual analysis used a Visual Sensitivity/Visual Change (VS/VC) methodology to assess the visual effects of the proposed project on existing landscapes (USDOT 2011). The VS/VC methodology includes a characterization of the visual sensitivity of existing landscapes, the characteristics of existing visual changes occurring and apparent in the landscape, and the characteristics of the proposed project.

**Visual sensitivity** consists of three components: viewer exposure, viewer concern, and visual quality. Landscapes that have very low viewer exposure (based on landscape visibility, the viewing distance, the number of people who view the landscape, or the duration of time that the landscape can be viewed) would tend to be less sensitive to overall visual change. **Visual change** describes the degree of actual visible change expected as a result of the project, and is rated on a scale of Low to Moderate to High. Project-induced visual change could result from aboveground facilities, vegetation removal, landform modification, component size or scale relative to existing landscape characteristics, and the placement of project components relative to developed features. The experience of visual change can also be affected by the degree of available screening, distance from the observers, and angle of view. The fundamental elements of visual change include visual contrast, visual dominance, and scenic view obstruction. Visual contrast refers to visual discrepancies of form, line, color or texture of the project against the existing landscape. Visual dominance refers to the degree to which this contrast would demand the attention of casual viewers. Scenic view obstruction refers to the degree to which the project would block or intrude upon scenic view corridors, particularly those identified in public policies.

Figure 5.1-1 shows the proposed substation site as seen from four Key Observation Points (KOPs), described below and shown by location in Figure 5.1-2. The existing view and visual simulation are shown in Figures 5.1-4A, 5.1-4B (visual simulation without landscaping), and 5.1-4C (visual simulation with landscaping). Because the distribution line work is updating existing landscape elements rather than creating new ones, KOPs were chosen for the substation only. Using these simulations and the VS/VC methodology, determination of the significance of aesthetic changes were made based on analyst experience and site-specific circumstances. Table 5.1-2 was used as a consistency check. For a visual impact to be considered significant two conditions generally exist: (1) the existing landscape is of reasonably high quality and is relatively valued by viewers; and (2) the perceived incompatibility of one or more elements or characteristics of the project tends toward the high extreme, leading to a substantial reduction in visual quality.

Table 5.1-2. Visual Impact Significance Criteria

Visual Sensitivity	Visual Change				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	No impact <sup>1</sup>	No impact	Less Than Significant <sup>2</sup>	Less Than Significant	Less Than Significant
Low to Moderate	No impact	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated <sup>3</sup>
Moderate	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated
Moderate to High	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated	Potentially Significant Impact <sup>4</sup>
High	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated	Potentially Significant Impact <sup>4</sup>	Potentially Significant Impact

1 - No Impact – Impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

2 - Less Than Significant – Impacts are perceived as negative but do not exceed environmental thresholds.

3 - Less Than Significant with Mitigation Incorporated – Impacts are perceived as negative and may exceed environmental thresholds depending on project and site-specific circumstances, but are Less Than Significant with mitigation incorporated.

4 - Potentially Significant Impact – Impacts with feasible mitigation may be reduced to levels that are not significant or avoided all together. Without mitigation, significant impacts would exceed environmental thresholds.

**VS/VC at Key Observation Points**

The project site was investigated from numerous viewpoints from which sensitive receptors could see the site, including local streets and nearby residential areas. The analysis here is based on the Applicant’s Supplement to the PEA and Aspen Environmental Group’s site visit on October 19, 2011. Four vantage points were selected as key observation points (KOPs) for detailed analysis. These four KOPs provide typical and worst-case visual and aesthetic impacts of the proposed project. The locations of the KOPs (labeled in Figure 5.1-1 as “Viewpoints”) are:

¾ KOP-1: Old Redwood Highway – Looking North

¾ KOP-2: Old Redwood Highway – Looking West

¾ KOP-3: Herb Road looking south – Looking South

¾ KOP-4: Herb Road and NWPRR – Looking Southeast

**KOP-1: Travelers on Old Redwood Highway – Looking North.** KOP-1 was established on Old Redwood Highway near the Highway 101 off-ramp, looking north toward the proposed substation site. The

shoulders and lane lines of Old Redwood Highway and overhead electrical lines form moderately strong horizontal lines, and wooden utility poles interrupt the sky and constitute strong vertical lines. Mature oak and conifer trees are scattered along both sides of Old Redwood Highway and create open branching patterns in the foreground, and a backdrop of medium textured, dark green vegetative screening in the middleground and background. The school bus yard is partially visible among the roadside trees. This view is representative of views of northbound traffic on Old Redwood Highway. Visual impacts at this KOP would be less than significant.

### ***Visual Sensitivity at KOP-1***

- <sup>3/4</sup> **Viewer Exposure: low to moderate.** The substation site is moderately screened from view by vegetative features in this landscape, but some new vertical elements of the proposed substation would be visible in the foreground from KOP-1. The number of viewers at KOP-1 is moderate, as indicated in the Transportation and Traffic analysis in Section 5.16. Given the posted speed limits of 40 mph on Old Redwood Highway, the view duration for this group is relatively short—estimated at less than 30 seconds (approximately 700 feet). Therefore, viewer sensitivity is considered low to moderate.
- <sup>3/4</sup> **Viewer Concern: low-to-moderate.** Area residents can be expected to have low-to-moderate concern for visual impacts from the substation as seen from Old Redwood Highway because they are already subject to views of a mix of existing light industrial land uses, open spaces, rural/agricultural farms, and newly developing residential subdivisions in addition to the existing site fencing and disused condition.
- <sup>3/4</sup> **Visual Quality: low.** The primary focal point for this landscape is the row of trees along the west side of the road. A secondary focal point is the school bus yard. Two utility poles, both on the west side of Old Redwood Highway, create major vertical lines in this landscape. The ground plain of the proposed substation site is flat and has no interesting features. Visual quality of this landscape is low.
- <sup>3/4</sup> **Overall Visual Sensitivity: low-to-moderate.** For motorists traveling on Old Redwood Highway at KOP-1, the low-to-moderate viewer exposure, low-to-moderate viewer concern, and low visual quality lead to a low-to-moderate overall visual sensitivity.

### ***Visual Change at KOP-1***

- <sup>3/4</sup> **Visual Contrast: moderate.** From KOP-1, the new substation would be partially screened by existing vegetation and by new landscape trees, as shown in Figure 5.1-3 and 5.1-4C. The proposed substation would create horizontal and vertical lines at the perimeter concrete wall and chain-link fence, and new horizontal and vertical lines with the electrical equipment inside the substation. Upper elements in the substation (up to 42 feet high) would stand out against the skyline where they are not screened by foreground vegetation. Though it would be taller and potentially more noticeable than nearby structures, the change in scale would not substantially alter the existing visual character or landscape composition seen in this view. As seen from KOP-1, the new substation would have moderate visual contrast.
- <sup>3/4</sup> **Visual Dominance: low-to-moderate.** Though the project would be partially visible at a foreground viewing distance, the screening provided by existing trees and landscaping, and the neighboring school bus yard, results in a low-to-moderate visual dominance.
- <sup>3/4</sup> **Scenic View Obstruction: low.** The substation would not create any view blockage to any scenic features in the landscape.



<sup>3</sup>/<sub>4</sub> **Overall Visual Change: low-to-moderate.** With moderate visual contrast, low-to-moderate project dominance, and low view obstruction, overall visual change at KOP-1 would be low-to-moderate.

**KOP-2: Travelers on Old Redwood Highway – Looking West.** KOP-2 was established on Old Redwood Highway looking northwest toward the proposed substation site at an immediate foreground viewing distance. The proposed substation site is not screened from view at KOP-2 by existing features in the landscape. Wooden utility poles and mature conifers create strong vertical lines from this view point. Moderate horizontal lines include the shoulder of the road, lane lines, and overhead wires on the existing wooden utility poles. Similar to KOP-1, mature oak and conifer trees on either side of Old Redwood Highway create open branching textures. The backdrop is comprised of mature trees in the distance that form a medium textured, dark green vegetative screening. This view is representative of motorists' views looking northwest from Old Redwood Highway. Visual impacts at this KOP would be less than significant.

### *Visual Sensitivity at KOP-2*

<sup>3</sup>/<sub>4</sub> **Viewer Exposure: moderate.** As seen from KOP-2, the substation site is not screened from view by any topographic or vegetative screening. The new vertical elements of the proposed substation would be visible in the foreground from KOP-2. The number of viewers on Old Redwood Highway is moderate and the duration of view would be brief because of the speed of travel. Therefore, viewer exposure is moderate.

<sup>3</sup>/<sub>4</sub> **Viewer Concern: low-to-moderate.** Area residents can be expected to have low-to-moderate concern for visual impacts from the substation as seen from Old Redwood Highway because they are subject on a daily basis to views of a mix of existing light industrial land uses, open spaces, rural/agricultural farms, and newly developing residential subdivisions.

<sup>3</sup>/<sub>4</sub> **Visual Quality: low.** The primary focal points for this landscape are the utility poles on the west side of Old Redwood Highway. Secondary focal points are created by the scattered trees that also protrude above the skyline. The ground plain of the proposed substation site is flat and has no interesting features. Visual quality of this landscape is low.

<sup>3</sup>/<sub>4</sub> **Overall Visual Sensitivity: low-to-moderate.** For motorists at KOP-2, the moderate viewer exposure, low-to-moderate viewer concern, and low visual quality lead to a low-to-moderate overall visual sensitivity of the visual setting and viewing characteristics of the proposed substation site.

### *Visual Change at KOP-2*

<sup>3</sup>/<sub>4</sub> **Visual Contrast: moderate-to-high.** Without landscaping, the new substation would not be screened from view. The proposed landscape trees and proposed earth-colored concrete wall and wood entry gates would limit the substation's visibility from KOP-2. Substation switchgear enclosures and bus structures would be visible above the wall and between tree canopies. The proximity of the vegetation between the road and the substation would partially screen and breakup the visibility of these taller structures. As seen from KOP-2, the new substation would have moderate-to-high visual contrast.

<sup>3</sup>/<sub>4</sub> **Visual Dominance: moderate.** The project would be seen at an immediate foreground distance. However, given the few elements above the horizon, partial screening provided by landscaping, the wall, and the neighboring school bus yard, project dominance would be moderate as seen from KOP-2.

<sup>3</sup>/<sub>4</sub> **Scenic View Obstruction: low.** The substation would not create any view blockage to any scenic features in the landscape. Therefore, the proposed project would have low view impairment of the skyline and surrounding landscape scenery.



<sup>3/4</sup> **Overall Visual Change: moderate.** Based on moderate-to-high visual contrast, moderate visual dominance, and low scenic view obstruction, the overall visual change at KOP-2 would be moderate.

**KOP-3: Travelers on Old Redwood Highway – Looking South.** KOP-3 was established on Old Redwood Highway at Bisacno Road looking south toward the proposed substation site. The proposed substation site is partially obscured by mature trees on the west side of the road. This is a foreground viewing distance. The existing wooden utility pole creates a strong vertical line against the medium textured, dark green vegetative screening and against the sky. Mature conifers and oaks create strong vertical lines and open branching textures. The shoulder of Old Redwood Highway, lane lines, and overhead electrical lines form moderate horizontal lines in this view. This view is representative of views from southbound traffic on Old Redwood Highway. Visual impacts at this KOP would be less than significant.

### *Visual Sensitivity at KOP-3*

<sup>3/4</sup> **Viewer Exposure: low-to-moderate.** The substation site is partially screened from view at KOP-3 by the mature vegetation along the roadside. The number of viewers on Old Redwood Highway is moderate, and the duration of view would be brief because of the speed of travel, around 40 miles per hour. Therefore, the viewer exposure is low-to-moderate.

<sup>3/4</sup> **Viewer Concern: low-to-moderate.** Area residents can be expected to have low-to-moderate concern for visual impacts from the substation as seen from Old Redwood Highway because they are subject on a daily basis to views of a mix of existing light industrial land uses, open spaces, rural/agricultural farms, and newly developing residential subdivisions.

<sup>3/4</sup> **Visual Quality: low.** The primary focal points for the landscape view at KOP-3 are the existing wooden utility pole and mature trees that create strong vertical lines against the sky. The ground plain of the proposed substation site is flat and has no interesting features. Visual quality of this landscape is low.

<sup>3/4</sup> **Overall Visual Sensitivity: low-to-moderate.** For motorists at KOP-3, the low-to-moderate viewer exposure, low-to-moderate viewer concern, and low visual quality lead to a low-to-moderate overall visual sensitivity of the visual setting and viewing characteristics of the proposed substation site.

### *Visual Change at KOP-3*

<sup>3/4</sup> **Visual Contrast: low to moderate.** After construction, the new substation would be largely screened by existing mature vegetation and new landscape trees in front of the new earth-tone concrete wall. Figures 5.1-4A, -4B, and -4C, show views of the existing site, the site with the substation built, and the site with landscaping at 8 years maturity, respectively. (Note that the dead tree in the center of the image at the road's edge has been removed since this photograph was taken.) Once landscaping matures, none of the substation would stand out against the skyline, and no elements of the project would be visible above the treeline. As seen from KOP-3, the new substation would have low-to-moderate visual contrast.

<sup>3/4</sup> **Visual Dominance: low-to-moderate.** Though the project would be seen at a foreground distance, the absence of elements above the horizon, the screening provided by existing trees and landscaping, and the neighboring school bus yard make visual dominance be low-to-moderate as seen from KOP-1.

<sup>3/4</sup> **Scenic View Obstruction: low.** The substation would not create any view blockage to any scenic features in the landscape. Therefore, the proposed project would have low view impairment of the skyline and surrounding landscape scenery.

<sup>3/4</sup> **Overall Visual Change: low-to-moderate.** With low-to-moderate visual contrast, low-to-moderate dominance, and low view impairment, the overall visual change at KOP-2 would be low-to-moderate.

**KOP-4: Travelers and residents on Herb Road and NWPRR corridor.** KOP-4 was established on Herb Road at the NWPRR crossing looking east toward the proposed substation site. This is an immediate foreground viewing distance. The proposed substation site is largely obscured by mature trees along the NWPRR. These trees create a coarse immediate foreground texture, but do not create strong lines as they are low on the horizon. The NWPRR creates weak horizontal lines, as its dark color does not stand out against the surrounding grasses. This view is representative of motorists' and residents' views along Herb Road, and of potential hikers and cyclists in the future. Resulting visual impacts for this KOP would be less than significant for the substation. For the TSP that would be located about 300 feet south of KOP-4, the resulting visual impact would also be less than significant.

#### ***Visual Sensitivity at KOP-4***

- <sup>3/4</sup> **Viewer Exposure: moderate-to-high for the substation.** The substation site is largely screened from view at KOP-4 by the mature vegetation along the railroad right-of-way. The number of viewers on Herb Road is very low. For drivers, the level of exposure would be moderate because of the speed of travel, around 15 miles per hour. Hikers and cyclists on the proposed Class 1 trail along the SMART project multi-use pathway will have longer view durations, given their slower rate of travel; however, this use is not part of the existing baseline. A limited number of residents on the northwest, west, and southwest sides of Herb road constitute another viewer group. Despite partial screening of the site, residential views tend to be very long, and the sensitivity of this group is considered high. Therefore, the overall viewer exposure from KOP-4 is moderate-to-high.
- <sup>3/4</sup> **Viewer Concern: moderate-to-high.** Residents and travelers in the vicinity of KOP-4 experience a mix of existing light industrial land uses, open spaces, newly developing residential subdivisions, and open space on a daily basis. However, neighboring residents may be accustomed to the existing undeveloped open space. The potential visibility of the site from nearby residences makes viewer concern to moderate-to-high.
- <sup>3/4</sup> **Visual Quality: low.** The primary focal points for the landscape view at KOP-4 are the low trees in the foreground. The ground plain of the proposed substation site is flat and has no interesting features. Visual quality of this landscape is low.
- <sup>3/4</sup> **Overall Visual Sensitivity: moderate.** For residents, motorists, and expected hikers and cyclists in the vicinity of KOP-4, the moderate-to-high viewer exposure, moderate-to-high viewer concern, and low visual quality lead to a moderate overall visual sensitivity of the visual setting and viewing characteristics of the proposed substation site.

#### ***Visual Change at KOP-4***

- <sup>3/4</sup> **Visual Contrast: moderate for substation, moderate to high for TSP.** After construction, the new substation would be mostly screened from view by existing vegetation. None of the substation would stand out against the skyline. However, the new TSP would be visible above the existing trees along the railroad corridor, and would be significantly taller than the pole it would replace. As seen from KOP-4, the new substation would have moderate visual contrast due to its close viewing distance and existing vegetative screening, and the new 75-foot tall TSP would have moderate-to-high visual contrast, as compared to the existing visual conditions.
- <sup>3/4</sup> **Visual Dominance: low-to-moderate for substation, moderate for TSP.** The proposed substation would be seen at an immediate foreground distance, and the proposed TSP at a foreground viewing distance. Given the heavy screening and lack of elements above the skyline, the substation would have low-to-moderate visual dominance. The new TSP would be visible in the foreground, but it

would create a similar brown vertical line and form to the existing wooden pole. Therefore, project dominance would be moderate for the TSP.

¾ **Scenic View Obstruction: low for substation and TSP.** Neither the substation nor the TSP would create any view blockage to scenic features in the landscape. Therefore, the proposed substation and TSP would have low scenic view obstruction.

¾ **Overall Visual Change: low to moderate for the substation, moderate for TSP.** For the new TSP, based on moderate-to-high visual contrast, moderate project dominance, and low view impairment, the overall visual change would be moderate for the new TSP. For the new substation, based on moderate visual contrast, low-to-moderate project dominance, and low view impairment, the overall visual change would be low-to-moderate for the new substation.

### ***Applicant Proposed Measures***

PG&E has committed to APM AE-1 to reduce visual impacts. The full text of this APM is shown in Table 4-5 in the Project Description. PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. APMs are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs, as well as any adopted mitigation measures identified by this Initial Study.

### ***Aesthetics Impacts***

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

*NO IMPACT.* For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. There are no recognized scenic vistas within the proposed project viewshed. Highway 101, a scenic corridor in Windsor, runs in a north-south direction near the site. However, existing mature vegetation screens the site from the highway and the substation would not be visible. Although glimpses of the surrounding ridgelines and hills to the east and west are available from some locations in the project area, these distant views are generally screened by existing mature vegetation. The proposed project would not substantially alter existing views of distant landforms. On Old Redwood Highway, looking across the site, the view is of flat land with extensive mature tree vegetation in the distance. Landscaping at the proposed substation would bring vegetation closer to the road, but would not affect a scenic vista. Therefore, the proposed project would not obstruct or substantially affect a scenic vista or substantially alter views that are currently experienced by the public and no mitigation is required.

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

*LESS THAN SIGNIFICANT.* The proposed project is not visible from any State scenic highway and would not damage any existing scenic resources as seen from any designated or eligible State scenic highway. There are no rock formations, historic structures or other striking visual features on the proposed project site or in its immediate vicinity.

Although not a designated State scenic highway, Highway 101 is listed as local scenic roadway in the Town of Windsor general plan and the Sonoma County general plan. A brief glimpse of the project site is visible from the nearby Highway 101 off-ramp, but views from Highway 101 are screened by existing

mature vegetation and structures. The Highway is 850 feet from the substation site and largely outside of the project viewshed. The proposed project would not have a substantial adverse effect on views from this roadway; therefore, impacts would be potentially adverse, but less than significant, and no mitigation is required.

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

*LESS THAN SIGNIFICANT.* Construction-related visual impacts would result from the presence of equipment, materials, and work crews at the proposed project area. These effects would be most noticeable to residents who live in close proximity to the project and motorists traveling along adjacent roadways. Construction of the substation would take approximately eight months and distribution line work would take six to seven months.

Much of the substation construction would take place behind the wall planned to parallel Old Redwood Highway and Herb Road. With the exception of pole replacement, reconductoring, and circuit work off site, construction activity would be kept within the substation site; therefore, visual impacts of substation construction would be less than significant, and no mitigation is required. During operations, the new substation would not be highly visible from public-view corridors because the substation components would be largely screened from public views by project components, including an 10 foot tall earth-toned concrete wall, wood gates, new landscaping in 75- and 25-foot setback areas, and existing vegetation. The substation would be partially visible from existing residential areas along Herb Road and from the railroad right-of-way, but existing and proposed vegetation would limit this visibility. From surrounding roadways and residential areas, the project would generally not be visible beyond a distance of 0.25 mile.

The scale and appearance of the project would be compatible with the visual character found in the surrounding area and the height of new structures would not significantly exceed the height of existing structures and vegetation in the vicinity. Given the neighboring school bus yard, the proposed project would be noticeable, but would not appear out of context with the landscape setting. As demonstrated in the Visual Sensitivity/Visual Change (VS/VC) analysis for KOPs 1 through 4, the visual impacts of the proposed project would be less than significant. In addition, PG&E has committed to **APM AE-1** (see Table 4-5 in Section 4.14 of the Project Description for full text). This measure commits PG&E to installation of trees and shrubs along Herb Road and in the setback from Old Redwood Highway. This measure would further minimize the project's visual impacts. Therefore, impacts would be potentially adverse, but less than significant, and no mitigation is required.

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

*LESS THAN SIGNIFICANT.* The proposed project would introduce new nighttime lighting for safety and security purposes. Lighting fixtures at the substation would use non-glare light bulbs that would be directed on-site in order to avoid casting light or glare off-site. Vegetation along the railroad tracks would largely screen nighttime project lighting from the residences located to the west. Proposed project landscaping would also provide additional visual screening of project lighting from Old Redwood Highway and Herb Road. New substation structures would be finished with a non-reflective finish and are not expected to be a source of substantial glare or glint. The proposed project security lighting would create an additional source of nighttime light that may be visible from some nearby locations off-site. With project landscaping and the use of non-glare fixtures directed on-site, these project-related light and glare effects would be minimal and impacts to nighttime views would be less than significant.

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## 5.2 Agricultural and Forestry Resources

### AGRICULTURE AND FORESTRY RESOURCES

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

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

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.2.1 Setting

The substation site is not being used for agriculture or timber harvesting, but a portion of the Fulton No. 1 60kV Power Line east of the substation site is located on a parcel used for cattle grazing. The proposed substation site is zoned for Service Commercial use. Adjacent areas are zoned Estate Residential, Gateway Commercial, and Public Institutional. Areas along the Fulton No. 1 60kV line are Service Commercial, Mixed Used, Village Residential, and Public Institutional. Areas along the 12kV power line are zoned Service Commercial, Gateway Commercial, Medium-High Density Residential, Retail Commercial, Public Institutional, and Mixed Use. See Figure 5.10-1 (Land Use) for all general plan designations in the project area.

The California Department of Conservation (DOC) established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to assess the location, quantity, and quality of agricultural lands and conversion of these lands to other uses. FMMP data are used in elements of some county and city general plans, in regional studies on agricultural land conversion, and in environmental documents as a way of assessing project-specific impacts on farmland. The FMMP classifies agricultural land as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land.



Prime Farmland has the best combination of physical and chemical features to support ongoing agricultural production; to be designated as Prime Farmland, farmland must have been irrigated in the four years prior to FMMP mapping.

A portion of the Fulton No. 1 60 kV distribution line right of way, currently used for grazing, includes 0.2 miles of Farmland of Local Importance and 0.01 miles of Farmland of Statewide Importance (DOC 2008). None of the work areas for the substation or distribution lines are subject to Williamson Act contracts; the nearest Williamson Act land is approximately 940 feet east of the proposed substation site (DOC 2008, Sonoma County Permit and Resource Management Department 2013). Distribution line work would occur primarily within the public utility easement area or within public streets.

## 5.2.2 Environmental Impacts and Mitigation Measures

**a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as Shown on the Maps Prepared Pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to Non-agricultural use?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The proposed substation site is located in an area zoned Service Commercial and is adjacent to areas zoned Estate Residential, Gateway Commercial, and Public Institutional. The area is not currently cultivated, nor is it designated as Farmland. A small section of the rebuilding of the Fulton No. 1 60kV Power Line would occur in an area designated as Farmland of Statewide Importance that is currently used for cattle grazing. **Mitigation Measure LU-1** in Section 5.10 (Land Use) requires communication with affected landowners regarding construction schedule. With the implementation of this measure, impacts to agriculture would be less than significant.

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

*NO IMPACT.* The site for the proposed substation is located in an area zoned Service Commercial and is adjacent to areas zoned Estate Residential, Gateway Commercial, and Public Institutional. The distribution line improvement areas are not zoned for agriculture. None of the proposed project area is covered by Williamson Act contracts. Therefore, there would be no impact.

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

*NO IMPACT.* The proposed project does not include any designated forest or timberland. The substation site is designated for Service Commercial use and the distribution lines pass through areas designated for residential and commercial uses. Therefore, there would be no impact.

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

*NO IMPACT.* The proposed project area does not include any designated forest or timberland; therefore, there would be no impact.



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

*LESS THAN SIGNIFICANT.* As noted in Section 5.2(a), there is a small agricultural area currently used for grazing directly east of the proposed substation site and surrounding a small portion of the Fulton No. 1 60kV Power Line. However, while some of this area has been designated as farmland by the FMMP, it is not zoned for agricultural use. Any impacts to grazing in this portion of the distribution line would be temporary and would not result in the conversion of FMMP-designated Farmland to non-agricultural use or the conversion of forest land to non-forest use.

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## 5.3 Air Quality

### AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

This section describes the existing air quality within the project area and evaluates the potential air quality impacts associated with construction and operation of the Windsor Substation Project.

### 5.3.1 Setting

The project site is located in the Santa Rosa/Cotati Valley within the San Francisco Bay Area air basin. This air basin includes the southern portion of Sonoma. The Bay Area Air Quality Management District (BAAQMD) regulates sources of air pollution and the programs to improve air quality in the region. The Northern Sonoma Air Pollution Control District jurisdiction begins just north of the project site.

The climate in the project area is Mediterranean with cool, wet winters and warm, mostly dry summers. In the summer, average high temperatures are in the low 80s Fahrenheit (F) and average low temperatures are in the low 50s °F. In winter, temperatures peak in the low 60s F and drop into the 30s °F (WRCC 2011). Average annual precipitation is 30 inches, and 80 percent of annual rainfall occurs between November and March (WRCC 2011). Average annual wind speeds in the Santa Rosa/Cotati Valley area are approximately 5 miles per hour (WRCC 2011).

The mountains at the northern and eastern ends of the Santa Rosa/Cotati Valley create natural barriers, and this sub-region does not have direct access to marine airflow. Because of this, air pollutants may become concentrated in area during stagnant conditions. This can occur when there is low marine air flow through the Petaluma Gap and may be aggravated by warm air from the Petaluma Valley becoming trapped against the mountains to the north and east (PG&E 2010; BAAQMD 2011).

Ambient air quality is assessed by measuring concentrations of air pollutants in the ambient air. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are planning standards that define the upper limits for airborne concentrations of pollutants. The standards are designed to protect public health and welfare with a reasonable margin of safety. At the national level, the federal Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to establish NAAQS and designate geographic areas that are either attaining or violating the standards. In California, air

quality management and regulation is the responsibility of the California Air Resources Board (CARB) and local air quality management districts (such as BAAQMD).

The NAAQS and CAAQS are established for “criteria pollutants.” These are ozone, respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe), but it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation. The USEPA and CARB both have independent authority to develop and establish ambient air quality standards, and in general, the CAAQS are more stringent than the corresponding NAAQS. The national and California standards are shown in Table 5.3-1.

**Table 5.3-1. National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour	0.09 ppm	—
	8-hour	0.070 ppm	0.075 ppm
Respirable Particulate Matter (PM10)	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
	Annual Mean	20 µg/m <sup>3</sup>	—
Fine Particulate Matter (PM2.5)	24-hour	—	35 µg/m <sup>3</sup>
	Annual Mean	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour	0.18 ppm	0.100 ppm
	Annual Mean	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO <sub>2</sub> )	1-hour	0.25 ppm	0.075 ppm
	24-hour	0.04 ppm	0.14 ppm
	Annual Mean	—	0.03 ppm
Lead	30-day Average	1.5 µg/m <sup>3</sup>	—
	Calendar Quarter	—	1.5 µg/m <sup>3</sup>

Notes: ppm=parts per million; µg/m<sup>3</sup>= micrograms per cubic meter; “—” =no standard  
Source: CARB 2011a

The USEPA and local air districts work together to classify areas of the nation as attainment, unclassified, or nonattainment. The classification depends on whether the monitored ambient air quality data show compliance (attainment), insufficient data available (unclassified), or non-compliance (nonattainment) with the ambient air quality standards. Table 5.3-2 provides the attainment status for the national and California ambient air quality standards in the BAAQMD.

**Table 5.3-2. Attainment Status for Bay Area Air Quality Management District**

Pollutant	Federal Designation	State Designation
Ozone (1-hour)	No Federal Standard	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
PM10	Unclassified	Nonattainment
PM2.5	Attainment/Nonattainment	Nonattainment
CO	Attainment	Attainment
NO <sub>2</sub>	Attainment	Unclassified/Attainment
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment	Attainment

Source: BAAQMD 2011

### **Existing Local Air Quality Conditions**

The CARB and BAAQMD monitor ambient concentrations of criteria pollutants in the project area. Table 5.3-3 shows exceedances of CAAQS in Sonoma County between 1998 and 2008. Table 5.3-4 shows air quality measurements at the nearest air quality monitoring site to the proposed project (located on 5<sup>th</sup> Street in Santa Rosa). This station, the only monitoring station within BAAQMD jurisdiction in Sonoma County, provides data that are most representative of the project area. The Santa Rosa station is located just south of Windsor in the Cotati Valley, and experiences similar conditions to those found in Windsor.

**Sensitive Receptors.** Residential areas, schools, day care centers, hospitals, and convalescent homes are examples of land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses (BAAQMD 2011). Figure 5.12-1 shows residences in the proposed project area.

**Ozone.** Ambient levels of ozone in the BAAQMD have improved since 1998 (CARB 2011b). The number of exceedances of the state and federal standards has generally declined. These exceedances are generally attributed to unique meteorological patterns, combined with increases in ozone precursor emissions during the summer months. Motor vehicle emissions, industrial emissions, and high ambient temperatures that occur in the inland portions of the BAAQMD contribute to summertime ozone formation and subsequent air standard violations. In Sonoma County the state-level one-hour standard for ozone has been exceeded twice since 1998, as shown in Table 5.3-3. Peak hourly average ozone concentrations ranged from 0.070 to 0.100 parts per million (ppm) during this time.

**Particulate Matter.** Concentrations of inhalable PM10 and PM2.5 have remained relatively constant in the BAAQMD since 1998 (CARB 2011b). The maximum 24-hour concentrations of PM10 and the number of exceedances of the state 24-hour standard have remained relatively stable. PM10 is generated within the project area largely as a result of wind during dry conditions (resulting in fugitive dust) and combustion sources. Between 1998 and 2008, the maximum 24-hour PM10 concentration within Sonoma County was 90 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ), which was reached in 2006. The total number of violations of the PM10 state air quality standards (over  $50 \mu\text{g}/\text{m}^3$ ) in Sonoma County between 1998 and 2008 was 54. Air quality in Santa Rosa with respect to PM2.5 has remained relatively constant since 2000. The maximum 24-hour concentration of PM2.5 has remained within a range from 75.9 to 26.6 ppm. The annual arithmetic mean has ranged from 10.8 to 7.6 ppm. Combustion of fossil fuels is the primary source of directly emitted PM2.5, and combustion exhaust contains nitrogen and sulfur compounds that react to form PM2.5 in the atmosphere.

**Toxic Air Contaminants.** Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. The BAAQMD uses a health risk assessment to determine what stationary sources to control as well as the degree of control. If the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or stationary modified source would pose a potential public health risk, then the applicant is subject to a health risk assessment for the source in question. Such an assessment also evaluates the chronic and acute hazards and the potential increased cancer risk stemming from exposure to a change in airborne TACs. The BAAQMD has found as part of its 2010 Clean Air Plan that the estimated lifetime cancer risk (70-year lifespan) from regional exposure to all air toxics combined declined from 1,330 cases per million in 1990 to 405 cases per million people in 2008 (BAAQMD 2010a). Diesel particulate matter (DPM) is classified as a TAC, and statewide and local programs focus on managing this pollutant because many toxic compounds adhere to diesel exhaust particles.

**Table 5.3-3. Sonoma County Exceedances of California Ambient Air Quality Standards Between 1998 and 2010**

Year	Ozone (1-hr) <sup>Note: 1</sup>		Ozone (8-hr) <sup>Note: 2</sup>		PM10 <sup>Note: 3</sup>	
	Number of Exceedance Days	Maximum 1-hr Concentration (ppm)	Number of Exceedance Days	Maximum 8-hr Concentration (ppm)	Number of Exceedance Days	Maximum 24-Hour Concentration (µg/m <sup>3</sup> )
1998	—	0.068	—	—	6	—
1999	1	0.095	—	—	6	54
2000	—	0.078	—	—	—	46
2001	—	0.086	—	—	18	78
2002	—	0.077	—	—	12	64
2003	1	0.096	—	—	—	36
2004	—	0.076	—	—	—	48
2005	—	0.072	—	0.051	—	39
2006	—	0.077	—	0.058	12	90
2007	—	0.071	—	0.059	—	37
2008	—	0.076	—	0.065	*	50
2009	—	0.086	—	0.065	*	*
2010	—	0.084	—	0.068	*	*

Source: BAAQMD 2013 - Bay Area Air Pollution Summary 1998-2009; CARB 2011b - ADAM Air Quality Data Statistics.

1 - The sampling frequency of ozone is continuous (hourly). The CAAQS for ozone is 0.09 ppm.

2 - The eight-hour CAAQS for ozone is 0.070 ppm.

3 - Sampling of particulate matter (PM10) 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 PM10 on the same days. The number of station-sampling days per county is dependent the number of PM10 stations in the county. The state AAQS for PM10 is 50 micrograms per meter of air (µg/m).

\* PM10 discontinued in 2008.

**Table 5.3-4. Santa Rosa 5th Street Air-Monitoring Station Annual Air Quality Measurements Between 1998 and 2010**

Year	Ozone		PM2.5		PM10	
	Maximum 8-hr (ppm)	Maximum 1-hr (ppm)	Annual Arithmetic Mean (µg/m <sup>3</sup> )	Maximum 24-hr (µg/m <sup>3</sup> )	Annual Arithmetic Mean (µg/m <sup>3</sup> )	Maximum 24-hr (µg/m <sup>3</sup> )
1998	0.055	0.068	—	—	—	56.1
1999	0.077	0.095	—	54.9	—	57.1
2000	0.057	0.078	10.5	40.1	18.2	48.4
2001	0.063	0.086	10.8	75.9	21.9	78.1
2002	0.061	0.077	—	50.7	20.4	63.6
2003	0.080	0.096	8.7	38.8	16.9	36.3
2004	0.061	0.076	8.3	26.6	18.0	48.1
2005	0.051	0.072	7.6	33.6	15.9	38.9
2006	0.058	0.077	9.2	59.0	18.8	89.5
2007	0.060	0.071	7.6	32.0	17.1	37.2
2008	0.065	0.076	8.6	30.8	*	49.9
2009	0.66	0.86	8.4	29.0	*	*
2010	0.68	0.84	7.3	26.6	*	*

Source: CARB 2011b - ADAM Air Quality Data Statistics.

\* PM10 discontinued in 2008.

## **Regulatory Setting**

**Federal Clean Air Act (CAA).** NAAQS were established in 1970 for six criteria air pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), 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 Federal CAA required states exceeding the standards to prepare air quality plans showing how the standards were to be met by December 1987. The Federal CAA Amendments of 1990 directed the USEPA to set emissions performance standards for toxic air contaminants and required facilities to sharply reduce emissions.

**California Clean Air Act.** The California CAA requires regions to develop and implement strategies to attain California's Ambient Air Quality Standards (CAAQS). For some pollutants, the California standards are more stringent than the national standards. California also has standards for visibility reducing particles, sulfates, hydrogen sulfide (H<sub>2</sub>S), and vinyl chloride. Local air districts, including the BAAQMD, must periodically prepare air quality management plans showing how the standards will be met.

**California Air Toxics "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 stationary source facilities 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 health risks posed by the emissions.

**Bay Area Air Quality Management District and Regional Air Quality Management Plans.** Responsibility for developing regional air quality management plans lies with the BAAQMD. The local air district also has the authority to issue permits through its rules and regulations by requiring that new stationary sources be subject to New Source Review (NSR) under BAAQMD Regulation II (Permits). The NSR program ensures that the new stationary sources would not interfere with progress to attain the ambient air quality standards. No stationary sources would be associated with the proposed project or subject to permitting. Emissions from mobile and portable sources and temporary activities (such as construction) are managed through a range of state and federal programs that control motor vehicle emissions and emissions from equipment powered by diesel engines.

The BAAQMD periodically prepares and updates the regional air quality management plans to show how the district intends to achieve ambient air quality goals. These plans usually include measures to reduce air pollution emissions from industrial, area, mobile and other sources. In 2001, the Ozone Attainment Plan was prepared for the Bay Area as part of the State Implementation Plan to achieve the ozone standards. Later in 2005, the Bay Area Ozone Strategy was prepared to detail how the BAAQMD will achieve the State 1-hour ozone standard. In addition, the BAAQMD adopted in 2005 an implementation schedule for state-proposed measures for reducing airborne particulate matter.

In 2010, the BAAQMD's Board of Directors adopted the CEQA Air Quality Guidelines (BAAQMD 2012) in an effort to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the San Francisco Bay Area Air Basin. As a result of a March 2012 judicial action, the BAAQMD no longer recommends that thresholds in the 2010 guidelines be used as a generally applicable measure of significant impacts.<sup>6</sup> However, the BAAQMD CEQA Air Quality Guidelines include recommendations for analysis procedures, and threshold of significance justifications; the BAAQMD also prepared detailed documentation for CEQA thresholds prior to its 2010 adoption of the guidelines (BAAQMD 2012).

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<sup>6</sup> The BAAQMD describes the status of its CEQA Guidelines at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>.



**California Air Resources Board (CARB) Off-Road Mobile Sources Emission Reduction Program.** The California CAA mandates CARB to achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the State ambient air quality standards. Off-road mobile sources include construction and farming equipment. Tier 1, Tier 2, and Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996, 2001, and 2006 respectively. In addition, equipment can be retrofitted to achieve lower emissions using the CARB-verified retrofit technologies. The engine standards and ongoing rulemaking jointly address NO<sub>x</sub> emissions and toxic particulate matter from diesel combustion (DPM).

**CARB Portable Equipment Registration Program.** This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

**Town of Windsor General Plan.** Windsor's General Plan includes the following Air Quality Policies:

- ¾ The Town requires that development proposals comply with federal and state air quality standards, but has discretionary review authority to make findings that a project has overriding benefits to the community that outweigh nonattainment of the standards.
- ¾ To conserve air and energy resources, the Town encourages land use patterns and management practices such as higher residential densities and business development intensities at existing and future transit stops.

### 5.3.2 Environmental Impacts and Mitigation Measures

The BAAQMD 2010 thresholds for criteria air pollutant emissions specify that a project during construction may cause a significant impact if it would:

- ¾ Emit more than 54 pounds per day (lb/day) of reactive organic gases (ROG);
- ¾ Emit more than 54 lb/day of nitrogen oxides (NO<sub>x</sub>);
- ¾ Emit more than 82 lb/day of PM<sub>10</sub> from exhaust; or
- ¾ Emit more than 52 lb/day of PM<sub>2.5</sub> from exhaust.

Similar thresholds exist for a project during operation along with a threshold for localized concentrations of CO greater than 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average). For PM<sub>10</sub> and PM<sub>2.5</sub> related to construction fugitive dust, BAAQMD specifies that projects include best management practices (BMP) rather than achieve specific emissions thresholds. These BMPs are shown in BAAQMD CEQA Guidelines (Tables 8-1 and 8-2 of BAAQMD 2011).

The BAAQMD thresholds for community risk and hazards specify that a project may cause a significant impact if the emissions create:

- ¾ Increased incremental cancer risk greater than 10.0 in a million;
- ¾ Increased non-cancer hazard greater than 1.0 Hazard Index for chronic or acute hazards;<sup>7</sup>
- ¾ Incremental increase of annual average PM<sub>2.5</sub> concentration greater than 0.3 µg/m<sup>3</sup> from a single source.

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<sup>7</sup> Acute and chronic exposure to non-carcinogens is expressed as Hazard Index, which is the ratio of expected exposure levels to acceptable reference levels.

### ***Applicant Proposed Measures***

PG&E has committed to the Applicant Proposed Measures (APMs) in Table 4-5 of the Project Description. APMs AQ-1 through AQ-14 relate to air quality impacts. PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. APMs are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs as well as any adopted mitigation measures identified by this Initial Study.

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

*NO IMPACT.* The BAAQMD is the primary agency responsible for managing local air quality and administering other California and federal programs ensuring implementation of the air quality management plan. A project could be inconsistent with the applicable air quality management plan or attainment plan if it could cause population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the attainment plan. The proposed project would not create any new permanent full-time or part-time jobs. The proposed substation would not be staffed. Local PG&E crew members would commute to the project site from the general vicinity. Substation construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over six to seven months.

PG&E estimates that each worker would make two trips per day to and from the site. During operations, PG&E maintenance personnel would visit the site once a month (PG&E 2010). Regional air quality plans anticipate some growth, and this anticipated growth includes the construction of some new infrastructure, such as the proposed project. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan. No impacts would occur, and no mitigation is required.

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

### ***Construction Impacts***

*DURING CONSTRUCTION, LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Emissions during the construction phase would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards. The proposed project involves construction of a substation with a footprint of 2.6 acres. The project would also require rebuilding 1.5 miles of power lines and reconductoring of 1.8 miles of overhead and underground distribution lines. Construction equipment that would be used for the proposed project is shown in Table 4-3 (Substation Construction – Typical Equipment Use) in Section 4 (Project Description). The construction workforce is described in detail Section 4.10.3 (Construction Workforce and Schedule). Substation construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over six to seven months.

During construction, emissions would be generated at the proposed substation site, at distribution line work areas, and along the roadways used to access these locations. Construction emissions would be caused by exhaust from vehicles and equipment (e.g., ozone precursors [volatile organic compounds and NO<sub>x</sub>], CO, and particulate matter [PM<sub>10</sub> and PM<sub>2.5</sub>]) and fugitive dust/particulate matter from ground-disturbing activities and travel on unpaved roads. Diesel and gasoline-powered construction equipment at work sites would include loaders, graders, backhoes, cranes, demolition equipment, and

trucks for lifts, delivery, concrete, water, and work crews. Outside of work sites, exhaust emissions would be caused by vehicles transporting equipment and supplies to the sites, trucks removing debris, and workers commuting to and from work sites. Table 5.3-5 summarizes the estimated average daily construction emissions.

**Table 5.3-5. Windsor Substation Project – Estimated Construction Emissions (lb/day)**

	NOx	ROG	PM10 [exhaust]	PM10 [dust]	PM2.5	CO	SO <sub>2</sub>
Average Daily Emissions 2012	38.5	5.5	2.4	26.1	2.2	23.2	0.1
Average Daily Emissions 2013	43.2	4.4	2.0	64.0	1.8	24.3	0.1
BAAQMD Significance Threshold	54	54	82	Implement BMPs	54	None	None

Source: PG&E 2011-2013, Data Request Responses; estimated using URBEMIS 2007, Ver 9.2.4. Note that implementation of APMs was assumed to reduce construction equipment, construction vehicle, and worker commute emissions by 15 percent.

Instead of specific significance thresholds for fugitive dust, the BAAQMD recommends BMPs for dust control. The BMPs in the BAAQMD CEQA Guidelines are incorporated into **APM AQ-1** (water active construction areas twice daily during dry conditions), **APM AQ-2** (cover trucks hauling dirt), **APM AQ-3** (pave, apply water or soil stabilizers), **APM AQ-4** (sweep access roads, staging areas, and parking areas), and **APM AQ-5** (sweep streets with water sweepers). **Mitigation Measure AQ-1** supplements these APMs by: limiting vehicle speeds to 15 mph on unpaved roads; requiring paving or covering of work areas; and requiring posting of information for a lead agency contact responsible for dust complaints. With the implementation of these APMs and **Mitigation Measure AQ-1**, the project would comply with all of the BAAQMD's recommended BMPs for fugitive dust.

Reducing equipment exhaust emissions would occur through the APMs as follows: **APM AQ-6** (encourage worker carpooling), **APM AQ-7** (use low emission equipment), **APM AQ-8** (minimize idling time), **APM AQ-9** (encourage use of natural gas vehicles), and **APM AQ-10** (minimize welding and cutting). **Mitigation Measure AQ-1** supplements these APMs by requiring proper maintenance and tuning of construction equipment.

With the implementation of the APMs for air quality and **Mitigation Measure AQ-1**, emissions from the proposed project would not exceed the BAAQMD's significance thresholds, and the project would comply with the dust control measures required by BAAQMD. Therefore, construction-related emissions would not substantially contribute to any air quality violations, and this impact would be less than significant.

### ***Mitigation Measures for Construction-Phase Air Quality***

In addition to APM AQ-1 through APM AQ-14:

- AQ-1**      **Implement measures to control dust and equipment exhaust during construction.** PG&E shall implement measures to control dust and vehicle exhaust during construction of the proposed substation. These measures shall incorporate Applicant Proposed Measures AQ-1 through AQ-12 and additionally shall include the following:
- ¾ Limit the speeds of construction vehicles on unpaved surfaces to 15 miles per hour.
  - ¾ Limit size of area subject to excavation, grading, or other construction disturbance at any one time to avoid excessive dust; paving shall occur as soon as possible after grading.

- ¾ Provide BAAQMD phone number in a visible location. Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. PG&E shall report to the CPUC within 1 week regarding complaints and corrective action taken.
- ¾ Construction equipment will be properly maintained. All offroad construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program will meet at a minimum the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1).

**Operations and Maintenance Impacts**

*DURING OPERATION, LESS THAN SIGNIFICANT.* There would be very limited emissions resulting from equipment used in operation and maintenance of proposed project. During operations, emissions would result from vehicles used for periodic visits for electrical switching and routine maintenance. PG&E personnel would visit the substation on a monthly basis or as needed under emergency conditions. There would be an estimated total of 250 vehicle miles per month (for light-duty plus heavy-duty trucks) for substation maintenance and repairs. Because the substation would not be staffed, there would be no vehicular emissions associated with regular commuting to and from the substation. Estimated operational emissions are shown in Table 5.3-6.

**Table 5.3-6. Windsor Substation Project – Emissions During Operations (lb/day)**

	NOx	ROG	PM10/PM2.5	CO	SO <sub>2</sub>
Light-Duty Truck (200 miles per month)	0.013	0.005	0.006	0.082	<0.001
Heavy-Duty Truck (50 miles per month)	0.005	0.003	0.002	0.042	<0.001
<b>Typical Operations, Total</b>	<b>0.018</b>	<b>0.008</b>	<b>0.008</b>	<b>0.124</b>	<b>&lt;0.001</b>
<b>BAAQMD Significance Threshold</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>None</b>	<b>None</b>

Source: PG&E 2010.

Note: Based on PG&E’s estimated total of 250 vehicle miles per month.

As shown in Table 5.3-6, the typical daily emissions during operation of the proposed project are well below the applicable significance thresholds. Therefore, the air quality impact from the operational phase of the project would be less than significant.

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

*During Construction, LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* As noted in Table 5.3-2 (Attainment Status for BAAQMD), the region is currently designed as “nonattainment” for ozone, PM10, and PM2.5.

Concurrent construction of other projects in close proximity to the proposed project would result in increased local air quality impacts for the duration of simultaneous construction activities. PG&E contacted the Town of Windsor to determine if approved or proposed projects would occur in the same timeframe and location as the project. There are approximately 12 potential projects in the vicinity of the substation and associated power line work areas. See Table 5.16-1 in Section 5.16 (Traffic and Transportation).

Simultaneous construction in close proximity to the proposed project work sites would also likely incorporate the BAAQMD recommendations for minimizing air quality impacts and would need to comply with BAAQMD rules regarding dust control. Table 5.3-5 shows that construction-related criteria air pollutants would not exceed the project-level thresholds, and according to BAAQMD guidelines, these emissions would not be at a cumulatively considerable level. Therefore, with the implementation of **APMs AQ-1 through AQ-12** and **Mitigation Measure AQ-1** (Implement measures to control dust and vehicle/equipment exhaust), the proposed project would not result in a cumulatively considerable net increase of any criteria pollutants for which the project region is in nonattainment.

*DURING OPERATION, LESS THAN SIGNIFICANT.* Table 5.3-6 shows that operational emissions would result from limited vehicle use related to periodic maintenance, repair, and inspection of the project components, and that the emission levels would be below the BAAQMD thresholds. This would not result in a cumulatively considerable net increase of any criteria pollutant.

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

*LESS THAN SIGNIFICANT.* Sensitive receptors include residential areas, schools, day care centers, hospitals, and convalescent homes. The proposed substation parcel boundary is approximately 60 feet south of the nearest residence; the substation fence line would be 125 feet from this home. Distribution line work sites would also be located near sensitive receptors. Excavation, grading, and construction activities could potentially expose sensitive receptors to construction-related emissions, including emissions of DPM and other toxic air contaminants, which would expose the receptors to increased health risk and hazards. The construction-related emissions would be short-term, ensuring that no single location would be exposed to increased pollutant concentrations for more than one year. Construction of the substation would last approximately eight months. Distribution line work would occur over six to seven months, but construction at any one work site would last a much shorter time.

Construction-phase emission rates in Table 5.3-5 include diesel particulate matter (DPM), shown as PM10 exhaust, PM2.5, and ROG, which includes other air toxics common to equipment exhaust. The quantified emissions from substation site construction were used in a screening air dispersion model to determine whether nearby sensitive receptors would experience substantial concentrations.

Toxic air contaminant (TAC) risk and hazards were assessed by PG&E using a dispersion model (SCREEN3) with the construction emissions configured as an area source (PG&E 2011-2013).<sup>8</sup> From that analysis, which provided hazard index calculations for one TAC, formaldehyde (PG&E 2011-2013), the maximum offsite ground level concentrations of the other TACs in the construction exhaust were derived. The results were reviewed and expanded upon to determine the risk and hazards associated with all TACs likely to occur with construction. For determining acute hazard, the peak daily construction reactive organic gas (ROG) emissions were separated into individual TAC emission rates using speciation factors for diesel exhaust provided by the BAAQMD with the PG&E assessment (PG&E 2011-2013). Determining the chronic hazard involved a similar analysis for annual average emissions. The assessment found that no significant cancer risk would be caused by DPM, and no significant acute or chronic hazard would be posed by formaldehyde or the combined effects of all TACs. The maximum annual average incremental

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<sup>8</sup> SCREEN3 is a single source Gaussian plume model which provides maximum ground-level concentrations for point, area, flare, and volume sources, as well as concentrations in the cavity zone, and concentrations due to inversion break-up and shoreline fumigation. It is a conservative screening model that is usually applied before the refined air quality model to determine if refined modeling is needed. ([http://www.epa.gov/scram001/dispersion\\_screening.htm](http://www.epa.gov/scram001/dispersion_screening.htm)).

PM2.5 concentration would be approximately  $0.2 \mu\text{g}/\text{m}^3$  during the year of substation construction. This level would not exceed the applicable BAAQMD threshold of  $0.3 \mu\text{g}/\text{m}^3$ ; therefore, impacts would be less than significant.

Implementation of **APMs AQ-1 through AQ-12** and **Mitigation Measure AQ-1** would further reduce the impact related to exposing sensitive receptors to toxic air contaminant pollutant concentrations during project construction. During project operations, emissions would result from limited use of vehicles for routine maintenance, repair, and inspection (see Table 5.3-6) that would not expose sensitive receptors to substantial concentrations of air pollutants.

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

*No IMPACT.* The proposed project includes short-term construction activity that would involve combustion of diesel fuel and emissions of dust. Odors of construction equipment diesel exhaust would be reduced by the use of either low-sulfur or ultra-low-sulfur fuel as required by law. No substances used or activities involved with the project would have the capability to produce offensive odors.

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## 5.4 Biological Resources

### BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.4.1 Setting

This section describes the biological resources in the proposed project area. It describes the existing biotic environment, including common plants and wildlife, sensitive habitats, special-status species and their locations in relation to the proposed project. Information used in preparing this section was derived from:

- ¾ Proponent’s Environmental Assessment for the Windsor Substation Project (PG&E 2010);
- ¾ Supplement to the Proponent’s Environmental Assessment for the Windsor Substation Project (PG&E 2011);
- ¾ Records of sensitive species locations from the California Natural Diversity Data Base for a five mile radius around project site (CNDDDB 2011);
- ¾ Records of sensitive species locations from the California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California for Healdsburg USGS quad and eight surrounding quads (CNPS 2011);
- ¾ List of federally listed species for the Healdsburg quadrangle and around Sonoma County from the United States Fish and Wildlife Service (USFWS 2011);
- ¾ Technical information available through the USFWS, California Department of Fish and Wildlife (CDFW), and Sonoma County; and

<sup>3/4</sup> Biological surveys conducted by TRC Solutions, Inc. (TRC) in 2011 and 2012. General biological reconnaissance surveys were conducted in February and April. Wetland surveys were conducted February, April, May, and June 2011. Rare plant surveys were conducted in April, May, and June of 2011 and 2012. Segments of the Fulton No. 1 60 kV Power Line located in landscaped backyards of private residences were not surveyed. Survey areas on inaccessible private property were observed from public rights-of-way where possible. Biological survey results were field-verified by Aspen Environmental Group on October 19, 2011. For the purposes of this analysis, the survey area (and study area) for biological resources includes (see Figure 5.4-1):<sup>9</sup>

- The entire substation parcel;
- 75-foot radius around the proposed TSP;
- 50-foot radius around existing wood poles along the Fulton No. 1 60 kV Power Line (plus the entire area to the railroad tracks at poles a23 through a28 and at pole a36);
- 50-foot radius around the existing wood poles along the 12 kV power line on Old Redwood Highway; and
- A 25-foot-wide corridor between the five northernmost poles on the Fulton No. 1 60 kV Power Line (for proposed access road); 10-foot-wide corridors between the rest of the wooden poles to be replaced on both the Fulton No. 1 60 kV Power Line and the 12 kV power line; a 40-foot-wide corridor between Joe Rodota Road and Windsor River Road (proposed underground conduit); a 100-foot-wide corridor between the substation parcel and the Fulton No. 1 60 kV Power Line; and 30-foot-wide corridor along the southern fenceline of the property west of the substation to Herb Road (for proposed access road).

### ***Existing Conditions***

The proposed project is located in the Santa Rosa Plain. The regional setting includes a mix of disturbed ruderal habitat, agricultural areas (i.e., vineyards), landscaped areas, commercial development and residential subdivisions.

**Substation Site.** The proposed substation site is relatively flat and is dominated by concrete foundations, asphalt, and gravel. The western and southern portions of the site contain ruderal/disturbed vegetation. There are mature trees along the northern, southern, and western property lines. There is a seasonal swale along parts of the southern and western boundaries, a small drainage ditch along the northern boundary, and a roadside ditch at the eastern edge of the property along Old Redwood Highway.

**Fulton No. 1 60 kV Power Line.** Habitat along the Fulton No. 1 60 kV Power Line is a mosaic of natural habitats such as annual grasslands, wetlands, and oak woodlands; rural, medium-, and high-density resi-

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<sup>9</sup> TRC used slightly different survey areas for general reconnaissance surveys, wetland surveys, and rare plant surveys. All of the surveys covered the substation parcel and the radii around the existing poles; however, the surveyed corridor areas varied. The reconnaissance surveys covered 10-foot corridors between poles along the Fulton No. 1 Power Line; a 10-foot corridor between Joe Rodota Road and Windsor River Road; and the 100-foot corridor between the substation site and the Fulton No. 1 60 Power Line. The wetlands surveys included a 25-foot corridor between the five poles west of the substation site; a 30-foot corridor along the southern boundary of the property west of the substation site; and 40-foot corridor for the area between Joe Rodota Road and Windsor River Road. Rare plant surveys covered the same survey areas for the substation site, vacant property west of the substation site, and the Fulton No. 1 60 kV Power Line. The rare plant surveys did not cover the 12 kV distribution line.

dential areas, livestock areas, public roadways and other developed/disturbed areas. The property directly west of the proposed substation (Alternative Site #6 in Section 4.18 of the Project Description) is where the TSP, three replacement poles, and an access road would be located. This area contains mostly annual grassland, along with some oak woodland as well as a seasonal swale and three vernal pools. Directly south of this vacant property is a parcel that is part of the proposed Kerry Conservation Site, which is a mitigation area in the Santa Rosa Plain Conservation Strategy (refer to Figure 5.4-1). CDFW intends for this parcel to serve as a special-status plant mitigation area. In January 2012, CDFW indicated that the title to 3.4 acres of this parcel will be transferred to CDFW (PG&E 2011-2013). In January 2013, CDFW indicated that the area would either serve as a mitigation bank or as site-specific mitigation and that the timing of transfer to CDFW would depend on which approach is used (CDFW 2013). The pending mitigation area parcel contains vernal pools and fairly dense oak woodland.

**Old Redwood Highway 12 kV Distribution Line.** The area along this distribution line between the substation site and Windsor River Road is largely residential, commercial, and industrial. The survey area along this alignment is adjacent to ruderal, grassland, and woodland habitats, as well as developed areas (including residences). The line spans and/or is adjacent to numerous roadside ditches, several drainage ditches and swales, and Starr Creek.

**Habitat Types**

Habitat types within the study area were classified according to Holland (1986), Sawyer and Keeler-Wolf (1995), or commonly accepted descriptions. Table 5.4-1 shows the acreage of terrestrial habitat types within the biological resources study area for the project. Wetland habitats and water features are shown in Table 5.4-2. Descriptions and acreage estimates are based on the Supplement to the PEA (PG&E 2011), rare plant surveys (TRC 2011), wetland delineation (TRC 2012), and Aspen Environmental Group’s site visit and analysis of the GIS data.

**Semi-riparian Scrub.** Semi-riparian scrub within the survey area is composed mainly of Himalayan blackberry (*Rubus discolor*) and can be found where storm-water runoff collects. Vegetation is usually at a younger successional stage than in a riparian forest due to current and ongoing disturbances or flooding. Semi-riparian scrub is found in the lower seasonal swale area in the western portion of the substation parcel, and along Old Redwood Highway near some of the drainages. Semi-riparian scrub habitat was not mapped separately from these water features, so it is not included in Table 5.4-1.

**Table 5.4-1. Terrestrial Habitat Types in Windsor Substation Study Area**

Habitat Type	Acres
Developed/Landscaped	7.5
Ruderal/Disturbed	20.1
Annual Grassland	2.2
Oak Woodland	0.6

Source: PG&E 2011, TRC 2011, and TRC 2012b.

**Annual Grassland.** The annual grassland vegetation community found within the survey area is characterized primarily by a mixture of non-native grasses and herbaceous species such as rigput brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild oats (*Avena fatua*), perennial ryegrass (*Lolium perenne*), Italian ryegrass (*Lolium multiflorum*), Italian thistle (*Carduus pycnocephalus*), English plantain (*Plantago lanceolata*), and common vetch (*Vicia sativa*).

**Oak Woodland.** Oak woodlands in the project area are composed of coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), black oak (*Quercus kelloggii*), and blue oak (*Quercus douglasii*). These range from dense stands to small clusters and isolated, savannah-like communities. Understory vegetation/

land uses include annual grassland habitat, wetland features, maintained landscapes, and disturbed/developed areas.

**Disturbed/Ruderal.** Disturbed vegetation can be found throughout the survey area. It is most prominent within the proposed substation site, livestock areas, rural residential areas, and mowed areas adjacent to roadways. The disturbed areas generally show evidence of previous development, vegetation management, or other periodic disturbances. The disturbed areas on the project site support various annual grassland species such as bromes and ryegrass and/or ruderal species such as English plantain, chicory (*Cichorium intybus*), fennel (*Foeniculum vulgare*), and bristly ox tongue (*Picris echioides*).

**Developed/Landscaped Areas.** Developed/landscaped areas are abundant throughout the project area within the medium- to high-density residential areas and their landscaped yards and paved roadways. These areas range from being completely devoid of vegetation to having a combination of barren land, paved surfaces, and maintained landscapes with planted ornamental species.

### Wetlands and Water Features

Wetlands and water features were classified based on topography, vegetation, soils, and hydrologic regimes. The wetland delineation conducted by TRC is based on the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2007).

In addition, TRC used the guidance provided by *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States* (USACE and USEPA 2007). The mapped features within the survey area include a perennial creek (Starr Creek), two seasonal swales, nine vernal pools, nine drainage ditches and drainage swales, and 13 roadside ditches. The numbers and acreages of these features are listed in Table 5.4-2. The features and feature labels are shown in Figure 5.4-1.

**Table 5.4-2. Wetlands and Water Features in Windsor Substation Project Area**

Type	Number of Features	Acres
Perennial Creek (PC, Starr Creek)	1	0.023
Seasonal Swale (SS1 and SS2)	2	0.117
Vernal Pools (VP1-VP9)	9	0.072
Drainage Ditches (DD1-DD7)	7	0.061
Drainage Swale (DS1 and DS2)	2	0.016
Roadside Ditches (RD1-RD13)	13	0.060

Source: PG&E 2011, TRC 2011, TRC 2012a, and TRC 2012b.

**Perennial Creek.** Perennial creeks convey water throughout all or most of the year and exhibit a clear ordinary high-water mark. They are usually bordered by wetland vegetation communities. Starr Creek flows between two poles of the Fulton No. 1 60 kV Power Line north of the intersection of Park Glen Drive and Railroad Avenue. It also passes through a culvert under the 12kV distribution line along Old Redwood Highway near Dawn Way. Within the survey area, the creek supports water plantain (*Alisma plantago-aquatica*), willow weed (*Polygonum lapathifolium*), arroyo willow (*Salix lasiolepis*) and green wattle (*Acacia decurrens*).

**Seasonal Swale.** Seasonal swales convey a unidirectional flow of water during and shortly after storm events. Seasonal swales occur in topographical folds and typically have a moderately well-defined bed and bank. Similar to depressional seasonal wetlands, the plant species found growing in seasonal swales are typically adapted to saturated soil conditions rather than prolonged periods of inundation. Dominant plant species within these features on the site include perennial ryegrass, curly dock (*Rumex crispus*), and pennyroyal (*Mentha pulegium*). Seasonal swales occur on the substation site (see SS1 in Figure 5.4-1) and also on the property west of the substation site (see SS2 in Figure 5.4-1). Both seasonal

swales appear to be hydrologically connected to Sotoyome Creek, which is 400 feet north of the substation site.

**Vernal Pools.** Vernal pools are depressional seasonal wetland features that have a subsurface restrictive layer such as a hardpan or claypan, which causes water to pond for extended periods throughout the winter and spring months. Vernal pools are biologically unique habitats and support diverse plant and wildlife populations. Most of the plant species that grow in these features are adapted to withstand long periods of inundation and are only found in vernal pools. Within the surveyed areas, vernal pool habitat is limited to the southern boundary of the property located west of the substation site (VP1-VP3 and VP7 in Figure 5.4-1), the Kerry Conservation Site (VP4, VP5, VP8, and VP9 in Figure 5.4-1), and grazing land just south of the proposed Kerry Conservation Site, where a vernal pool surrounds an existing pole of the Fulton No. 1 60 kV line along Wilcox Road (VP6 in Figure 5.4-1). Dominant plant species within these vernal pool features include mannagrass (*Glyceria occidentalis*), spikerush (*Eleocharis macrostachya*), popcornflower (*Plagiobothrys stipitatus*), and curly dock.

**Roadside Ditches.** The survey areas along Old Redwood Highway contain earthen roadside ditches that collect and convey storm water runoff from the adjacent roadway and surrounding impervious surfaces. There is also one roadside ditch surrounding a pole on the Fulton No. 1 60 kV Power Line along Morofsky Road. The roadside ditches in the survey area likely receive water from irrigation runoff and other artificial sources; however, they show no signs of supporting continuous water flow for at least three consecutive months. The ditches along Old Redwood Highway contain many culverts before connecting with Starr Creek or unnamed tributaries of Starr Creek. Roadside ditches in the survey area are regularly maintained and either devoid of vegetation or support species such as perennial ryegrass, Bermuda grass (*Cynodon dactylon*), and nutsedge (*Cyperus eragrostis*). Roadside ditches are shown as RD1 through RD13 in Figure 5.4-1.

**Drainage Ditches and Drainage Swales.** Similar to roadside ditches, the drainage ditches and swales within the project survey area collect and convey storm water runoff. Two drainage ditches within the survey area along the 12 kV distribution line appear to be tributary to Starr Creek and serve as major collector and conveyance features for surrounding roadside ditches and underground storm water collection systems. One of these ditches is located near Miller Lane (see DD2 in Figure 5.4-1) and the other is approximately 470 feet northwest along the power line from Bark Street (see DD3 in Figure 5.4-1). These ditches are roughly 8 to 10 feet wide and dominated by Himalayan blackberry. Based on the presence of perennial wetland vegetation such as cattails (*Typha spp.*) within these features outside the survey areas, it is likely that these watercourses support a continuous flow of water for at least three consecutive months. The other drainage ditches mapped within the survey areas are located on the proposed substation parcel (DD1); across from Bark Street along the 12kV power line (DD4); within the underground segment of the 12 kV distribution line near Joe Redota Way (DD5); at the southern end of the 12 kV power line near Windsor River Road (DD6); and along the Fulton No. 1 60 kV Power Line near Morofsky Road (DD7). The two drainage swales (DS1 and DS2) are located along Old Redwood Highway between McClelland Drive and Market Street, just north of Windsor River Road. During the field surveys, there was no evidence that features DD1, DD4–DD7, DS1, or DS2 support a continuous flow of water for at least three consecutive months.

### Jurisdictional Status

Wetlands and other water features may fall under the jurisdiction of the United States Army Corps of Engineers (USACE), CDFW, and/or the Regional Water Quality Control Board (RWQCB). More details regarding CDFW and RWQCB jurisdiction are provided in the Regulatory Setting section.



The final determination of the extent of USACE jurisdiction within the survey area for the proposed Windsor Substation Project would depend on the results of the field verification process and jurisdictional determination conducted by USACE. The preliminary class of the wetlands and water features in the survey area based on TRC’s wetland delineation and subsequent biological surveys are shown in Table 5.4-3. The Russian River is the nearest traditional navigable water. Starr Creek and the two relatively permanent drainage ditches (D2 and D3) appear to have relatively permanent water flow and, therefore, be potentially subject to USACE jurisdiction. Given that features SS1 and SS2 are less than 1.5 river miles from the Russian River (the traditional navigable water that receives flows from Sotoyome Creek) and the swales have the ability to filter pollutants that would otherwise enter the Russian River, both features appear to be potentially subject to USACE jurisdiction. Final determination of possible CDFW jurisdiction or RWQCD jurisdiction would also depend on consultation with those agencies.

The relatively flat topography surrounding the vernal pools in the study area suggests that these features do not collect water from a large enough area to fill and overtop their edges. During the field surveys, there was no sign of a surface water connection between the vernal pools and other nearby water features. Therefore, the vernal pools appear not to be USACE jurisdictional. The remaining features mapped within the survey areas (drainage ditches D1 and D4–D7; drainage swales DS1 and DS2; and all 13 roadside ditches) do not appear to support continuous flow of water for three consecutive months and appear to be restricted to upland areas. Therefore, these features also appear not to be USACE jurisdictional.

**Table 5.4-3. Classification of Wetlands and Water Features in the Windsor Substation Project Area**

Rapanos Class	Feature Location	Potentially USACE Jurisdictional Acreage	Non-USACE Jurisdictional Acreage
Non-navigable tributaries that are relatively permanent (perennial creek)	Starr Creek/PC	0.024	0
Non-navigable tributaries that are not relatively permanent (seasonal swales)	SS1, SS2	0.117	0
Isolated Wetlands (vernal pools)	VP1-VP9	0	0.072
Drainage Ditches – Relatively Permanent Waters	D2, D3	0.022	0
Drainage and Roadside Ditches/Swales – Non-Relatively Permanent Waters	D1, D4-D7, DS1, DS2, R1- R12	0	0.116
<b>Total</b>		<b>0.163</b>	<b>0.188</b>

Source: TRC 2012a and 2012b.

### ***Special-Status Plants and Animals***

Special-status species include those listed as threatened or endangered under the federal or California Endangered Species Acts, species proposed for listing, California Species of Special Concern, and other species that have been identified by the USFWS or CDFW or other agency as unique or rare. Based on database searches, a total of 72 special-status plant species and 40 special-status wildlife species were identified as having the potential to occur within the survey area. For 48 of the 72 plant species habitat in the survey area was not appropriate (because of habitat characteristics or elevation range). The remaining 24 species were analyzed for their potential to occur within the proposed project area. These species are described in Table 5.4-4 (Special-Status Plants with the Potential to Occur in the Survey Area). Twelve of the 40 wildlife species identified in database searches did not meet the habitat characteristics observed in the survey area. The remaining 28 species were analyzed for their potential to occur within the survey area. These species are described in Table 5.4-5 (Special-Status Wildlife with the

Potential to Occur in the Project Area). Proposed project work areas are not within designated critical habitat for any federally listed species.

Most of the special-status species in Tables 5.4-4 and 5.4-5 have low potential to occur within the proposed project area. However, eight plant and seven wildlife species have moderate potential to occur in the proposed project area, and six plant and two wildlife species have a high potential to occur. The likelihood of special-status species occurrence (low, moderate, high) in the analysis below is based on habitat requirements (such soils, hydrology, vegetation types, and disturbance factors) and known habitat range:

- ¾ **Low:** Habitat within the survey area and/or project vicinity satisfies very few of the species' requirements and/or the range of the species overlaps with the vicinity of the project, but not within the survey area itself. There are no nearby CNDDDB occurrences. The species' presence within the project corridor is unlikely.
- ¾ **Moderate:** Habitat within the survey area and/or project vicinity meets some of the species' requirements, and known locations for the species are found in the vicinity of the project corridor. Presence of the species within the survey area is moderately likely.
- ¾ **High:** Habitat within the survey area and/or project vicinity meets most or all of the species' requirements, and known locations for the species are found within 5 miles of the project corridor. Presence of the species within the survey area is highly likely.

**Table 5.4-4. Special-Status Plants with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Requirements	Blooming Period	Potential to Occur
Sonoma alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE, 1B.1	Occurs in moist soils in freshwater marshes and in riparian scrub in Sonoma and Marin Counties; 5-365 meters.	May-July	<b>Moderate.</b> Potential habitat present in riparian areas. Nearest occurrence is < 7 miles away.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	1B.2	Occurs in coastal bluff scrub, cismontane woodland, and valley and foothill grassland; 3-500 meters.	Mar-June	<b>Low.</b> Potential habitat present in grasslands, but no occurrences within 10 miles.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	1B.2	Occurs in chaparral, cismontane woodland, valley and foothill grassland, and sometimes serpentinite; 90-1,555 meters.	Mar-June	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Sonoma sunshine <i>Blechnosperma bakeri</i>	FE, SE, 1B.1	Occurs in wet areas in valley and foothill grassland, and vernal pools; 10-110 meters.	Mar-May	<b>High.</b> Potential habitat present in grasslands and wetlands. Present on Kerry Conservation Site (CDFW 2013).
Bristly sedge <i>Carex comosa</i>	2.1	Occurs in coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; 0-625 meters.	May-Sep	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	1B.2	Occurs in chaparral, coastal prairie, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic)/ often alkaline; 2-420 meters.	May-Nov	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.



**Table 5.4-4. Special-Status Plants with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Requirements	Blooming Period	Potential to Occur
Vine Hill clarkia <i>Clarkia imbricata</i>	1B.1	Occurs in chaparral, valley and foothill grassland/acidic sandy loam; 50-75 meters.	June-Aug	<b>Moderate.</b> Potential habitat present in grasslands. Nearest occurrence is < 7.50 miles away.
Baker's larkspur <i>Delphinium bakeri</i>	FE, SE, 1B.1	Occurs in broadleafed upland forest, coastal scrub, valley and foothill grassland/decomposed shale, often mesic; 80-305 meters.	Mar-May	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Dwarf downingia <i>Downingia pusilla</i>	2.2	Occurs in valley and foothill grassland and vernal pools; 1-445 meters.	Mar-May	<b>High.</b> Potential habitat present in grasslands. Nearest occurrence is < 0.50 mile away.
Fragrant fritillary <i>Fritillaria liliacea</i>	1B.2	Occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often on serpentine soils; 3-401 meters.	Feb-Apr	<b>Moderate.</b> Potential habitat present in grasslands. Nearest occurrence is < 4 miles away.
Woolly-headed gilia <i>Gilia capitata</i> ssp. <i>tomentosa</i>	1B.1	Occurs in coastal bluff scrub, valley and foothill grassland/rocky, outcrops; 10-185 meters.	May-July	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Pale yellow hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	1B.2	Occurs in valley and foothill grassland, sometimes along roadsides; 20-560 meters.	Apr-Nov	<b>High.</b> Potential habitat present in grasslands. Two occurrences within < 0.50 mile of the project.
Thin-lobed horkelia <i>Horkelia tenuiloba</i>	1B.2	Occurs in broadleafed upland forest, chaparral, valley and foothill grassland/mesic openings, sandy; 50-500 meters.	May-Jun	<b>Moderate.</b> Potential habitat in grasslands. Nearest occurrence is < 7 miles away.
Burke's goldfields <i>Lasthenia burkei</i>	FE, SE, 1B.1	Occurs in meadows and seeps, vernal pools; 15-600 meters.	Apr-Jun	<b>Present.</b> Detected during 2012 surveys adjacent to Wilcox Road. Present on Kerry Conservation Site (CDFW 2013).
Baker's goldfields <i>Lasthenia californica</i> ssp. <i>bakeri</i>	1B.2	Occurs in closed-cone coniferous forest openings, coastal scrub, meadows and seeps, and marshes and swamps; 60-520 meters.	Apr-Oct	<b>Low.</b> Potential habitat in or near ditches and wetlands but no occurrences within 10 miles.
Woolly-headed lessingia <i>Lessingia hololeuca</i>	3	Occurs in broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland on clay or serpentine soils; 15-305 meters.	Jun-Oct	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Pitkin Marsh lily <i>Lilium pardalinum</i> ssp. <i>pitkinense</i>	FE, SE, 1B.1	Occurs in cismontane woodland, meadows and seeps, marshes and swamp/mesic, sandy; 35-65 meters.	Jun-Jul	<b>Moderate.</b> Potential habitat present in or near ditches and wetlands. Nearest occurrence is < 4.50 miles away.

**Table 5.4-4. Special-Status Plants with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Requirements	Blooming Period	Potential to Occur
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	FE, SE, 1B.1	Occurs in meadows and seeps, valley and foothill grassland, vernal pools/vernally mesic; 15-305 meters.	Apr-May	<b>Moderate.</b> Potential habitat present in grasslands, in or near ditches and wetlands. Nearest occurrence is < 4 miles away.
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	3.2	Occurs in broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky; 45-825 meters.	Mar-May	<b>Low.</b> Potential habitat present in grasslands but no occurrences within 10 miles.
Marsh microseris <i>Microseris paludosa</i>	1B.2	Occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland; 5-300 meters.	Apr-Jun (uncommonly July)	<b>High.</b> Potential habitat in grasslands. Nearest occurrence is < 0.50 mile away.
Robust monardella <i>Monardella villosa</i> ssp. <i>globosa</i>	1B.2	Occurs in broadleaved upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, and valley and foothill grassland; 100-915 meters.	Jun-Jul (Aug)	<b>Moderate.</b> Potential habitat in grasslands. Nearest occurrence is < 4 miles away.
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	1B.1	Occurs in wet areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; 5-1,740 meters.	Apr-Jul	<b>Present.</b> Detected during 2012 surveys within the proposed Kerry Conservation Site.
Two-fork clover <i>Trifolium amoenum</i>	FE, 1B.1	Occurs in coastal bluff scrub, valley and foothill grassland, sometimes on serpentine; 5-415 meters.	Apr-Jun	<b>Moderate.</b> Potential habitat occurs in grasslands. Nearest occurrence is < 7.50 miles away.
Saline clover <i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	1B.2	Occurs in marshes and swamps, wet, alkaline areas in valley and foothill grassland, vernal pools; 0-300 meters.	Apr-Jun	<b>Low.</b> Marginal habitat present in the grasslands but no occurrences within 10 miles.

STATUS CODES:

FE	Federally Endangered	SE	State Endangered
FT	Federally Threatened	SCE	State Candidate Endangered
		SSC	California Species of Special Concern
		FP	Fully Protected

CNPS	California Rare Plant Rank
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3	Plants about which more information is needed
4	Plants of limited distribution
	Threat Rank
0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not very Threatened in California

**Table 5.4-5. Special-Status Animals with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Description	Potential to Occur within Project Area
<b>Invertebrates</b>			
California freshwater shrimp <i>Syncaris pacifica</i>	FE	Lives in streams of 12 to 36 inches in depth with exposed live roots of trees, such as alder and willow, along undercut banks greater than 6 inches with overhanging woody debris or stream vegetation and vines, such as stinging nettles, grasses, vine maple, and mint. Historically found in low elevation, perennial freshwater streams in Marin, Sonoma, and Napa counties. Now found in 16 stream segments within these counties, including tributary streams in the lower Russian River drainage.	<b>Low.</b> Marginal suitable habitat exists in Starr Creek. Drainage ditches do not support suitable habitat. No CNDDDB occurrences within 5 miles.
<b>Fish</b>			
Coho salmon-central CA coast <i>Oncorhynchus kisutch</i>	FE	Anadromous; migrates through and spawns in coastal rivers and streams from Santa Cruz to Mendocino County.	<b>Low.</b> Marginal suitable habitat may exist in Starr Creek, although no research found indicating populations there. Nearest CNDDDB occurrence is in the Russian River, approximately 1 mile away.
Central California coastal steelhead <i>Oncorhynchus mykiss</i>	FT	Anadromous; coastal rivers, streams, and creeks from Santa Cruz County north to Russian River basin.	<b>Low.</b> Marginal suitable habitat may exist in Starr Creek, although no research found indicating populations there. Nearest CNDDDB occurrence is approximately 3 miles away.
California coastal Chinook salmon <i>Oncorhynchus tshawytscha</i>	FT	Anadromous; coastal rivers and streams of northern California from Russian River to Redwood Creek.	<b>Low.</b> Marginal suitable habitat may exist in Starr Creek, although no research found indicating populations there. No CNDDDB occurrences within 5 miles.
<b>Amphibians/Reptiles</b>			
Northwestern pond turtle <i>Actinemys marmorata marmorata</i>	SSC	Found in freshwater ponds, marshes, rivers, streams, and irrigation ditches. Requires exposed rocks and logs for basking. Range is throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries.	<b>High.</b> Suitable aquatic habitat exists within drainages and Starr Creek. Nearest CNDDDB occurrence is approximately 1 mile away.

**Table 5.4-5. Special-Status Animals with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Description	Potential to Occur within Project Area
California tiger salamander, Sonoma County population <i>Ambystoma californiense</i>	FE, SE	Breeds in seasonal ponds and pools. Spends most of the year in rodent burrows or other subterranean refuges in grassland and oak savanna habitats. 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. Species breeds in vernal pools and other temporary rainwater ponds, including cattle ponds, following relatively warm rains in November to February and on submerged debris in shallow water. In the coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County (up to elevations of 1,067 meters), and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (610 meters). The Sonoma population appears to have been geographically isolated from the remainder of the California tiger salamander population by distance, mountains, and major waterway barriers for more than 700,000 years.	<b>Low.</b> Project area is located on the northern edge of the species' range in Sonoma County. Nearest occurrence is over 5 miles away.
California red-legged frog <i>Rana aurora draytonii</i>	FT, SSC	Occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Breeds January to July (peaks in February). Requires 11 to 20 weeks of permanent water for larval development. Females attach eggs to vegetation 2 to 6 inches below the surface. Requires access to aestivation habitat. Individuals have been found considerable distances from breeding sites on rainy nights. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties. Historically, occurred throughout Sonoma County; now only known in three creeks in Sonoma County (Upper Sonoma Creek, Petaluma Creek-Sonoma Creek).	<b>Low.</b> Occurrence in Sonoma County is unclear. Nearest CNDDDB occurrence is over 10 miles away.
Foothill yellow-legged frog <i>Rana boylei</i>	SSC	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. Highly aquatic; spends most or all of life in or near streams, though some have been documented underground and beneath surface objects more than 50 meters from water. In California, historically distributed throughout the foothill portions of most drainages from the Oregon border to the San Gabriel. Elevation range in California extends from near sea level to 1,940 meters.	<b>Low.</b> Could utilize Starr Creek for breeding. Nearest CNDDDB occurrence is approximately 5 miles away.
Western spadefoot toad <i>Spea hammondi</i>	SSC	Occurs primarily in grasslands, but occasional populations also occur in valley-foothill hardwood woodlands. Some populations persist for a few years in orchard or vineyard habitats. Grasslands with shallow temporary pools are optimal habitats. 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. Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains. Ranges throughout the Central Valley and adjacent foothills. In the Coast Ranges it is found from Point Conception, Santa Barbara County south to the Mexican border. Elevations of occurrence extend from near sea level to 1,363 meters in the southern Sierra foothills.	<b>Low.</b> Survey area out of range of the species.

**Table 5.4-5. Special-Status Animals with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Description	Potential to Occur within Project Area
<b>Birds</b>			
Cooper's hawk <i>Accipiter cooperii</i>	SSC	Hunts in broken woodland and habitat edges; catches prey in air, on ground, and in vegetation. Seldom found in areas without dense tree stands or patchy woodland habitat. Nests in crotches of deciduous trees and in the main crotch, horizontal branches of conifers. Usually nests in second-growth conifer stands, or in deciduous riparian areas, usually near streams.	<b>Moderate.</b> Suitable nesting habitat present in mature trees. Oak woodlands could be used for hunting.
Tri-colored blackbird <i>Agelaius tricolor</i>	SSC	Frequents fresh emergent wetlands. Nest may be located up to 4 miles from foraging 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, and tall herbs. Nest usually located a few feet over, or near, fresh water; also may be hidden on ground among low vegetation. Resident to California.	<b>Low.</b> Oak trees provide marginal habitat for roosting; no suitable nesting habitat in project area. May use drainage ditches for foraging.
Grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	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. Thick cover of grasses and forbs is essential for concealment.	<b>Low.</b> Marginally suitable habitat in the grassland for breeding and nesting.
Great blue heron <i>Ardea herodias</i>	G5, S4	Frequents the shoreline of oceans, marshes, lakes, and rivers, and also stalks upland fields for rodents, especially in winter. Found throughout most of North America, as far north as Alaska and the southern Canadian provinces. From the southern United States southwards, and on the Pacific coast, they are year-round residents. Usually nesting in trees or bushes.	<b>High.</b> Suitable habitat exists throughout the survey area near aquatic features and open grasslands. Nearest CNDDDB occurrence is approximately 4 miles away.
Short-eared owl <i>Asio flammeus</i>	SSC	Suitable habitats may include salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures. Tule marsh or tall grassland with cover 30 to 50 centimeters in height can support nesting pairs. Breeding is most regular in northeastern California and in Suisun Marsh; irregular on the southern coast. A fledged young was picked up injured at Annadel State Park, Sonoma County in 1995.	<b>Low.</b> No suitable nesting habitat present.
Long-eared owl <i>Asio otus</i>	SSC	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 Russian River near Windsor.	<b>Moderate.</b> Oak woodlands in the study area provide suitable nesting habitat; grasslands are suitable foraging habitat.
Burrowing owl <i>Athene cucularia</i>	SSC	Frequents open grasslands and shrublands with perches and burrows. Usually nests in old burrows of ground squirrels or other small mammals. May dig own burrow in soft soil. Pipes, culverts, and nest boxes may be used where burrows are scarce.	<b>Low.</b> Presumed extirpated as a breeding species in Sonoma county, but could utilize grassland for hunting and/or remnants of building foundations, and culverts for shelter; small rodent burrows are present in survey area.

**Table 5.4-5. Special-Status Animals with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Description	Potential to Occur within Project Area
Northern harrier <i>Circus cyaneus</i>	SSC	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.	<b>Moderate.</b> Suitable foraging habitat present in grassland.
Yellow warbler <i>Dendroica petechia brewsteri</i>	SSC	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. Currently occupy much of their former breeding range, except in the Central Valley.	<b>Low.</b> Marginal habitat exists in oak woodland; foraging habitat exists in annual grassland.
White tailed-kite <i>Elanus leucurus</i>	FP	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. Nests located near open foraging area.	<b>Moderate.</b> Could utilize oak woodland and hunt for prey in annual grassland.
California horned lark <i>Eremophila alpestris actia</i>	SSC	Utilizes a wide variety of open habitats where trees and shrubs are sparse, including grasslands with low grass height. Builds cup-shaped, grass-lined nests on the ground. Found in grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above tree line.	<b>Low.</b> Marginal habitat exists in grasslands in the project area for foraging, cover and nesting.
American peregrine falcon <i>Falco peregrinus</i>	DL, SE, FP	Known nesting sites occur along the Santa Barbara coast, Sierra Nevada, and in other mountains in northern California. In winter, found inland throughout the Central Valley, and occasionally on the Channel Islands. Breeds mostly in woodland, forest, and coastal habitats. Requires protected cliffs and ledges for cover. Usually breeds and feeds near water; may hunt over water.	<b>Low.</b> Less-than-marginal habitat exists for breeding and hunting.
Yellow-breasted chat <i>Icteria virens</i>	SSC	Nests in riparian habitats, usually on the borders of streams, creeks, sloughs, and rivers. Frequents dense, brushy thickets and tangles near water, and thick understory in riparian woodland. The nest is usually 2 to 8 feet above ground in dense shrubs along a stream or river. Known to breed in Sonoma County; confirmed nesting in Annadel State Park.	<b>Low.</b> Marginal nesting habitat occurs in riparian areas.
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Inhabits open woodlands, farmland, pastures, annual grasslands, and salt marsh with elevated perches. Utilizes tall shrubs or trees (also use fences and power lines) for hunting perches. Present year round throughout most of the state.	<b>Moderate.</b> Suitable nesting, perching, and foraging habitat exists on existing structures and trees.
Purple martin <i>Progne subis</i>	SSC	Utilizes tree cavities, bridges, utility poles, and lava tubes for nesting. Prey on aerial insects near large wetlands and other waterbodies, and at upper slopes and ridges. Occurs in forest and woodland areas at low to intermediate elevations throughout much of the state. Have been reported in Sonoma County.	<b>Moderate.</b> Suitable nesting and perching habitat exists on existing structures and trees..



**Table 5.4-5. Special-Status Animals with Potential to Occur in Project Survey Area**

Species Common Name <i>Scientific Name</i>	Listing Status <sup>1</sup>	General Habitat Description	Potential to Occur within Project Area
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	SSC	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. Night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but probably uses rock crevices.	<b>Low.</b> Marginal suitable roosting habitat present, may use grasslands for foraging. Nearest CNDDDB occurrence is 5 miles away.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC	Prefers mesic habitats. Gleans from brush or trees or feeds along habitat edges. Requires caves, mines, tunnels, buildings, or other manmade structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Individuals may move within the hibernaculum to find suitable temperatures.	<b>Low.</b> Marginal suitable roosting habitat present.
Western red bat <i>Lasiurus blossevillii</i>	SSC	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 0.6 to 13 meters above ground level. Females and young may roost in higher sites than males.	<b>Moderate.</b> Suitable roosting habitat present and could use grasslands for foraging.
American badger <i>Taxidea taxus</i>	SSC	Occurs in 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.	<b>Low.</b> No large burrows were observed in survey area; annual grassland and substation site are likely too small to support badger.

STATUS CODES:

**U.S. Fish and Wildlife Service**

- FE Endangered
- FT Threatened
- DL De-listed

**California Department of Fish and Game**

- FP California Fully Protected species: May not be taken or possessed without a permit from the California Fish and Game Commission
- SSC California Special Species of Concern: Vulnerable to extinction in California due to declining population levels, limited range, or other threats
- SCE State candidate listing for Endangered
- ST State-listed as Threatened
- SE State-listed as Endangered

**Regulatory Setting**

**Federal Endangered Species Act.** The Federal Endangered Species Act (FESA) prohibits “take” of federally listed Threatened or Endangered wildlife species. The FESA defines “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct” [16 U.S.C. §1532(19)]. The FESA requires that actions authorized, funded or carried out by federal agencies do not jeopardize the continued existence of a federally listed species or adversely modify designated Critical Habitat for such species. If a federal agency determines that a proposed federal action (*i.e.*, issuance of a CWA Section 404 permit for wetland fill) “may affect” a listed species and/or designated Critical Habitat,



the agency must consult with the USFWS and/or National Oceanic and Atmospheric Administration (NOAA) Fisheries for protected marine and anadromous fish species in accordance with Section 7 of the FESA. If take of a federally listed species may occur, the applicant may be required to obtain Incidental Take authorization from the USFWS. The Incidental Take authorization allows “incidental” taking of federally listed species if the take is “incidental to and not the purpose of, the carrying out of an otherwise lawful activity” [16 U.S.C. §1539(a)(1)(b)]. Incidental Take authorization is issued by USFWS only if the applicant, to the maximum extent possible, has minimized and mitigated for the impacts of the taking, provided adequate funding for the mitigation plan, and if the taking would not appreciably reduce the likelihood of the survival and recovery of the species in the wild [16 U.S.C. §1539(a)(2)(b)].

**Santa Rosa Plain Conservation Strategy.** The USFWS Santa Rosa Plain Conservation Strategy (SRPCS) is a conservation program put in place to mitigate adverse effects on listed species from development on the Santa Rosa Plain. The program is intended to contribute to the recovery of the Sonoma County distinct population segment of California tiger salamander (CTS), Burke’s goldfield, Sonoma sunshine, Sebastopol meadowfoam, and the many-flowered navarretia (listed plants), and to the conservation of their sensitive habitat. The SRPCS identifies eight conservation areas for CTS and listed plants, one CTS and listed plant preserve system, and one listed plant conservation area. The substation site, the Fulton No. 1 60 kV Power Line, and the existing 12 kV distribution line are all located within the study area boundary of the SRPCS. The maps in the SRPCS (dated 2005) show that the presence of CTS is unlikely at the substation site and along the Fulton No. 1 60 kV Power Line and 12 kV distribution line because these areas are out of the range of CTS, but listed plants may be present and may require mitigation. Burke’s goldfield was detected in the survey area in 2012. There is a pending mitigation bank and preserve, the Kerry Conservation Site, located between the proposed substation site and the vacant property to the west.

**Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects That May Affect California Tiger Salamander and Three Plant Species on the Santa Rosa Plain, California.** The Santa Rosa Plains Conservation Strategy is the biological framework on which the *Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects That May Affect California Tiger Salamander and Three Plant Species on the Santa Rosa Plain, CA* (PBO for USACE) is based. The PBO is issued to the USACE for permits, enforcement actions, or mitigation banks that are under their jurisdiction. Projects appended to this PBO must meet the permit qualifications and, thus have “relatively small effects” on the species, in order to obtain take authorizations. The PBO does not cover the many-flowered navarretia (one of the four species in the SRCPS) because of the limited distribution of the species. Also, projects that will impact occupied sites supporting Burke’s goldfields and Sonoma sunshine, where surveys have documented 2,000 plants or greater in any year in the past 10 years, may not be appended to the PBO for USACE, but will be evaluated on a case by case basis. The PBO provides the framework for mitigation, conservation, translocation, and appropriate minimization measures. USFWS and CDFW will track project impacts, mitigation and other pertinent information. If the PBO for ACE is not applicable, then a separate biological opinion from USFWS may be required for work at the proposed substation site. If the proposed project cannot meet the permit qualifications and may affect the California tiger salamander and/or three plant species on the Santa Rosa Plain, then a consultation with the USFWS may be required for work at the proposed substation site.

**Federal 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 (e.g. rehabilitation,

education, migratory game bird propagation, and salvage), take of depredating birds, 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. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

**Federal Clean Water Act.** The purpose of the Federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA regulates activities that result in the discharge of dredged or fill material into waters of the United States, including wetlands. The primary intent of the CWA is to authorize the U.S. Environmental Protection Agency (EPA) to regulate water quality through the restriction of pollution discharges, which includes sediments. The U.S. Army Corps of Engineers (USACE) has the principal authority to regulate discharges of dredged or fill material into waters of the United States. However, EPA has oversight authority over the United States Army Corps of Engineers and retains veto power over the USACE’s decision to issue permits.

In 2007 and 2008 the USACE and USEPA developed new guidance regarding the jurisdiction of waters of the United States under the Clean Water Act in response to the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (referred to collectively as “Rapanos”). Under current agency guidance (USACE and USEPA, *Rapanos* 2008), the agencies will typically assert jurisdiction over: (1) traditional navigable waters; (2) wetlands adjacent to traditional navigable waters; (3) non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (typically three months); and (4) wetlands that directly abut such tributaries.

USACE decides jurisdiction over the following waters based on a site-specific analysis that determines whether waters have a significant nexus (connection) with a traditional navigable water: (1) non-navigable tributaries that are not relatively permanent; (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (3) wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary. The agencies generally will not assert jurisdiction over the following features: (1) swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and (2) ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. The agencies will apply the significant nexus standard as follows: (1) A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and (2) Significant nexus includes consideration of hydrologic and ecologic factors.

Waters of the United States include: (1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide; (2) all interstate waters including interstate wetlands; (3) all other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) tributaries of the above; and (5) territorial seas. Federally jurisdictional wetlands are defined as those areas that are inundated or saturated by surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetlands generally include swamps, bogs, vernal pools, seeps, marshes, and similar areas. See Jurisdictional Status section under Wetlands and Water Features (above) for more information.

The California Regional Water Quality Board (RWQCB) has authority over “waters of the State” under the Porter-Cologne Water Quality Control Act. Furthermore, RWQCB typically, in practice, asserts jurisdiction similar to CDFW in creek or river systems, from top of bank to top of bank. The RWQCB also asserts authority over all wetlands, including isolated wetlands.

Any discharge of dredged or fill material into waters of the United States must be approved by the USACE pursuant to Section 404 of the CWA as either a discretionary Individual Permit or as part of a Nationwide Permit (NWP). Pre-defined Nationwide Permits are already in place, non-discretionary, and generally less time-consuming than a discretionary Individual Permit. NWPs may be grouped together or “stacked” with certain limitations. A standard Individual Permit is required if there are:

¾ Discharges that will result in the fill of any tidal waters or wetlands; or

¾ Impacts to more than one-half acre of non-tidal waters or wetlands, and/or impacts to greater than 300 linear feet of non-tidal waters or wetlands, including creeks (either perennial or ephemeral and generally intermittent as well), arroyos or vegetated and unvegetated tributaries.

**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 Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2081 of the California Fish and Game Code allows CDFW 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 California Fish and Game Code requires state lead agencies to consult with the CDFW 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.

**California Fully Protected Species.** The State of California first began to designate species as fully protected prior to the creation of 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 CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFW prohibits any State agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

**CDFW Streambed Alteration Agreement.** Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the Project applicant enter into a Streambed Alteration Agreement with the CDFW pursuant to California Fish and Game Code section 1600 et seq. CDFW potentially extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFG 1994a).

**California Native Plant Protection Act.** Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (California Fish and Game 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 California Environmental Quality Act (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 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.

**Town of Windsor General Plan.** The *Town of Windsor General Plan* lists and describes many policies to protect and conserve oak woodlands, riparian communities, open water, grasslands, seasonal wetlands, and vernal pools. Policy D.1 is designed to “protect unique and sensitive biotic features such as rare and endangered plants, dense oak woodlands, and vernal pools, and encourage sensitive design in these areas.” Policy D.1.6 focuses on tree preservation and states that the Town of Windsor should encourage the preservation of oak woodlands and significant stands of oaks and heritage trees, and encourages replacement of trees should removal be necessary. Policy D.1.1 states that “if sensitive resources are identified on the project site, proposals to protect them shall conform with applicable state and federal regulations regarding their protection and may include avoidance of the resource, installing vegetative buffers, providing setbacks, clustering development onto less sensitive areas, preparing restoration plans, and offsite mitigation.”

**Town of Windsor Tree Preservation and Protection Ordinance.** Chapter 27.36 of the Town of Windsor’s Zoning Ordinance, the Tree Preservation and Protection Ordinance (the Ordinance), regulates protection, preservation, maintenance, and removal of protected trees. The intent of the Ordinance is to avoid a reduction in tree canopy cover by requiring replacement trees for all protected trees that are approved for removal. Protected trees under the Ordinance include: Trees with a diameter at breast height (dbh) of six inches or more of the species black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii*), oracle oak (*Quercus morehus*), Oregon oak (*Quercus garryana*), valley oak (*Quercus lobata*), chase oak (*Quercus x chaseii*); and trees with a dbh of 12 inches or more of the species California buckeye (*Aesculus californica*) and California bay (*Umbellularia californica*); heritage or landmark trees as identified by Council resolution; significant groves or stands of trees; mature trees located on a parcel of one acre or more; and any tree required, to be planted or preserved, as environmental mitigation for a discretionary permit. Section 27.36.061, Tree Mitigation, is an amendment to the Ordinance. The amendment will “generally replace a smaller quantity of larger trees by replanting a larger quantity of smaller trees, with the goal of restoring the original canopy area and volume after ten years.” The amendment also states that to obtain a tree removal permit, an arborist report is required for all development projects with protected trees. The arborist will make recommendations on the removal as well as on the mitigation to offset the loss of the tree(s).

## 5.4.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs (see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

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

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The proposed project site, which comprises the 4.11-acre substation property and existing distribution line alignments, contains suitable habitat for some special-status plants and animals. Special-status species potentially affected by proposed project are discussed below.

### ***Special-Status Plants***

There are 14 special-status plants with moderate/high potential to occur in the survey area (refer to Table 5.4-4). Three of the special-status plant species with moderate or high potential to occur in the project area — Burke's goldfields, Sebastopol meadowfoam, and Sonoma sunshine — are included in the *Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects That May Affect California Tiger Salamander and Three Plant Species on the Santa Rosa Plain, CA* (PBO for USACE). There is potential habitat for these species to occur in seasonal wetlands/vernal pools and nearby grassland in the project area.

Burke's goldfields (Federally Endangered/State Endangered) were found in a vernal pool adjacent to Wilcox Road during protocol-level rare plant surveys in 2012. Between 100 and 150 individuals were identified in this area. In addition, Baker's navarretia (CNPS 1B.1) were found in two vernal pools in the proposed Kerry Conservation Site; one vernal pool contained 800 to 1,000 individuals and the other contained 1,500 to 2,000. In addition, according to CDFW both Sonoma sunshine and Burke's goldfields have been found on the Kerry Conservation Site (CDFW 2013) ~~in the past~~. The Kerry Conservation Site is slated to eventually become a mitigation bank and preserve for these species because it is presumed to be occupied habitat. In addition, according to the PBO for USACE, if a site had listed plants in the past, it is considered occupied. Therefore, even if protocol-level surveys find no Sonoma sunshine for two consecutive years, vernal pools onsite would be treated as suitable habitat for this species by USFWS according to the PBO for USACE because a persistent seed bed may be present even if plants are not detected (USFWS 2007).

There are nine vernal pools within the biological survey area for the proposed project: four are south of the substation site near the Kerry Conservation Site property, at the southern boundary of the property west of the substation site; four are on the Kerry Conservation Site property; and one surrounds an existing pole of the Fulton No. 1 60 kV line along Wilcox Road (See Figure 5.4-1). The four vernal pools along the southern fenceline of the property west of the proposed substation site are within a potential route for a proposed temporary access road. As shown on Figure 5.4-1, all or part of the two vernal pools (VP4 and VP5) in the proposed Kerry Conservation Site are within 50 feet of pole a8.



PG&E intends to avoid any direct impacts (e.g., excavations and fills) and indirect impacts (e.g., alternation of drainage patterns) to wetland features, including the vernal pools containing listed plants. However, if special-status plants, including species covered by the PBO for USACE, are present within the proposed project disturbance areas they could be directly impacted by removal of vegetation or by trampling or crushing during construction activities. Indirect impacts to special-status plants could include alterations in existing topography and hydrology, sedimentation and erosion, soil compaction, the accumulation of fugitive dust (which could impact plant photosynthesis and respiration), disruptions to native seed banks from ground disturbance, and colonization by non-native, invasive plant species. Ongoing operational impacts could include trampling or crushing of special-status plants by vehicular or foot traffic and the introduction of non-native, invasive plants due to increased human presence.

PG&E has committed to several APMs that would reduce potential impacts to special-status plants. These APMs include **APM BIO-1** (special status species/sensitive habitat education program), **APM BIO-2** (minimize soil and vegetation disturbance), **APM BIO-3** (color brochure for construction crews), **APM BIO-4** (pre-construction wildlife and plant surveys), **APM BIO-5** (biological monitor during grading and silt fence installation), **APM BIO-7** (avoid impacts to special-status plants), **APM BIO-8** (restrictions on equipment near aquatic habitat), **APM BIO-13** (minimize noxious weeds), **APM AQ-1** through **APM AQ-5** (reduce fugitive dust through watering sites, cover trucks, sweeping), and **APMs WQ-1 to WQ-6** (develop and implement Stormwater Pollution Prevention Plan, Best Management Practices, Spill Prevention and Control Plan, and obtain water quality permits), **APM WQ-8** (proper handling of vehicle maintenance wastes), and **APM WQ-7** (avoid wetlands, swales and drainages or perform work outside of wet season if feasible). The full text of all APMs is in Section 4.15 in the Project Description.

While these APMs would reduce potential impacts to special-status plants, they do not include sufficient detail, timelines, and performance standards to ensure that impacts would be reduced to a less-than-significant level. Mitigation Measure B-1 supplements APM BIO-4 and APM BIO-5 and specifies that environmental training would also address California Species of Special Concern. In addition, **Mitigation Measure B-2** (Preserve special-status plants, wetlands, and vernal pools) requires avoidance of occupied special-status plant habitat and compensation for impacts to suitable or occupied habitat where impacts cannot be avoided. This measure specifies that project activities adjacent to vernal pools would only take place between June 15 and September 30 and that the exposed hole from the removal of pole a10 (Figure 5.4-1) would be filled with clay material that supports vernal pool reestablishment. New poles would be installed as far outside vernal pools as possible. With the implementation of this measure, impacts to special-status plants would be less than significant.

### ***Mitigation Measure for Special-Status Plant Species***

**B-1**            **Conduct environmental training, pre-construction surveys, and biological resources monitoring.** As described in APM BIO-1, ongoing special-status species/sensitive habitat education program for construction crews will be conducted by a qualified biologist (approved by CPUC) prior to the commencement of the project and during construction activities. Sessions will include discussion of the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA), the consequences of noncompliance with these acts, identification and values of habitats, and the importance of keeping all project activities and sediments within the designated work area. These requirements are supplemented by the following: training shall also address California Species of Special Concern and brochures addressing all potentially affected special-status species shall be provided to all crew members (in multiple languages if appropriate).

As described in APM BIO-4, pre-construction surveys for special-status species shall be conducted prior to the start of construction. These requirements are supplemented by the following: pre-construction surveys shall be conducted by a qualified biologist (approved by CPUC) within 7 days of construction activities. If special-status species are found, CDFW, USFWS, and the CPUC shall be notified within 24 hours and consulted, as appropriate, to confirm appropriate avoidance measures. Project construction (in area where a special-status species is found) shall not begin until the qualified biologist determines that the required or appropriate avoidance, minimization, and mitigation measures have been implemented.

As described in APM BIO-5, a biological monitor shall be present during grading activities and installation of the silt fence around the proposed substation site perimeter and needed areas along the distribution line alignment. The monitor will complete daily reports summarizing construction activities and environmental compliance. These requirements are supplemented by the following: monitoring shall be conducted by a qualified biologist (approved by CPUC). Daily biological monitoring shall be required during all construction activities near sensitive resources, including special-status species, wetlands, vernal pools, and oak woodlands. If appropriate (based on the phase and location of construction activities), PG&E may request that the CPUC allow less frequent monitoring.

**B-2 Preserve special-status plants, wetlands and vernal pools.** Special-status plants identified in the survey area were all located within vernal pools. The following avoidance and minimization measures will be used to protect both listed special-status plants and to avoid impacts to wetlands and vernal pools:

- <sup>3</sup>/<sub>4</sub> Design project and construction activities to avoid impacts to wetlands and water features to the extent feasible.
- <sup>3</sup>/<sub>4</sub> Prior to the onset of construction activities, a qualified biologist (approved by the CPUC) shall delineate any wetland or water features within the right of way as environmentally sensitive areas using clear markers. Construction crews shall be provided with maps of environmentally sensitive areas.
- <sup>3</sup>/<sub>4</sub> PG&E shall employ best management practices to avoid wetland impacts. These BMPs may include using padding or vehicles with balloon tires or other protective measures if temporary access roads or other construction activities occur in wetland areas.
- <sup>3</sup>/<sub>4</sub> There are three pole replacement locations that are located near vernal pool habitat (*see Biological Resources Figure, map set – poles a7, a8 and a10*). The following additional avoidance measures will be used in these particular locations and in any additional areas where work is required in or adjacent to a vernal pool:
  - Any project activities at these locations shall only take place between June 15 and September 30, after a qualified biologist (approved by CPUC) determines that vernal pools are dry and special-status plant species have completed their entire lifecycle for the year (i.e., seeds have set).
  - A qualified biologist (approved by the CPUC) shall be present during construction activities within the vicinity of these three locations. The biologist shall ensure that fencing remains intact and that construction activities do not affect the delineated vernal pool areas.



- In the event that it is infeasible to completely avoid a vernal pool, and any associated listed plant species, PG&E will use the following additional avoidance measures: (1) No construction equipment will enter the vernal pool; and (2) Tarps will be placed over the vernal pool to ensure that no excavated soil mixes with the vernal pool vegetation and soils when the pole is removed.
- The following additional avoidance measures will be used at one pole replacement (see *Biological Resources Figure, map set – pole a10*), which is located adjacent to a vernal pool: (1) The exposed hole from the removed pole will be filled with a clay material that supports vernal pool re-establishment; and (2) The new pole will be installed as far outside of the vernal pool as feasible.

**Compensatory mitigation for special-status plants.** If impacts to listed plants cannot be avoided, PG&E shall work with CDFW and USFWS to ensure that the impact is fully mitigated with compensation measures that are consistent with the Santa Rosa Plain Conservation Strategy, as applicable; these measures may include: habitat acquisition and long-term habitat enhancement, purchase of mitigation credits at mitigation banks approved by CDFW and USFWS to mitigate for the plant species impacted. Any necessary mitigation strategy will include adequate funding to ensure long-term management and monitoring.

**Compensatory mitigation for vernal pools.** If impacts to wetlands and vernal pools cannot be completely avoided, PG&E will consult with the appropriate agencies to ensure that there is no net loss of wetlands or vernal pools. In consultation with the appropriate resource agencies, PG&E may take the following actions to ensure the no net loss of wetlands or vernal pools, including (1) purchase of mitigation credits in an agency-approved wetlands mitigation bank with a service area that includes the project site, or (2) creation of wetlands according to an agency-approved plan. Any created wetlands shall emulate wetlands affected by the project. Any wetland preserve established on or offsite shall be permanently protected through fee title transfer to a qualified agency or conservation organization, through recordation of a conservation easement deed over the protected property, or some similar deed restriction. Prior to any ground disturbance, a wetland creation and preservation plan shall be approved by the applicable resource agencies.

### ***Special-Status Wildlife***

There are nine special-status wildlife species with moderate/high potential to occur in the project area (see Table 5.4-5 for more detail); none of these nine species are state or federally-listed. However, white-tailed kite, which is California fully protected, has moderate potential to forage and nest in the study area. Direct mortality of some wildlife could occur during construction as a result of increased vehicular and foot traffic, use of heavy construction equipment, grading and excavation for the proposed substation, pulling of new circuits, trenching and/or boring for the underground distribution line, and other project activities. Potential impacts to special-status wildlife are discussed in more detail below.

**Invertebrates.** There is low potential for California freshwater shrimp in the study area; however, there is suitable habitat for the species in Starr Creek. The Fulton No. 1 60 kV Power Line crosses Starr Creek and one of its tributaries. The 12 kV power line along Old Redwood Highway also crosses Starr Creek. Potential impacts to this species include habitat degradation or asphyxiation from water quality impacts

related to erosion or contamination during construction activities. With the implementation of APMs related to reducing sedimentation and other impacts to aquatic habitat (**APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8**), potential impacts to freshwater shrimp would be adverse, but less than significant, and no mitigation is required.

**Fish.** There is low potential for three special-status fish species (Coho salmon, central California steelhead, and central coastal Chinook salmon) in the study area. Suitable habitat for these species occurs in Starr Creek. However, research conducted during the preparation of this study found no evidence of special-status fish populations in Starr Creek. Potential impacts to fish include habitat degradation or asphyxiation from water quality impacts related to erosion or contamination during construction activities. With the implementation of APMs related to reducing sedimentation and other impacts to aquatic habitat (**APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8**) potential impacts to special-status fish would be adverse, but less than significant, and no mitigation is required.

**Amphibians/Reptiles.** There is low potential for California tiger salamander, California red-legged frog, and western spadefoot toad to occur in the project area based on species range and closest known occurrences. Because no impacts to these species are anticipated, no specific APMs or mitigation measures have been proposed for these species. Foothill yellow-legged frog may use Starr Creek for breeding. Potential impacts to this species include habitat degradation or asphyxiation from water quality impacts related to erosion or contamination during construction activities. With the implementation of APMs for reducing sedimentation and other possible impacts to aquatic habitat (**APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8**) impacts to foothill yellow-legged frog would be adverse, but less than significant, and no mitigation is required.

Northwestern pond turtle has high potential to occur in the project area. There is suitable habitat for the species within drainages and in Starr Creek. Potential impacts to this species include habitat degradation or asphyxiation from water quality impacts related to erosion or contamination during construction activities. **APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8** would reduce potential indirect impacts to this species. Northwestern pond turtles could also be directly impacted by disturbance of occupied grasslands, being crushed by construction equipment and vehicles, or destruction of nests during ground-disturbing activities. **Mitigation Measure B-3** (Identify and relocate northwestern pond turtles) requires preconstruction surveys for northwestern pond turtles and relocation of individuals found in work areas. This mitigation measure is necessary because none of the APMs specifically address this species. With the implementation of **Mitigation Measure B-3**, impacts to northwestern pond turtles would be less than significant.

**Birds.** Cooper's hawk, short-eared owl, long-eared owl, northern harrier, white-tailed kite, loggerhead shrike, and purple martin have moderate potential to use foraging habitat in the project area. Great blue heron has high potential to occur. Burrowing owls have low potential to forage in the survey area (CDFW 2013). A small amount of ruderal/disturbed foraging habitat for these species within the 2.6 acre substation footprint would be permanently lost. In addition, a small amount of annual grassland and oak woodland foraging habitat would be temporarily disturbed. Foraging birds would be expected to leave the immediate vicinity of the project during construction activities. These species would likely use unaffected habitat nearby. Given the small amount of habitat lost relative to the availability of habitat near the project, impacts to foraging special-status birds would be adverse but less than significant and no mitigation is required.

Raptors and other large aerial perching birds, including those afforded state and/or federal protection, are susceptible to electrocution by distribution lines. Electrocutions occur when a bird simultaneously contacts two conductors of different phases or a conductor and the ground. This may happen if 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 substation are grounded, birds may also be electrocuted by reaching energized conductors from grounded equipment. The electrocution of State and/or federally protected bird species would constitute a significant impact. PG&E would design the distribution poles/lines to be avian-safe by installing anti-perch devices (**APM BIO-9**) and ensuring at least 60 inches of separation between energized phases and grounded components (PG&E 2010; pg. 6-36), per the construction design recommendations provided in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC 2006). With the implementation of these measures, impacts related to electrocution of special-status birds would be adverse, but less than significant and no mitigation is required. Because of the existing residential setting and areas of existing trees near distribution lines, raptors are unlikely to collide with power lines. Therefore, impacts related to special-status birds colliding with power lines would also be less than significant.

The Migratory Bird Treaty Act prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Further, raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and State regulations. Construction disturbance during the breeding season (February 1 through August 31) could adversely affect breeding birds through direct take or indirectly through disruption or harassment. Nesting habitat is present in the project area for Cooper's hawk, long-eared owl, loggerhead shrike, white-tailed kite, and purple martin. In addition, other migratory birds, including raptors, may nest in the trees on and around project work areas. Noise and activity associated with the proposed substation construction and trenching and boring could disturb avian species. Construction activity could cause nest abandonment if nests are present; this would be a potentially significant impact.

PG&E would avoid tree removal and tree trimming when feasible. PG&E (2011) estimates that they would need to remove three trees within the substation site and that two or three trees along the distribution lines may need to be trimmed. The potential for impacts to breeding birds from tree removal, tree trimming, and general construction activity, would be minimized by implementation of **Mitigation Measure B-4** (Protect nesting birds). This measure requires pre-construction surveys, monitoring during construction, and the establishment of a buffer around active nests. Implementation of Mitigation Measure B-4 would reduce impacts to nesting birds to a less than significant level.

**Mammals.** Pallid bat and Townsend's big-eared bat are not expected to occur in the study area. Western red bat is moderately likely to occur. Potential impacts to breeding and roosting bats would be similar to the disturbance impacts described above for special-status birds. Impacts on special-status bats would be minimized by the implementation of **Mitigation Measure B-5**. This measure requires pre-construction surveys, biological monitoring, and the establishment of buffer zones for roosting bats. With the implementation of this measure, impacts to special status bats would be less than significant. In addition, **APM BIO-13** requires flagging and feasible avoidance of American badger dens, and **APM BIO-14** requires consultation with CDFW if an American badger den cannot be avoided in order to discuss possible relocation. Since there is low potential for American badger to occur in the project area, these APMs are adequate to minimize impacts, and no additional mitigation is required.

### ***Mitigation Measure for Special-Status Animal Species***

**B-3 Identify and relocate northwestern pond turtles.** If northwestern pond turtles are found near any proposed construction areas, impacts to individuals and their habitat shall be avoided to the extent feasible. To avoid impacts to occupied habitat, an exclusion zone

shall be established around the habitat and temporary plastic fencing shall be installed around the buffer area with "Sensitive Habitat Area" signs posted and clearly visible on the outside of the fence. If avoidance is not possible and the species is determined to be present in work areas, the biologist (approved by the CPUC) shall capture turtles prior to construction activities and relocate them to nearby, suitable habitat (the closest water body) out of harm's way (e.g., upstream or downstream from the work area). PG&E shall consult with CDFW regarding any required relocation of western pond turtles.

If deemed necessary by the on-site biological monitor, exclusion fencing shall be installed to prevent turtles from re-entering the work area. For the duration of work in these areas the biologist should conduct regular follow-up visits (at least once per week) to monitor effectiveness and take appropriate corrective action if protection measures are not adequate.

**Milestones and Monitoring.** Preconstruction surveys shall be conducted by qualified biologist (approved by CPUC) before ground disturbance. Any exclusion fencing that is installed to prevent western pond turtles from entering the work areas will be inspected by the on-site biological monitor to maintain the integrity of the fence. Monitoring of habitat and exclusion fencing shall be conducted by a qualified biological monitor during construction activities as necessary.

#### B-4

**Protect nesting birds.** If construction activities occur during the avian nesting season (February 1 through September 15), a preconstruction survey for nesting birds (including raptors) shall be conducted by a qualified wildlife biologist (approved by the CPUC) 7 days or less before the start of vegetation removal or trimming and ground-disturbing construction activities, and prior to the start or re-start of construction in any new work area. If there is no work in an area for 7 days, it will be considered a new work area if construction or vegetation trimming or removal begins again. At least 10 days before construction activities begin during nesting season, PG&E shall confer with CPUC and CDFW on nesting bird survey methodology. Survey will be submitted to CPUC for record keeping.

No additional measures will be implemented if active nests are more than the following distances from the nearest work site: (a) 500 feet for raptors, or (b) 250 feet for passerine birds. Buffers shall not apply to construction-related traffic using existing roads that is not limited to project-specific use (i.e., county roads, highways, farm roads, etc.).

All references in this mitigation measure to wildlife biologists refer to qualified biologists approved by the CPUC; these biologists may be PG&E employees or subcontractors. References to independent avian biologists refer to qualified avian biologists approved by the CPUC who report directly to CPUC.

**Buffer reduction.** The specified buffer sizes for birds may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity) and as determined by a qualified wildlife biologist that implementation of a specified smaller buffer distance will still avoid project-related "take" (as defined by Fish and Game Code Section 86). Requests to reduce standard buffers must be submitted to the independent avian biologist(s) to be reviewed in coordination with the California Department of Fish and Wildlife (CDFW). Requests to reduce buffers must include: the species, location, size and expected duration of proposed buffer reduction,

reason for the buffer reduction, the name and contact information of the qualified wildlife biologist(s) who request the buffer reduction and will conduct subsequent monitoring. The independent avian biologist shall respond to PG&E's request for a buffer reduction within 24 hours.

Non-special status species found building nests within the standard buffer zone *after specific project activities begin*, shall be assumed tolerant of that specific project activity and such nests will be protected by the maximum buffer practicable (as determined by the qualified biologist). However, these nests shall be monitored on a daily basis by a qualified biologist until the qualified biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the buffer zone (whichever occurs first). If the qualified biologist determines that the nesting bird(s) are not tolerant of project activity, the standard buffer shall be implemented. As appropriate, exclusion techniques may be used for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment.

If nesting birds show signs of distress within a reduced buffer zone and that stress appears to be related to construction activities, the qualified wildlife biologist shall reinstate the recommended buffers. The recommended buffers may only be reduced again following the same process as identified above after the qualified biologist has determined that the nesting birds are no longer exhibiting signs of stress. Reporting regarding reduction of buffers will be documented in the monthly report.

***Listed and Fully Protected Species.*** If the qualified wildlife biologist determines that there are nests of listed or fully protected bird species within 500 feet of project activities, consultation with CPUC and CDFW (and USFWS as appropriate) shall be required to discuss how to implement the project and avoid "take." If avoidance of state or federally listed species is not feasible, the applicant shall work with CDFW and and/or USFWS (as appropriate) to determine the necessary avoidance measures and possibly to obtain take authorization, as appropriate and necessary.

***Monitoring and reporting.*** All nests with a reduced buffer shall be monitored on a daily basis by a qualified wildlife biologist until the biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the reduced buffer (whichever occurs first). A monthly written report shall be submitted to CDFW and CPUC. Monthly reports shall include: all of the information included in buffer reduction requests in addition to duration of buffer reduction, and outcomes for nests, eggs, young and adults during construction within a reduced buffer. No reporting will be required if construction activities do not occur within a reduced buffer during any calendar month. A final report shall be submitted to CDFW and CPUC at the end of each nesting season summarizing all monitoring results and outcomes for the duration of project construction.

- B-5 Protect special-status bats.** Before the spring breeding season and prior to construction, a qualified biologist (approved by the CPUC) shall conduct a survey for roosting bat habitat. The survey shall include work areas adjacent to appropriate roosting habitat and are accessible from public or project areas within 200 feet of a work area. For trees considered to have a high or moderate probability for bat roosting, acoustic monitoring shall be conducted before any construction activities begin during the breeding season



to determine if there are any roosting sites present. Surveys shall be conducted at the appropriate times to maximize detectability. At least ten days before surveys begin, PG&E shall confer with CPUC and CDFW on bat survey methodology. Survey will be submitted to CPUC for record keeping.

Note: All references in this mitigation measure to biologists or biological monitors refer to qualified biologists approved by the CPUC; these biologists may be PG&E employees or contractors. References to independent biologists refer to qualified biologists approved by the CPUC who report directly to the CPUC.

If an active roost or maternity roost is found within 100 feet of a work area, the limits of the work area will be clearly marked and a qualified biological monitor shall remain on-site during construction activities within the vicinity of the roost or maternity roost. The biologist shall ensure that construction activities do not encroach upon the 100 foot buffer around an active roost or maternity colony site. Buffers shall remain in place until the qualified biologist has determined that bats have vacated the occupied roost sites.

Trees containing maternity roosts shall not be removed during the breeding season (March 1 through August 31) to avoid disturbing females with young that cannot fly. No trees containing maternity roosts may be removed until the qualified biologist determines that breeding is complete and young are able to fly.

Requests to reduce buffers or exclude bats shall be submitted to CPUC for review by the CPUC's independent biologist in consultation with CDFW. The CPUC's independent biologist shall respond to requests to reduce buffers within 24 hours and shall respond to requests to exclude bats within 5 days. Exclusion plans may include the following:

- ¾ If fall/winter hibernacula cannot be avoided, humane techniques may be implemented to passively vacate bats from roosts. Methods to passively evict bats from tree roosts may include incrementally trimming limbs to alter the air flow and temperature around the roost feature where slight changes to the surrounding environment of roost features encourage bats to vacate roost features on their own.
- ¾ If acoustic monitoring detects that bats are using trees that need to be cut down, exclusionary one-way doors shall be installed in late August, after completion of the maternity season. Roost trees shall be removed after it has been confirmed that roosting bats have departed.
- ¾ If a roost is lost, PG&E shall consult with the CDFW to see if additional compensation for loss of habitat is required. Required compensation may include bat boxes be installed in the vicinity of the cut tree.

If an exclusion plan is approved by the independent biologist (in consultation with CDFW), PG&E shall submit a report to CPUC and CDFW after exclusion activities are completed describing the exclusion process and bat behavior after the implementation of the exclusion plan. All exclusion activities shall be closely monitored by the qualified biologist.

If buffer reductions are requested and approved, a monthly report shall be submitted to CPUC and CDFW with all of the information in the buffer reduction requests, monitoring results, and effects on bats. Reports shall be submitted for the duration of construction activities within buffer areas.

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

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The primary sensitive natural communities in the study area are associated with wetlands and water features, which may be CDFW jurisdictional under California Fish and Game Code Section 1600 et seq. Oak woodlands are also considered a sensitive natural community according to the Town of Windsor's Tree Preservation and Protection Ordinance and are addressed in Section 5.4.2(e). Wetlands and water features within the survey area are listed in Table 5.4-2 (Wetlands and Water Features in the Windsor Substation Project Area) and Table 5.4-3 (Classification of Wetlands and Water Features in the Windsor Substation Project Area) and shown on Figure 5.4-1. These features include perennial Starr Creek, two seasonal swales, nine vernal pools, seven drainage ditches, two drainage swales, and 13 roadside ditches. There is also a small amount of semi-riparian scrub habitat on and near the proposed substation site associated with seasonal swale and drainages. One existing pole from the Fulton No. 1 60 kV Power Line near Wilcox Road is surrounded by a vernal pool (VP6).

Temporary impacts to wetlands, including vernal pools, other waters, and riparian habitat would result if water quality were impaired as a result of construction discharges or contamination or erosion. Direct, permanent impacts to wetlands, waters, and riparian habitat would occur if replacement poles are located within vernal pools or seasonal swales, if the temporary access road requires filling of vernal pools, or if the substation footprint affects the seasonal swale on the substation site. Potential impacts to vernal pools are discussed in more detail in Section 5.4.2(a) under special-status plants. Potential impacts to jurisdictional waters are discussed in more detail in Section 5.4.2(c).

As described in Section 5.9, Hydrology and Water Quality, water quality impacts would be avoided or minimized with implementation of **APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8**, and best management practices. These measures prohibit vehicular and equipment maintenance within 100 feet of water and wetlands, avoid and minimize potential spillage, and establish erosion controls, including a Stormwater Pollution Prevention Plan (SWPPP).

Both direct and indirect impacts to vernal pools would be minimized by **Mitigation Measure B-2** (Preserve special-status plants, wetlands, and vernal pools) as described above in the discussion of listed plants. This measure requires clear marking of all wetlands and water features as environmentally sensitive areas and the use of BMPs to avoid wetland impacts. ~~If complete avoidance of vernal pools is not feasible, a~~Any permanent impacts to wetlands/vernal pools would be mitigated through purchase of mitigation credits or creation of wetlands based on an agency-approved plan. With implementation of APMs and **Mitigation Measure B-2**, impacts to sensitive natural communities (i.e., wetlands and other waters) would be less than significant.

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

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The wetlands and water features within the survey area include perennial creeks, tributaries to Starr Creek, seasonal swales, vernal pools, and drainage and roadside ditches. Starr Creek and the two relatively permanent drainage ditches (DD2 and DD3) appear to be potentially subject to USACE jurisdiction. Seasonal swales SS1 and SS2 have a hydrological connection to Sotoyome Creek and also appear to be potentially subject to USACE jurisdiction. There are six vernal pools within the biological survey area, none of which appear to be USACE-jurisdictional.



These wetlands and water features could be temporarily or permanently affected by construction of the proposed project. Potential indirect impacts to wetlands and waters of the U.S. would be the same as described for State-jurisdictional wetlands and waters under Section 5.4.2(b). Accordingly, implementation of **APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8** and best management practices would reduce most potential impacts. However, **Mitigation Measure B-2** is required to reduce impacts to wetlands and waters of the U.S. to a less than significant level.

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

*LESS THAN SIGNIFICANT.* The study area does not include any established wildlife corridor or wildlife nursery sites. The proposed substation site and associated distribution lines provide marginal upland wildlife habitat near seasonal wetlands and Starr Creek. As noted in Section 5.4.2(a), there is low potential for special-status fish in Starr Creek. Potential impacts to these species would be less than significant with the implementation of **APMs WQ 1-8** and **APMs BIO-1, 2, 5 and 8** related to reducing sedimentation and other impacts to aquatic habitat. Flows in Starr Creek would not be blocked by construction or operation of the proposed project.

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

*LESS THAN SIGNIFICANT.* The Town of Windsor's Tree Preservation and Protection Ordinance (Ordinance), regulates protection, preservation, maintenance, and removal of protected trees. Trees that occur within the survey area that are protected under the Ordinance include oaks with a diameter at breast height (dbh) of six inches or more. Construction of the proposed project would require removal of at least three trees. which may be covered by the Ordinance. Because the CPUC has exclusive jurisdiction as described in Section 5.10 (Land Use and Planning), the proposed project is not subject to the Town's tree ordinance. However, PG&E has agreed to replace trees in a manner that is consistent with the Town's tree ordinance.

According to the Ordinance Amendment (section 27.36.061), mitigation for impacts to protected trees should "generally replace a smaller quantity of larger trees by replanting a larger quantity of smaller trees, with the goal of restoring the original canopy area and volume after ten years." In addition, the Ordinance Amendment requires preparation of an arborist report for all development projects with protected trees. The arborist report would provide recommendations on the removal of trees and mitigation to offset loss of protected trees. PG&E has committed to comply with the Ordinance. **APM BIO-15** commits PG&E to marking valley oaks and oak woodlands as environmentally sensitive and avoiding these areas to the extent practical. If any protected oak trees are removed, they would be replaced during landscaping in a manner consistent with the Town of Windsor's Ordinance for Tree Mitigation.

The proposed project would be consistent with the Town of Windsor's Tree Preservation and Protection Ordinance. With implementation of **APM BIO-15**, impacts to protected trees would be potentially adverse, but less than significant, and no mitigation is required.

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

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The Santa Rosa Plain Conservation Strategy (SRPCS) is a long-term conservation strategy intended to mitigate adverse impacts to California tiger salamander and four listed plant species from development on the Santa Rosa Plain (USFWS 2005). The SRPCS identifies several conservation areas and preserves. Figure 5.4-1 shows the location of the proposed Kerry Conservation Site. CDFW intends to eventually have this parcel serve as a special-status plant mitigation bank and preserve (CDFG 2007). In January 2012, CDFW indicated that the title to 3.4 acres of this parcel will be transferred to CDFW (PG&E 2011-2013). As of May 2012, the Kerry Conservation Site is on hold as a result of funding constraints (PG&E 2011-2013). The pending mitigation bank parcel contains oak woodland and at least four vernal pools. The proposed project would require the replacement of two poles from the Fulton No. 1 60 kV Power Line that occur within the conservation site. See Section 5.4.2(a) for details regarding potential impacts to SRPCS plant species from the proposed project.

Numerous APMs would reduce potential impacts to listed plant habitat on the Kerry Conservation Site. These include **APM BIO-1** (special status species/sensitive habitat education program), **APM BIO-2** (minimize soil and vegetation disturbance), **APM BIO-3** (color brochure for construction crews), **APM BIO-4** (pre-construction wildlife and plant surveys), **APM BIO-5** (biological monitor during grading and silt fence installation), **APM BIO-7** (avoid impacts to special-status plants), **APM BIO-9** (restrictions on equipment near aquatic habitat), **APM BIO-19** (minimize noxious weeds), **APM AQ-1 through APM AQ-5** (reduce fugitive dust through watering sites, cover trucks, sweeping; full text in Section 4.15 in the Project Description), and **APM WQ-1 through APM WQ-6** (develop and implement Stormwater Pollution Prevention Plan, Best Management Practices, Spill Prevention and Control Plan, and obtain water quality permits), **APM WQ-8** (proper handling of vehicle maintenance wastes), and **APM WQ-7** (wetland avoidance.). The full text of all APMs is in Section 4.15 in the Project Description. **Mitigation Measure B-1** (protect special-status plants) and **Mitigation Measure B-4** (preserve wetlands) would further minimize and mitigate potential impacts. With implementation of these measures, proposed project conflicts with the SRPCS would be less than significant.

## 5.5 Cultural Resources

### CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.5.1 Setting

#### *Approach to Analysis of Cultural Resources and Previous Cultural Resources Studies*

This analysis is based on a search of prehistoric and historical resources records from the Northwest Information Center of the California Historical Resources Information System (NWIC). The results of the records searches conducted in October 2010 (NWIC File No.10-0320) and in February 2011 (NWIC File No.10-0760) indicate that 17 studies have been conducted along the distribution lines associated with the proposed project. In February 2010, Garcia and Associates (GANDA) conducted an additional records search of a 25-foot radius along the approximate 1.50-mile corridor of the Fulton No. 1 60 kV Power Line and the existing overhead distribution line along Old Redwood Highway associated with the proposed substation site. Site reconnaissance surveys were also conducted by GANDA in 2011 and 2012 (Siskin and Cox 2012a, 2012b).

On August 31, 2011, GANDA initiated consultation with the Native American Heritage Commission (NAHC) 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 who might have information regarding resources within the project area. In a letter dated September 7, 2011, the NAHC responded and reported that no known Native American resources are present in the project area or within the 0.25-mile radius of the area. On September 7, 2011, GANDA initiated consultation with the Native American representatives. Follow-up calls were conducted on September 21, 2011. Native American consultation yielded no specific information regarding prehistoric or ethnographic use of the project area (Siskin and Cox 2012a, 2012b).

#### *Paleoenvironment*

The geology in the vicinity of the proposed project consists largely of Holocene and Pleistocene age sedimentary and volcanic rocks (see Section 5.6, Geology and Soils, for detailed description). The substation site is located on Quaternary sedimentary units which include alluvium, Glen Ellen, Huichica, and Sonoma Volcanics formations. The alluvial sediments are unlikely to contain any significant fossil resources. The sedimentary rocks of the Glenn Ellen and Huichica formations have not been identified as important paleontological formations. Sonoma Volcanics are typically deep below the surface, so construction activities would be unlikely to encounter this formation.

The UC Museum of Paleontology (UCMP) databases of known paleontological sites in Sonoma County were reviewed by the applicant to identify the occurrence of fossils in these formations and to determine the likelihood that paleontological resources might be encountered during excavation and grading of the proposed substation site. The UCMP records search indicated that there are 503 fossil locations within Sonoma County, with two specimens collected from locations two to five miles west of the project. Most previously identified fossils within Sonoma County were found in the Wilson Grove and Petaluma formations. These formations are unlikely to be encountered during project construction. None of the previously identified fossil locations are on or in the vicinity of the project site (PG&E 2010).

### ***Prehistory***

The project area contains soils belonging to the Huichica and Haire Series (see Section 5.6, Geology and Soils, for further detail). In Sonoma County, the alluvial parent material to these soil series is estimated to be early to late Pleistocene in age. The age and well-developed soil profiles suggest that the soils in the project area were deposited well before documented human occupation of the region. As such, the project area has a low potential for buried sites (PG&E 2010).

The project area is within the North Coast Ranges, which have been the focus of relatively few archaeological studies. Nevertheless, a general chronological framework has been established and divided into three broad time periods: Paleoindian, the three-stage Archaic period, and the Emergent period (Hildebrandt 2007, Milliken et al 2007, PG&E 2010).

The Paleoindian period began more than 11,000 years ago and ended approximately 8,000 years ago (ca. 10,000–6000 B.C.). Sites are known to have been established near lakes, but overall there have been very few California sites firmly dated to the Paleoindian period.

The Lower Archaic (6000–3000 B.C.) in northern California is represented by sites located in upland settings. It appears that people used a general hunting and gathering economy, with an emphasis on the collection of seeds. During the Middle Archaic period (3000–1000 B.C.), climatic conditions changed significantly, becoming warmer and drier. This period is characterized by more localized foraging and longer term settlements. These settlements are well represented on the Santa Rosa Plain. By the Upper Archaic period (1000 B.C.–A.D. 500), the climate had become cooler and wetter. More sedentary Berkeley pattern groups, originating in the Clear Lake area, became established in the Santa Rosa area. Berkeley pattern groups had a high dietary reliance on acorns and also subsisted on large game and fish.

During the Lower Emergent Period (A.D. 500–1500) socioeconomic strategies diversified in this period in the North Bay; while artifacts at some sites suggest sedentary systems like those initiated in the Upper Archaic, others represent increased mobility. A diversification of local bead forms and technological innovations are present in sites in the Santa Rosa Plain during this time. The onset of the Upper Emergent Period (A.D. 1500–) coincides with the arrival of the Spanish explorers in the New World (ca. A.D. 1500). The activities of Native people during this period are thought to be similar to those observed by the early non-native chroniclers.

### ***Ethnography***

The proposed project lies within the area inhabited by the Southern Pomo. Southern Pomo tribelets include *Kataictemi*, north of Santa Rosa, *Bitakomtara*, who occupied the area from Santa Rosa to Cotati, and *Konhomtara* near Sebastopol. Southern Pomo groups maintained a relatively dense population with complex social structures. Domestic buildings were built of brush and grass or tule while public structures were larger, semi-subterranean, and more substantial. The ethnohistoric settlement of *Tsolika'wi*, which roughly translates to “at redwing (blackbird) field” was reportedly located in East Windsor, although

its location remains undetermined. The Pomo typically lived in large villages with ancillary smaller villages for most of the year and dispersed into seasonal camps to exploit variable resources. The Pomo survived the diseases introduced during contact with the Euroamericans. Although now generally integrated into American culture, the Pomo still survive in the area, as is evident in the local Pomo rancherías (Bean and Theodoratus 1978).

### *Regional History*

**Spanish and Russian Periods.** The indigenous patterns of Pomo peoples were irrevocably changed with the arrival of Euroamericans in California. Following the founding of Mission Dolores and the Presidio in San Francisco, the Spanish began raiding the Southern Pomo territory for potential converts. By the 1820s at least 600 Pomo had been baptized at missions San Rafael and Sonoma. The Russian outpost of Fort Ross was established by the Russian-American Company just two years later along the coast as a regional base for its fur-trading venture. For nearly three decades, the Russian-American Company employed an ethnically diverse workforce, including local Pomo people, until the decline in sea otters, and their pelts, made the colony unprofitable and the operation was abandoned.

**Mexican Period.** After Mexico achieved its independence from Spain in 1821, it began an aggressive colonizing effort in northern California to assert its territorial claims against Russia. In 1823, Mission San Francisco Solano was established in the town of Sonoma, the 21st and last of the Spanish/Mexican missions built in California. Sonoma soon became the focus of settlement for the Mexican colonists as their attempts to settle in near the present-day towns of Fulton, Petaluma, and Santa Rosa met failure due to resistance by local Native American groups. This resistance ultimately collapsed when diseases introduced by the Euroamerican colonists devastated Native populations. Beginning in 1833, the landholdings of the missions were broken up and distributed to individuals. Most of these ranchos were focused on the trade of hides and tallow to foreign traders. Many Native Americans, including Southern Pomos, were employed by these operations. The project is situated just east of the northeast boundary of two land grants, Sotoyome and Molinos. No known features, dwellings, roads, corrals, or other structures associated with the ranchos are within or adjacent to the project area.

**American Period.** The Mexican-American War was fought between 1846 and 1848, and ended with the ceding of California to the United States. In 1849, gold was discovered in the Sierra Nevada foothills, and the California population soared due to immigration from local, national, and international sources. When California became a state in 1850, Sonoma was one of the original 27 counties. At that time, its population was concentrated in only a few settlements. As the gold rush subsided, former residents returned to Sonoma County, while many newcomers “squatted” on the extensive tracts of land, focusing on commercial agriculture, with wheat and potatoes as the preferred crops.

The area surrounding what is now the Town of Windsor was settled by these early farmers after 1851. The town itself was formally established in 1855. The region’s economy was primarily based on agriculture throughout most of its history, with wine grapes, hops, and prunes as the dominant crops during the twentieth century. Transportation into the region was also enhanced by the construction of the 14-mile-long Old Redwood Highway between Healdsburg and Santa Rosa in 1915 and later by Highway 101, which was constructed between Santa Rosa and Windsor in 1962. By the 1980s, commercial and residential development was present along major highways in the region.

### *Current Status*

No prehistoric cultural resources have been previously recorded or were identified during the fieldwork within or adjacent to the project area. The following historic-era resources have been identified.

- <sup>3</sup>/<sub>4</sub> There is one previously identified historic-era cultural resource within the project area: a section of the Northwest Pacific Railroad (NWPRR) [Resource Number: CA-SON-2322H (P-49-002834)] and associated features. The NWPRR is approximately 25 feet east of the Fulton No. 1 60 kV Power Line at the intersection of Windsor Road and Windsor River Road. This NWPRR railroad segment (17.6 miles long) was evaluated in 2004 and determined to be ineligible for inclusion in the California Register of Historic Resources (CRHR) (Hart 2004). The archaeological survey in June 2012 identified additional features associated with this resource: culvert 110 and a metal box. These features have also been recommended as ineligible for listing in the NRHP and CRHR.
- <sup>3</sup>/<sub>4</sub> The project area also includes a section of the Fulton No. 1 60 kV Power Line, which was installed in 1949 and rebuilt in 2009. Within the project area to the east of the substation site is an overhead distribution line that runs parallel to the historic-era Old Redwood Highway. Although the line was originally installed in 1938, the poles appear to be modern.
- <sup>3</sup>/<sub>4</sub> The archaeological survey conducted in February 2011 resulted in the identification of one historic-era cultural resource, Old Redwood Highway (1.5 miles between Herb Road and Windsor River Road), which had not been previously recorded or evaluated. Old Redwood Highway is within the project area, as the distribution line that runs along the highway would be upgraded. There is evidence of Old Redwood Highway documented on U.S. Geological Survey topographic maps since 1877. Since then the road has been continuously used and frequently upgraded. PG&E would avoid impacts to this historic alignment of Old Redwood Highway.
- <sup>3</sup>/<sub>4</sub> The archaeological survey in February 2011 also identified four historic structures in the study area: a shed west of NWPRR; a commercial complex at 9600 Old Redwood Highway; a commercial complex at 10603 Old Redwood Highway; and a garage building at 10071 Old Redwood Highway. PG&E would avoid any potential impacts to these structures.
- <sup>3</sup>/<sub>4</sub> The archaeological survey in June 2012 identified newly recorded features associated with a non-extant residence at 10501 Herb Road, including a fence line, an electric pole, concrete debris and a path. These features were not formally evaluated.

**California Public Resources Code.** According to CEQA Guidelines Section 15064.5(a)(3), generally a resource shall be considered “historically significant” if the resource meets the criteria for listing on the CRHR (Public Resources Code Section 5024.1, California Code of Regulations (CCR) Section 4852). When a project will impact an archeological site, it needs to be determined whether the site is a historical resource, which is defined as any site which: (a) is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and (b) meets any of the following criteria:

- <sup>3</sup>/<sub>4</sub> Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- <sup>3</sup>/<sub>4</sub> Is associated with the lives of persons important in our past;
- <sup>3</sup>/<sub>4</sub> 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
- <sup>3</sup>/<sub>4</sub> Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, a resource included in a local register of historical resources, as defined by Public Resources Code Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g), shall be presumed to be historically or culturally significant. CEQA also requires lead agencies to consider whether projects will impact “unique archaeo-



logical resources.” Public Resources Code Section 21083.2 (g), states that “unique archaeological resource” means an archaeological 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 meets any of the following criteria:

- ¾ Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- ¾ Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- ¾ Is directly associated with a scientifically recognized important prehistoric or historic event or person.

## 5.5.2 Environmental Impacts and Mitigation Measures

### *Applicant Proposed Measures*

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. APMs CU-1 through CU-3 relate to cultural resources. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs (see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

#### *a. Would the project cause a substantial adverse change in the significance of an historical resource as defined in §15064.5 [§15064.5 generally defines historical resource under CEQA]?*

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED* The section of the NWPRR (P-49-002834) and associated features, one section of the Fulton No. 1 60 kV Power Line, Old Redwood Highway, and several other structures in the survey are historic-era cultural resources. However, the railroad, power line, and highway have been consistently used and upgraded and contain modern components in addition to or instead of historical components. The NWPRR segment was determined to be ineligible for inclusion in the CRHR in 2004 (Hart 2004). The other features/structures have not been formally evaluated, but appear not to meet the definition of a “historical resource” in CEQA Guidelines §15064.5. The construction of the proposed project would not require removal, relocation, or other temporary or permanent damage to any of these resources. **APM CU-1** requires training construction personnel regarding appropriate procedures for unanticipated discoveries of cultural resources. In addition, **Mitigation Measure C-1** requires marking the limits of the project area with visible flagging tape, excluding the known cultural resources. With the implementation of these measures, the impacts of the proposed project on historic resources (including those that have not been formally evaluated for inclusion in the NRHP and CRHR) would be less than significant.

- C-1**            **Mark limits of project area near known cultural resources.** In areas near identified cultural resources, a qualified cultural resources specialist (approved by the CPUC) shall mark the limits of the project area with visible flagging tape. The construction crews shall be instructed that no vehicle access, travel, equipment staging, storage, or other construction-related work shall occur outside the flagged areas to ensure that known historic resources are not inadvertently damaged during implementation of the project.

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

*LESS THAN SIGNIFICANT.* No archaeological resources have been recorded within the project boundaries. There is no evidence of prehistoric archaeological resources in the immediate vicinity of the substation site or distribution lines. There is low regional archaeological sensitivity for buried prehistoric sites based on analysis of soil profiles (PG&E 2010). It is possible that previously unknown intact archaeological resources could be inadvertently discovered during ground-disturbing activities associated with project construction. The implementation of **APM CU-1** (Train construction personnel to recognize possible buried cultural resources) and **APM CU-2** (Halt work and notify archaeologist if possible cultural resources are discovered) would minimize the risk of damaging archaeological resources; therefore, this impact would be less than significant.

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

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Construction of the proposed substation and associated distribution line work is not likely to have significant impacts on paleontological or geologic resources as no such resources are known in the project vicinity. Given the lack of known paleontological resources and the limited disturbance associated with the project, the probability of encountering rare fossils is low. Implementation of **Mitigation Measure Pal-1** would further reduce potential impacts of construction. With the implementation of Mitigation Measure Pal-1, this impact would be less than significant.

**Pal-1**      **Avoid previously unidentified paleontological resources.** If paleontological remains are discovered during construction, construction will cease or be directed away from the discovery, and the potential resource will be evaluated by a qualified paleontologist. The paleontologist will recommend appropriate measures to avoid, record, preserve, or recover the resource/s.

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

*LESS THAN SIGNIFICANT.* It is unlikely, but possible, that unmarked burials may be unearthed during construction. To minimize the effects of this potential impact, PG&E would implement **APM CU-3**. APM CU-3 requires that if human remains are encountered during construction or any other phase of development, work in the area of the discovery would be halted in that area and directed away from the discovery. The County Coroner would be notified immediately. In the event the remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission, who would then identify a Most Likely Descendent. The Most Likely Descendent would consult with PG&E's archaeologist to determine further treatment of the remains. With the implementation of APM CU-3, this impact would be less than significant.

## 5.6 Geology and Soils

### GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic groundshaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on geologic units 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.6.1 Setting

#### Regional Setting

The proposed project is in the Coast Ranges Geomorphic Province of California, 65 miles northwest of San Francisco and 18 miles from the Pacific Ocean. Windsor is in the Santa Rosa Valley, with the Russian River and Mendocino Range to the west and the northwest-southeast trending foothills of the Mayacamas and Sonoma Mountains to the east. These mountains are comprised chiefly of three major rock groups: the Franciscan Complex, the Coast Range ophiolite, and the Great Valley Sequence. Most of the valleys and ridges in the region have formed in response to tectonic stresses related to the San Andreas Fault system. Landslides in the region have helped generate an irregular topography (PG&E 2010).

#### Project Setting

The substation site is approximately 120 feet above mean sea level. The topography of the substation property and the vicinity slopes gently to the west.

**Geology.** The geology in the vicinity of the project site consists largely of sedimentary and volcanic rocks of Holocene (less than 11,000 years in age) and Pleistocene age (2.588 million to 12,000 years before present). The Windsor Syncline, which contains deposits of the Glenn Ellen Formation and Quaternary Alluvium, forms the main trough of the Santa Rosa Valley and the project area. The Quaternary Alluvium generally underlies the flat-lying areas and waterways, with the youngest alluvial deposits surrounding

stream channels and older alluvial deposits beneath the flat terrain. The young alluvial deposits are particularly susceptible to liquefaction and seismically-induced settlement. The Glen Ellen Formation consists in part of partially cemented beds and alluvial fan and piedmont deposits. The Glen Ellen Formation is underlain by the Huichica and Sonoma Volcanic Formations, with numerous active and inactive faults (PG&E 2010). The geologic units in the project area are described in more detail in Table 5.6-1.

**Table 5.6-1. Geologic Units in the Project Area**

Symbol	Unit Name	Age	Description
Qal	Alluvium Older (Qo) and Younger (Q)	Holocene- Pleistocene	Unconsolidated stream channel deposits, stream terrace deposits, alluvial fan deposits, and flood plain deposits composed of boulders, cobbles, gravel, and sand; Q-interbedded layers of sand, silt, clay, and gravel; Qo-fine sand, silt, and silty clay, coarse sand and gravel, with gravel more abundant near fan heads
QTge	Glenn Ellen Formation	Pleistocene – Late Pliocene	Glenn Ellen formation consists of fluvial origin clay-rich stratified deposits of poorly sorted, loosely consolidated sand, silt and gravel interbedded with minor beds of matrix-supported conglomerate with basalt, andesite and obsidian clasts and silicic tuffs
QTh	Huichica Formation	Pleistocene – Late Pliocene	Huichica Formation consists of alluvial fan and fluvial deposits of massive yellow silt and yellow and blue clay with interbedded lenses of sand, gravel, and interbedded Roblar tuff beds
Tsv (Psv)	Sonoma Volcanics	Pliocene – Miocene	The Sonoma Volcanics consist of a thick sequence of continental volcanic and volcanoclastic rocks including basalt, andesite, and rhyolite lavas interbedded with tuffs, lahar deposits, debris avalanche deposits, mudflow units, reworked tuffs, sedimentary breccia deposits derived from volcanic rocks, and lacustrine deposits
Tm (Pwg)	Wilson Grove (formerly Merced) Formation	Late Pliocene - Late Miocene	Shallow marine (brackish bay) to deep-water marine deposits of fine sand and sandstone, thin interbeds of clay and silty-clay, some lenses of gravel, and localized fossils (foraminifers, brachiopods, pelecypods, mollusks, arthropods and echinoids)
Tp (Pp)	Petaluma Formation	Late Pliocene - Late Miocene	Continental and shallow marine to brackish water deposits of clay, shale, and sandstone, conglomerate, nodular limestone and diatomite, with interbedded tuffs; Contains mammalian and ostromod fossils of Miocene age; Lower member contains shale with nonmarine and marine microfauna (diatomites) and is prone to sliding; Middle member contains conglomerate derived from Franciscan sources; Upper member contains conglomerate derived from Monterey Group; Highly folded and faulted and interfingers with Wilson Grove Formation to the west
KJf	Franciscan Complex	Cretaceous – Jurassic	Melange with blocks of greywacke, chert, greenstone, and metamorphic rocks; Intrusive sills of diabase, gabbro, and serpentinite, glaucophane and related schists

Sources: Farrar et al. 2006; PG&E 2010; PG&E 2011.

**Paleontology.** The alluvial sediments in the project area are unlikely to contain any significant fossil resources. The sedimentary rocks of the Glenn Ellen and Huichica Formations have not been identified as important paleontological formations, and the underlying Sonoma Volcanics are unlikely to be encountered during site construction activities, which would generally involve only shallow ground disturbance.

The University of California Museum of Paleontology (UCMP) databases of known paleontological sites in Sonoma County were reviewed to identify the occurrence of fossils in formations related to the project site. This records search identified invertebrate fossils near the Russian River, approximately 2 to 5 miles west of the project area. These invertebrate fossils are found in the Tertiary age Wilson Grove formation (formerly Merced). Due to their typical depth and distance from the project area, such fossils

are unlikely to be encountered during site activities (PG&E 2010). None of the fossil locations identified in the UCMP database occur in the vicinity of the project area. See Section 5.5 (Cultural Resources) for more analysis of possible impacts to paleontological resources.

## Seismicity

The project area is in the tectonically active Coast Ranges Geomorphic Province of Northern California. The 1997 Uniform Building code (UBC) locates the entire Bay Area within Seismic Risk Zone 4, which is expected to experience maximum magnitudes and damage in the event of an earthquake.

There are three active fault zones that have the potential to affect the project: the Healdsburg-Rodgers Creek, the San Andreas, and the Maacama (PG&E 2010). The San Andreas Fault Zone is located about 19 miles southwest of Windsor and is considered to be the major seismic hazard in California. According to the Earthquake Hazard Map for Windsor, the shaking severity level at the project site is expected to be strong if a major earthquake occurs (California Geological Survey 2011). Several other active faults have the potential to cause widespread damage to the project region and are listed in Table 5.6-2. An active fault is defined by the state of California as a fault that has had surface displacement within approximately the last 11,000 years (Hart 2007).

**Table 5.6-2. Major Named Faults Considered Active in Northern California**

Fault <sup>1</sup>	Maximum Earthquake Magnitude (Mw) <sup>2</sup>	Slip Rate (mm/yr.)	Approximate Distance to Closest Surface Trace (miles)	Direction From Project
Healdsburg-Rodgers Creek	7.0	9.0	3	East
Maacama (South)	6.9	9.0	5	Northeast
San Andreas	8.0	24.0	19	Southwest
West Napa	6.5	1.0	32	Southeast
Concord – Green Valley	6.9	6.0	32	Southeast
Hayward (North)	6.9	9.0	42	Southeast

Source: PG&E 2010

1 - These are all strike-slip faults. A strike-slip fault is an approximately vertical fault plane where the rock on one side of the fault slides horizontally past the other.

2 - This is the maximum movement magnitude. There is a 90 percent probability that it will not be exceeded in 50 years.

Fault rupture is the displacement at the earth's surface resulting from fault movement associated with an earthquake. Earthquake Fault Zones (EFZs) have been established in accordance with the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act). The Healdsburg-Rodgers Creek, Maacama (south segment), San Andreas (North Coast South), West Napa, Concord-Green Valley, and Hayward faults are all identified by the Alquist-Priolo Act. No project components are within a designated EFZ and no mapped active fault traces are known to transverse the substation site. However, surface fault rupture is not necessarily restricted to the area within an EFZ (PG&E 2010), and the site would likely experience strong levels of shaking from an earthquake in the region (ABAG 2003; California Geological Survey 2011). Severity as high as IX (violent) on the Modified Mercalli Intensity Shaking Severity Level Scale could occur in the event of a major earthquake on the Rodgers Creek fault (ABAG 2010). Sonoma County has a 17.7 percent probability of experiencing ground shaking from at least one major earthquake (Moment Magnitude of 6.7 or greater) by 2031 (Working Group of California Earthquake Probability 2003).

## Geologic Hazards

**Subsidence.** Human activities often are the primary cause of subsidence. Activities such as underground mining of coal, groundwater or petroleum withdrawal, and drainage of organic soils cause gradual regional lowering of land elevation. Subsidence poses a greater risk to property than to life. Though impacts related to subsidence usually consist of direct structural damage, property loss, and depreciation of land value

**Slope Stability and Landsliding.** In Sonoma County, the frequency of fractured rock formations, steep topography, coastline geography, and regional seismicity mean that large areas are subject to slope instability and landsliding, the most widespread type of ground failure in Sonoma County (Sonoma County 2006). The project area is relatively flat and should not be vulnerable to slope instability or landslides.

**Settlement.** Settlement is the depression of soil when a load, such as that of a building or new fill material, is placed upon it. During an earthquake, settlement can be accelerated as a result of the relatively rapid rearrangement and compaction of subsurface materials (particularly loose, non-compacted, and variable sandy sediments). Areas susceptible to earthquake-induced settlement include those underlain by thick layers of colluvial material or unengineered fill. Soils developing on formational materials, such as the Glenn Ellen Formation, may possess a low to moderate potential for settlement (PG&E 2010).

**Liquefaction.** Liquefaction is the transformation of subsurface soils into a liquid state. Soil liquefaction causes ground failure that can damage roads and buildings with shallow foundations. Liquefaction is most likely to occur in areas with shallow groundwater (40 feet below ground surface or less) and low density, fine-grained sandy soils. High-intensity ground motion, like that caused by an earthquake, in these areas can lead to liquefaction (PG&E 2010). In alluvial basins within Sonoma County, the potential for liquefaction failures increases in the winter and spring when the ground water table is higher (PG&E 2010). According to the Liquefaction Hazard Map for Windsor, the project area is within an area of very low liquefaction hazard (ABAG 2001).

**Expansive Soils.** Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of alternate wetting and drying. Expansive soils possess a “shrink-swell” characteristic, presenting a risk of structural damage over time if foundations are not properly engineered to account for soil volume change.

## Soils

The proposed substation site is located on relatively flat ground with dominant soils belonging to the Haire and Huichica Series. The main soil types in the vicinity of the proposed substation site are Haire Clay Loam HcC and Huichica loam (shallow) HvC. Haire Clay Loam HcC is an alluvium derived from sedimentary rock. It is characterized by slopes ranging from 0 to 9 percent, moderate drainage, and a moderately low to moderately high capacity to transmit water. The Huichica loam (shallow) HvC is an alluvium derived from igneous, metamorphic, and sedimentary rock. It is characterized by slopes ranging from 0 to 9 percent, moderate drainage, and a very low to moderately low capacity to transmit water (NRCS 2011).

Certain soil characteristics, such as low permeability, susceptibility to expansion, and soil erosion, may limit development or create problems for existing structures. The Natural Resources Conservation Service (NRCS) land capability classification system rates soils by various characteristics dependent on location, slope, parent rock, climate, and drainage. The Haire Series is classified as a Class 3e soil, with low



permeability, moderate to high shrink-swell potential, moderate-high corrosivity, and medium compressibility. The Huichica Series is classified as a Class 4e soil, with low permeability, low to high shrink-swell potential, high corrosivity, and medium compressibility (NRCS 2011). Soils categorized as Class 3 and above have limitations that make them unsuitable for cultivation, and require conservation practices and careful management during construction. Table 5.6-3 shows the properties of the soils at the proposed substation site.

**Table 5.6-3. Properties of Soils at the Proposed Substation Site**

Property	Huichaca Loam Shallow (HvC)	Haire Clay Loam (HcC)
Substation Parcel Coverage	86.6%	13.4%
Substation Footprint Coverage	98.8%	1.2%
Gravel Source	Poor	Poor
Sand Source	Poor	Poor
Farmland Category	Not Prime Farmland	Farmland of Statewide Importance
Erosion Factor	Moderate (K-factor = 0.37)*	Moderate (K-factor = 0.32)*
Slope	0 to 9 percent	0 to 9 percent
Shrink/Swell Potential	Low to High	Moderate to High

Source: NRCS 2011

\*K-factor indicates the susceptibility of a soil to sheet and rill erosion by water. Values range from 0.02 to 0.69 with the higher value more susceptible to erosion.

## Regulatory Setting

The following regulations apply to soil and geologic risks and impacts in the project area.

**Alquist-Priolo Earthquake Fault Zoning Act (P.R.C. § 2621 et seq.).** This Act prohibits the location of most types of structures for human occupancy across the active traces of faults in earthquake fault zones shown on maps prepared by the state geologist. It also regulates construction in the corridors along active faults.

**Seismic Hazards Mapping Act of 1990 (P.R.C. § 2690–2699.6).** Under the provisions of this act, the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, seismically induced landslides, and other related hazards. These maps are to be used by cities and counties in preparing their general plans and adopting land use policies in order to reduce potential public hazards.

**Uniform Building Code (UBC).** The UBC sets forth design codes to improve the capacity of structures to withstand seismic hazards. Published and periodically updated by the International Conference of Building Officials (ICBO), it covers earthquake provisions (Chapter 16), foundations and retaining walls (Chapter 18), and excavation and grading (Chapter A33). In California it is referred to as the California Building Code (CBC). Seismic site factors are derived from the UBC/CBC and are required by state and local agencies in geotechnical investigations for critical structures in areas of high seismicity.

**California Public Utility Company (CPUC) General Order 95.** General Order 95 defines safe practices for utility poles and wiring.

## 5.6.2 Environmental Impacts and Mitigation Measures

- a. *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
- i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

*LESS THAN SIGNIFICANT.* In the Windsor area, two Alquist-Priolo Act Earthquake Fault Zones have been established: one for the Healdsburg-Rodgers Creek fault and one for the Maacama fault. However, the substation site and distribution line work areas are not located in either of these Earthquake Fault Zones, and there are no active surface-fault traces at the project sites. Therefore, the potential for surface-fault rupture is low, and the impact would be less than significant.

- ii) *Strong seismic ground shaking?*

*LESS THAN SIGNIFICANT.* There are three major active fault zones that have the potential to generate strong ground shaking in the project area: the Healdsburg-Rodgers Creek, the San Andreas, and the Maacama. The San Andreas Fault Zone is located about 19 miles southwest of Windsor and is considered to be the most substantial seismic hazard in California. According to the Earthquake Hazard Map for Windsor, the shaking severity level is expected to be strong if a major earthquake occurs (ABAG 2010). Several other active faults have the potential to cause widespread damage to the project region and are listed in Table 5.6-2. Sonoma County has a 17.7 percent probability of experiencing ground shaking from at least one major earthquake (Moment Magnitude of 6.7 or greater) by 2031 (Working Group on California Earthquake Probability 2003).

The project area is relatively flat. The area is not prone to lateral spreading, landslides, liquefaction or other seismically induced ground failures. Project facilities would be engineered to withstand expected ground motions without substantial adverse impacts. However, if a significant seismic event occurs nearby, project facilities could be affected. Project design would be in accordance with the CPUC's General Order 95 and all other applicable state requirements, including the California Building Code. Conformance to design standards developed for the project site would minimize the effect of strong seismic shaking that could occur. Project construction would neither affect any existing geologic feature nor expose people to geologic hazards. Therefore, impacts due to strong ground shaking would be less than significant.

- iii) *Seismic-related ground failure, including liquefaction?*

*LESS THAN SIGNIFICANT.* The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude and frequency of earthquakes in the surrounding region. Saturated, unconsolidated silts, sands, and silty sands relatively near the ground surface are most susceptible to liquefaction. The soils present in the project area have low susceptibility to liquefaction (ABAG 2001). In addition, facilities would be designed to reduce the minor threat of damage to a less than significant level.

- iv) *Landslides?*

*NO IMPACT.* The proposed project is located on relatively level ground; therefore, the project site is not susceptible to landslides.

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

*LESS THAN SIGNIFICANT.* The dominant soils at the proposed substation site are from the Huichica and Haire Series. Huichica Series soils are moderately well-drained, runoff and permeability are moderately slow to very slow, erosion hazard is slight, and the expansion potential is low to medium. Haire Series soils are moderately well-drained, runoff is slow to rapid, and permeability is very slow.

Construction would occur in relatively flat terrain and would involve minimal grading. Erosion control best management practices (BMPs) would be used where excavation and grading occurs as would be required by the project NPDES permits and the SWPPP plan (**APM WQ-1, APM WQ-4**). Both temporary methods, such as laying down straw, and long-term methods such as laying down gravel within the substation yard would limit the potential for soil erosion. With proper construction practices, there should be no notable erosion or transport of sediment from the site. Engineering-level geotechnical studies would be completed to ensure that the project design adequately accounts for site-specific soil conditions.

Topsoil would be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil would be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance would be stabilized by landscaping or gravel. Excavated soil from pole replacement drilling activities would be placed in spoil piles adjacent to each hole and used for backfilling purposes and properly compacted. Excavated soil from trenching activities would be stockpiled and new thermal select or controlled backfill would be imported, installed and compacted. A road-based backfill or slurry concrete cap would be installed, and the road would be restored in compliance with the encroachment permit from the Town of Windsor. With the implementation of these BMPs and APMs, impacts due to erosion or loss of topsoil would be less than significant.

**c. *Would the project be located on geologic units 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?***

*NO IMPACT.* The proposed substation site is dominated by soils from the Huichica and Haire Series. Huichica Series soils are moderately well-drained, runoff and permeability are moderately slow to very slow, erosion hazard is slight, and the expansion potential is low to medium. Haire Series are moderately well-drained, runoff is slow to rapid, and permeability is very slow. There are no unstable geologic units in the proposed project area; therefore, no impact is expected.

**d. *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?***

*LESS THAN SIGNIFICANT.* The soils at the proposed substation site are loam and clay, which are listed as having a moderate expansion potential. Potential for expansive soil conditions would be accounted for in the design and construction practices of the project, thereby ensuring that impacts are less than significant.

**e. *Would the project 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?***

*LESS THAN SIGNIFICANT.* Huichica and Haire Series soils dominate the substation site. Runoff from these soils is slow for Huichica and slow to rapid for Haire, and permeability is moderately slow to very slow (estimated at 60 minutes per inch). Therefore, the soil drainage characteristics would not be appropriate for onsite wastewater disposal systems. Since no on-site waste water disposal would be required, there would be no impact. See Section 5.9 for information regarding stormwater runoff from the project site.

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## 5.7 Greenhouse Gas Emissions

### GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 5.7.1 Setting

The proposed project is in the Bay Area Air Quality Management District (BAAQMD). Emissions from project-related construction and operational activities would occur within the jurisdiction of the BAAQMD and the California Air Resources Board (CARB).

Globally, temperature, precipitation, sea level, ocean currents, wind patterns, and storm activity are all affected by the presence of greenhouse gases (GHG) in the atmosphere. Human activity contributes to emissions of six primary GHGs: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF<sub>6</sub>). Human-caused emissions of GHGs are linked to climate change. How global climate change may affect California's public health, infrastructure and natural resources is described in the 2009 Biennial Report of the California Climate Action Team (Cal EPA 2010). The Climate Action Team found that:

"Extreme events from heat waves, floods, droughts, wildfires and bad air quality are likely to become more frequent in the future and pose serious challenges to Californians. They pose growing demands on individuals, businesses and governments at the local, state, and federal levels to minimize vulnerabilities, prepare ahead of time, respond effectively, and recover and rebuild with a changing climate and environment in mind."

Emissions of carbon dioxide occur largely from combustion of fossil fuels. Other GHG emissions tracked by State inventories occur in much smaller quantities. However, the global warming potential of CH<sub>4</sub> is about 21 times that of CO<sub>2</sub>. The use of sulfur hexafluoride or SF<sub>6</sub> in power transformers and circuit breakers at power plants and substations also poses a concern, because this pollutant can slowly escape from the equipment, and it has an extremely high global warming potential (one pound of SF<sub>6</sub> is the equivalent warming potential of approximately 23,900 pounds of CO<sub>2</sub>). When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO<sub>2</sub> emission rate (CO<sub>2</sub>e).

In 2008, California produced approximately 478 million metric tonnes of CO<sub>2</sub> equivalent (478 MMTCO<sub>2</sub>e), equal to about 525 million tons, or about one percent of the 49,000 MMTCO<sub>2</sub>e emitted globally (IPCC 2007).<sup>10</sup> Statewide GHG emissions in 1990 were 427 MMTCO<sub>2</sub>e (CARB 2007). Within the BAAQMD portion of Sonoma County, transportation is the largest source category of GHG emissions (51 percent) at 2.1 MMTCO<sub>2</sub>e/yr, and electricity generation, cogeneration, and imports sources are 0.6 MMTCO<sub>2</sub>e/yr or 14 percent of the area's GHG emissions (PG&E 2010).

<sup>10</sup> One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.

The inventory of California GHG emissions shows that electricity generation and imports make up about 25 percent of the statewide emissions, as shown in Table 5.7-1.

**Table 5.7-1. 2008 California Greenhouse Gas Emissions Inventory**

Source Category	2008 (MMTCO <sub>2</sub> e/yr)	Percent of Total
Transportation	175.0	36.6
Electric Power (Generation and Imported)	116.4	24.4
Commercial and Residential	43.1	9.0
Industrial	92.7	19.4
Recycling and Waste	6.7	1.4
High Global Warming Potential Gas (including SF <sub>6</sub> losses)	15.7	3.3
Agriculture	28.1	5.9
Forestry (excluding carbon sinks)	0.2	< 0.1
<b>Total Emissions</b>	<b>477.8</b>	<b>100</b>

Source: CARB 2010a.

### ***Applicable Regulations***

**U.S. EPA GHG Mandatory Reporting Program (40 CFR Part 98).** This rule requires mandatory reporting of GHG emissions for industrial facilities and power plants that emit more than 25,000 MTCO<sub>2</sub>e emissions per year. Currently, there are no federal regulations limiting GHG emissions from the proposed project.

**CEQA Guidelines.** On December 31, 2009, the California Natural Resources Agency adopted amendments to the State CEQA Guidelines to change how public agencies review the environmental impacts of GHG emissions and energy use. These amendments, which were approved by the Office of Administrative Law on February 16, 2010, became effective on March 18, 2010, and became mandatory for most public agencies approximately 120 days later (see CEQA Guidelines, §15007, subd. (d)(2)).

**California Global Warming Solutions Act of 2006 (AB32).** This law requires CARB to adopt a statewide greenhouse gas emissions limit equivalent to the statewide GHG emissions levels in 1990 (427 MMTCO<sub>2</sub>e) to be achieved by 2020. A longer range GHG reduction goal was set in June 2005 by California Executive Order S-3-05, which requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050. CARB adopted the 2020 statewide target and mandatory reporting requirements in December 2007, and the statewide AB32 Scoping Plan, discussed in detail below, in December 2008 (CARB 2008).

**California Air Resources Board AB32 Scoping Plan.** The AB32 Scoping Plan (CARB 2008) identifies how emission reductions will be achieved for significant sources of GHG via regulations, market mechanisms, and other actions. Many sectors of the California economy may need to make wholesale changes in how services or goods are provided. Key elements of the Scoping Plan are a 33 percent Renewables Portfolio Standard (RPS) for electricity, aggressive energy efficiency targets, and a cap-and-trade system that includes the electricity sector. Statewide plans and programs for GHG management that stem from AB32 are within the sole jurisdiction of the CARB. Since CARB must fulfill its mandate to achieve the maximum technologically feasible and cost-effective GHG emission reductions, the proposed project would be subject to requirements for GHG control, namely for use of SF<sub>6</sub> in the substation switchgear.

**CARB SF<sub>6</sub> Regulations (17 CCR 95350).** In early 2010, CARB adopted a regulation for reducing SF<sub>6</sub> emissions from electric power system gas insulated switchgear (CARB 2010b). The regulation requires owners of such switchgear to: (1) annually report their SF<sub>6</sub> emissions; (2) determine the emission rate relative to the SF<sub>6</sub> capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgear and



their SF<sub>6</sub> capacities; (4) produce a SF<sub>6</sub> gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification.

**Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100).** Mandatory reporting of GHG emissions applies to electric generating facilities with a nameplate capacity equal or greater than 1 MW capacity and GHG emissions exceeding 2,500 metric tonnes per year.

**California Renewable Energy Programs.** In 2002, California established its initial Renewable Portfolio Standard (RPS) with the goal of increasing the percentage of renewable energy in the State's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities, including PG&E, to reach the 33 percent renewable electricity goal by 2020, consistent with the AB32 Scoping Plan (CARB 2008).

**California Renewable Energy Resources Act of 2011 (SB X1-2).** In April 2011, Senate Bill 2 of the 1st Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent RPS by December 31, 2020 to all retail sellers of electricity and establishes renewable energy standards for interim years of: an average of 20 percent from 2011 through 2013, a minimum of 20 percent thereafter through 2016, and a minimum of 25 percent by December 31, 2016. This codified the requirement to achieve 33 percent RPS statewide by the end of 2020, as specified in the AB 32 Scoping Plan (CARB 2008).

**Sonoma County Community Climate Action Plan.** In 2005, the nine cities in Sonoma County and the County of Sonoma set a goal to reduce local greenhouse gas emissions 25 percent below 1990 levels by 2015. The Community Climate Action Plan was released in October 2008. Solutions identified for the electric power sector include: maximizing energy and water efficiency; local government development of renewable energy; incentivizing use of electric heat pumps and solar hot water heaters; and instituting a green building ordinance (Climate Protection Campaign 2008). The Sonoma County Transportation Authority and the Regional Climate Protection Authority (RCPA), created in 2009, oversee local agency coordination on climate change issues and establish a local clearinghouse for efforts to reduce GHG emissions.

## 5.7.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs (see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

For the analysis of whether the quantity of direct and indirect GHG emissions generated by the project would be considered potentially significant, this analysis uses BAAQMD's GHG screening level of 10,000 metric tonnes per year (10,000 MTCO<sub>2</sub>e/yr) for operational-related activities of new stationary sources in the CEQA process (BAAQMD 2011). BAAQMD's guidelines do not identify any threshold for construction-related activities.

**a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

The proposed project would generate GHG emissions through construction activities and substation operation. These emissions are discussed in more detail below.

**Construction Impacts**

*DURING CONSTRUCTION, LESS THAN SIGNIFICANT.* The proposed project involves construction of a substation covering 2.6 acres. The project would also require rebuilding 1.5 miles of power lines and reconductoring of 1.8 miles of overhead and underground distribution lines. The GHG emissions from construction activities are considered in the following context. First, the period of construction would be short-term, taking place in phases over eight months. Second, the construction workforce would consist of up to 15 workers for the substation and up to 16 for associated distribution line work. These workers would commute from within the general region of the project. Construction-phase GHG emissions are quantified in Table 5.7-2. Construction equipment that would be used for the proposed project is shown in Table 4-3 (Substation Construction – Typical Equipment Use) in Section 4 (Project Description). The construction workforce is described in detail Section 4.10.3 (Construction Workforce and Schedule) in the Project Description.

During construction, GHG emissions would be generated by vehicles and equipment. Diesel and gasoline-powered construction equipment at work sites would include loaders, graders, backhoes, cranes, demolition equipment, and trucks for lifts, delivery, concrete, water, and work crews. An estimated total of 353.6 MTCO<sub>2</sub> would be generated over the entire duration of construction activities for the Windsor Substation Project.

**Table 5.7-2. Construction-Phase GHG Emissions (MTCO<sub>2</sub>e) – Windsor Substation Project**

	2012	2013	Total
Emissions from Construction Activity	70.0	283.6	353.6
Emissions from Construction Activity including APMs	59.5	241.0	300.5

Note: Motor vehicle emissions of CO<sub>2</sub>-equivalent are approximately 95 percent CO<sub>2</sub>.  
One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.  
Source: PG&E 2011 (Estimated using URBEMIS 2007 9.2.4 and EMFAC 2007 Ver2.3.A).

Construction-phase GHG emissions associated with construction and commuter vehicles would be minimized by **APM AQ-6** (encouraging carpooling to the site), **APM AQ-7** (use of fuel-efficient construction equipment), **APM AQ-8** (minimizing unnecessary idling time), **APM AQ-9** (encouraging use of natural gas power vehicles for passenger cars and light duty trucks), **APM AQ-10** (minimizing welding and cutting), and **APM AQ-11** (recycling construction waste). The full text of these measures is in Table 4-5 (Applicant Proposed Measures) in the Project Description. Table 5.7-2 shows the estimated construction GHG emissions including the implementation of these APMs. Emissions during construction would be considered less than significant under the BAAQMD recommendations, which do not include a threshold for construction activities, and the emission rate would fall well below the comparable threshold for operational-related GHG emissions (10,000 MTCO<sub>2</sub>e/yr). Therefore, construction would not generate GHG emissions at a level that may have a significant impact, and the impact related to GHG emissions from project construction would be less than significant.

**Operations and Maintenance Impacts**

*DURING OPERATION, LESS THAN SIGNIFICANT.* During operation, emissions would result from the operation of vehicles used for periodic visits for electrical switching and routine maintenance. PG&E personnel would visit the substation on a monthly basis or as needed under emergency conditions. There would be an estimated 250 vehicle miles per month (for light-duty plus heavy-duty trucks) for substation maintenance and repairs. Because the substation would not be staffed, there would be no vehicular emissions associated with regular commuting to and from the substation. The substation transformers would leak small amounts of SF<sub>6</sub>, which is used as a circuit breaker electrical insulation medium. Although sulfur hexafluoride is a nonhazardous, inert gas, it has a global warming potential 23,900 times that of CO<sub>2</sub>.

PG&E would incorporate the proposed project into its system-wide SF<sub>6</sub> emission reduction program. PG&E reports that since 1998, it has reduced SF<sub>6</sub> emissions from its transmission and distribution operations by 89 percent, and reduced absolute SF<sub>6</sub> emissions by 83 percent (PG&E 2010). PG&E would install new SF<sub>6</sub> breaker designs that are guaranteed to have an annual leak rate of one-half of one percent or less (**APM AQ-14**) and maintain substation breakers in accordance with company guidelines (**APM AQ-13**). With the implementation of these measures and compliance with the CARB SF<sub>6</sub> regulations, the potential for SF<sub>6</sub> leaks would be minimized.

Estimated GHG emissions from the operations phase of the project are shown in Table 5.7-3.

**Table 5.7-3. Operation-Related GHG Emissions (MTCO<sub>2</sub>e/yr) – Windsor Substation Project**

	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	SF <sub>6</sub>	Total
SF <sub>6</sub> Process Loss	—	—	—	9.95	9.95
Light-Duty Truck (200 miles per month)	1.42	0.001	0.008	—	1.429
Heavy-Duty Truck (50 miles per month)	0.91	0.001	0.003	—	0.914
<b>Substation Operations Total</b>	<b>2.33</b>	<b>0.002</b>	<b>0.011</b>	<b>9.95</b>	<b>12.29</b>

Note: Motor vehicle emissions of CO<sub>2</sub>-equivalent are approximately 95 percent CO<sub>2</sub>.  
One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.  
Source: PG&E 2010.

The project’s GHG emissions would be well below the BAAQMD threshold for operational-related GHG emissions (10,000 MTCO<sub>2</sub>e/yr). Therefore, the impact of GHG emissions from project operations would be less than significant, and no mitigation is required.

***b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?***

*LESS THAN SIGNIFICANT.* With total GHG emissions at an estimated 12.29 MTCO<sub>2</sub>e/yr, the project would fall well below the federal reporting threshold for stationary sources (25,000 MTCO<sub>2</sub>e/yr), and therefore, would not be subject to federal reporting. The proposed substation would improve the infrastructure used in distribution of California’s energy supply, and it would not affect California’s ability to supply renewable energy. The proposed project would not affect PG&E’s ability to meet its RPS obligations. Similarly, the proposed project would not affect or conflict with Sonoma County’s ability to achieve its GHG reduction goals. PG&E would comply with CARB SF<sub>6</sub> regulations to inventory and report amounts leaked, and minimize SF<sub>6</sub> leaks through the use of new technology. By complying with these requirements, the proposed project would not conflict with any applicable GHG management plan, policy, or regulation, and this impact would be less than significant. No mitigation is required.

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## 5.8 Hazards and Hazardous Materials

### HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

This section addresses potential hazards at the proposed project site, including existing environmental contamination. It also covers the use of hazardous materials and the generation of hazardous waste. This analysis is based on [a-Phase I and Phase II Environmental Site Assessments](#) by ERM in 2011 ([ERM 2011a and 2011b](#)) and on a search of the State Water Resources Control Board's GeoTracker Database and California Department of Forestry and Fire Protection maps.

### 5.8.1 Setting

The topography of the proposed substation site and the vicinity slopes gently to the south and west. The proposed substation site was previously developed and contains remnant structures consisting of four concrete cinder block walls from one of the former commercial buildings and a small wood shed. There is also evidence of subsurface infrastructure features associated with the former industrial use of the site. There are low concentrations of fuel(s), oil(s), and chlorinated solvents present in the soil and shallow groundwater at the substation site (ERM 2011a, ERM 2011b, PG&E 2011). This contamination could be related to on-site activities, off-site sources, or a combination of both. Arsenic and cobalt were both detected in the soil in excess of industrial screening levels; however, the levels of arsenic and cobalt may represent natural soil conditions (PG&E 2011). Detections of metals in the soil also appear to be related to natural background concentrations; however, this cannot be definitively established with

existing data (PG&E 2011). It is also possible that higher concentrations of regulated hazardous substances are present in areas that were not sampled.

Testing also detected low concentrations of range of volatile organic compounds (VOCs) in soil vapor. Most of the detected compounds are characteristic of fuel or oil. Chlorinated VOC cis-1-, 2-Dichloroethene (1, 2-DCE) was also detected at one sampling location. Xylenes were detected in one groundwater sample location, but were below the established Environmental Screening Level and California Maximum Containment Level. The groundwater sample may represent seasonal, perched water rather than the shallowest aquifer at the site, which is reported to occur at approximately 35 feet below ground surface (bgs) at a nearby site. Samples were not taken at any intervals deeper than 5.5 to 6 feet bgs; therefore, some compounds of concern may be present in deeper groundwater (PG&E 2011).

There have been 13 documented releases of known hazardous materials within 1,000 feet of the project corridor.<sup>11</sup> The results of a GeoTracker search for known contamination in areas within 1,000 feet of the substation site and the distribution lines are in Table 5.8-1. The majority of the facilities listed have low potential to affect soil and groundwater beneath the station site due to their distance from the site, the nature of the contamination, and the status of remediation. GeoTracker data indicate that there are nine open cases of known contamination within 1,000 feet of the project corridor. Two of these are moderately likely to affect soil that would be encountered during distribution line work. An additional three sites have a low potential to be encountered, and two sites are under investigation.

The sections below describe potential hazards.

**Hazardous Materials.** The proposed substation would include three 30-megavolt ampere (MVA) transformers. Each transformer would contain approximately 5,000 gallons of mineral oil used as a coolant. The mineral oil that would be used at the substation would not contain polycarbonated biphenyls (PCB). The substation would be equipped with a retention basin that would meet Spill Prevention, Countermeasure, and Control (SPCC) Guidelines (40 CFR 112). The SPCC basin would be sufficiently sized to contain all of the transformer coolant liquid from the transformer, as well as 10 percent of additional space to allow for rainwater.

Lead-acid batteries would be installed at the substation to provide backup power for monitoring, alarms, protective relaying, instrumentation and control, and emergency lighting during power outages. Containment would be constructed around and under the battery racks according to SPCC Guidelines for containment of a battery leak. In addition, cylinders of compressed nitrogen gas would be used to maintain a slight pressure on oil-filled electric equipment. This would keep out moisture that could potentially damage equipment.

**Electrocution Risk.** The proposed substation could pose an electric shock hazard to site trespassers. The tie in from the Fulton No. 1 60 kV power line to the proposed substation would be in accordance with CPUC's Order 95 Guidelines for safe ground clearances established to protect the public from electric shock. In addition, a 10-foot tall wall and fencing around the proposed project site would restrict site access and minimize potential exposure to electric shock hazards. Warning signs also would be posted related to potential electrical hazards.

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<sup>11</sup> The project corridor consists of the substation property boundary, a 20-foot buffer around distribution lines, and a 50 foot buffer around poles.



**Table 5.8-1. Summary of Areas of Concern – Windsor Substation and Associated Distribution Line Improvement Areas**

Site Name/Address (Windsor)	Contamination Suspected	Media Affected	Site Status	Distance from Project Corridor	Potential to Affect Project	Rationale
Windsor Chevron 9120 Old Redwood Highway	Gasoline, Waste Oil / Motor / Hydraulic / Lubricating	Well used for drinking water supply	Open – Remediation	218.38 ft Northeast	Low	In 1999, two underground storage tanks (USTs) were removed from the site. From 2004 through 2007 the site was investigated. Site closed on 7/23/2010.
Circle K Store (former) 290 Windsor River Rd	Gasoline	Aquifer used for drinking water supply	Open – Site Assessment	771.31 ft Southeast	Low	Former convenience store and gas station. In 1987 three USTs were removed and petroleum hydrocarbons detected in soil samples. After monitoring, groundwater and soil vapor remediation began in 1997. As of 2002, remediation efforts included groundwater extraction and the installation of a Spray Aeration and Vapor Extraction (SAVE) system.
Empire Waste Management 10611 Old Redwood Highway	Gasoline	Aquifer used for drinking water supply	Completed – Case Closed	314.23 East	None	Case completed on October 5, 1994.
Phils (former) 10221 Old Redwood Highway	Gasoline	Aquifer used for drinking water supply	Completed – case closed	In Project Corridor	None	Case completed on September 6, 2011.
West Coast Metals 10439 Old Redwood Highway	Gasoline	Under investigation	Open – Inactive	112.07 Southwest	Unknown	Site under investigation as of March 27, 2009
Red Door Tavern 9551 Old Redwood Highway	Gasoline	Soil	Completed – case closed	68.57 ft Southwest	None	Case completed May 31, 2001.
Windsor Fuel 9600 Old Redwood Highway	Gasoline, Waste Oil / Motor / Hydraulic / Lubricating	Aquifer used for drinking water supply	Open – Assessment and Interim Remedial Action	62.82 ft Southwest	Moderate	The site is an active fuel distributor with multiple USTs removed. Soil and groundwater have been impacted with heavy weight petroleum hydrocarbons, and the extent of contamination defined. The plume does not appear to be migrating. A Feasibility Study/ Corrective Action Plan (FS/CAP) includes excavation of impacted soils when site is redeveloped, and as of July 2011 monitoring was reduced until redevelopment begins.
Godfrey Property 9661 Old Redwood Highway	Gasoline	Aquifer used for drinking water supply	Completed – case closed	135.02 ft Southwest	None	Case completed May 28, 1996.

**Table 5.8-1. Summary of Areas of Concern – Windsor Substation and Associated Distribution Line Improvement Areas**

Site Name/Address (Windsor)	Contamination Suspected	Media Affected	Site Status	Distance from Project Corridor	Potential to Affect Project	Rationale
Aaction Rents 10510 Old Redwood Highway	Gasoline, Diesel	Aquifer used for drinking water supply	Completed – case closed	205.15 ft Northeast	None	Case completed July 23, 2010.
Godoy Property 9397 Old Redwood Highway	Gasoline	Aquifer used for drinking water supply	Completed – case closed	63.95 ft Southwest	None	Case completed May 24, 2000.
Banks Property 340 Windsor River Road	Gasoline	Aquifer used for drinking water supply	Open – Site Assessment	364.82 ft South	Low	Two USTs were removed from the site in 1992. In 1995 the former tank area was overexcavated, and a 350 gallon waste oil tank was discovered. The site was investigated from 2000-2008 when a FS/CAP was prepared.
SCDPW Windsor Phase I Old Redwood Highway	Aviation	Under investigation	Open – Inactive	8.06 ft Northeast	Unknown	Site under investigation as of September 8, 2008.
Shell Service Station 9033 Old Redwood Highway	Gasoline, Diesel, Waste Oil / Motor / Hydraulic / Lubricating	Aquifer used for drinking water supply	Open – Remediation	153.43 ft East	Moderate	In 1987, a former waste oil tank was removed from the site and petroleum hydrocarbons, oil, and grease contamination discovered. Remediation efforts include Soil Vapor Extraction (SVE) in 1997-1999 which was shut down due to ineffectiveness. Groundwater extraction in 2004 removed some contaminants from the site. Site monitoring was ongoing as of March 2010.

Source: State Water Resources Control Board 2011 – GeoTracker

**Fire Risk.** The proposed project would be located in a moderate fire hazard severity zone according to the California Department of Forestry and Fire Protection Fire Hazard Severity Zone Maps (CALFIRE 2007). However, construction of the proposed project would occur in an urban area with no adjacent wildlands. The areas directly surrounding the proposed substation site are developed or open space comprised largely of annual grasses dominated by weeds. The areas surrounding the 12 kV distribution line along Old Redwood Highway and the Fulton No. 1 60 kV Power Line are mostly ruderal, grasslands, and woodland habitats as well as developed areas and residences. The Windsor Fire Protection District serves the Town of Windsor under a joint powers agreement with the Rincon Valley Fire District (WFPD 2011). The area of the proposed substation is served by the Windsor Fire Station Two. This station is staffed 24 hours per day. Windsor Road is a primary emergency access road for the Windsor Fire Station Two (PG&E 2011).

**Air Transportation.** The proposed project site is located approximately 3.6 miles northwest of the Charles M. Schulz Sonoma County Airport (Sonoma County Airport). It is outside both the Comprehensive Airport Land Use Plan Safety Zones and the Relocated Comprehensive Airport Land Use Plan Safety Zones as proposed in the Draft Environmental Impact Report for the Charles M. Schulz – Sonoma County Airport Master Plan Implementation Project (Sonoma County 2011). See Section 5.16, Traffic and Transportation, for discussion of potential impacts to public safety due to the location of an airstrip in the proposed project vicinity.

**Electromagnetic Fields.** Electric voltage and electric current from transmission lines create electromagnetic fields (EMF). Possible health effects associated with exposure to EMF have been the subject of scientific investigation since the 1970s. There continues to be public concern about the health effects of EMF exposure; however, EMF is not addressed here as an environmental impact under CEQA. The CPUC has repeatedly recognized that EMF is not an environmental impact to be analyzed in the context of CEQA because (1) there is no agreement among scientists that EMF does create a potential health risk, and (2) there are no defined or adopted CEQA standards for defining health risks from EMF. Section 4.16 provides greater detail regarding EMF and lists PG&E's "no cost" and "low cost" magnetic field reduction steps in the design of the proposed substation in accordance with Section X(A) of GO 131-D, CPUC Decision No. D.06-01-042, and PG&E's EMF Design Guidelines.

## Regulatory Setting

Hazardous substances are defined by federal and State regulations, which aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition:

*A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.*

**Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA).** The federal Toxic Substances Control Act and RCRA established a program administered by the U.S. Environmental Protection Agency (EPA) for regulating the generation, transportation, treatment,

storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

**Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).** CERCLA, including the Superfund program, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

**Clean Water Act/SPCC Rule.** The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The proposed project is within the jurisdiction of the North Coast RWQCB.

Section 402 of the Clean Water Act authorizes the California State Water Resources Control Board to issue NPDES General Construction Storm Water Permit (Water Quality Order 99-08-DWQ), referred to as the “General Construction Permit.” Construction activities can comply with and be covered under the General Construction Permit provided that they:

- ¾ Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters;
- ¾ Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and
- ¾ Perform inspections of all BMPs.

As part of the CWA, the U.S. EPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112 (Title 40 CFR, Part 112) which is often referred to as the “SPCC rule” because the regulations describe the requirements for facilities to prepare, amend and implement SPCC Plans. A facility is subject to SPCC regulations if a single oil (or gasoline, or diesel fuel) storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the “Navigable Waters” of the United States.

**CPUC General Order (GO) 95: Rules for Overhead Electric Line Construction.** GO 95 is the key standard governing the design, construction, operation, and maintenance of overhead electric lines in the State. It was adopted in 1941 and updated most recently in 2006. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements.

**CCR Title 24, Part 9. California Fire Code (2007).** The California Fire Code establishes fire-safe building standards and practices, including emergency ingress and egress. Sonoma County has adopted the California Fire Code, with amendments, as the County Fire Code.

**California Environmental Protection Agency (Cal/EPA).** Cal/EPA created in 1991, unified California's environmental authority in a single cabinet-level agency and brought the Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board (IWMB), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Cal/EPA's mission is to restore, protect, and enhance the environment, and to ensure public health, environmental quality, and economic vitality.

**California Hazardous Waste Control Law (HWCL).** California's HWCL is administered by Cal/EPA to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, both the State and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

**California Department of Toxic Substances Control (DTSC).** DTSC is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California and implements the federal program primarily under the authority of the HWCL and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

**California Occupational Safety and Health Administration (Cal/OSHA).** Cal/OSHA is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

**Hazardous Materials Release Response Plans and Inventory Act of 1985.** The California Health and Safety Code, Division 20, Chapter 6.95, known as the Hazardous Materials Release Response Plans and Inventory Act or the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Businesses must submit this information to the County Environmental Health Division. The Environmental Health Division verifies the information and provides it to agencies responsible for protection of public health and safety and the environment. Business Plans are required to include emergency response plans and

procedures in the event of a reportable release or threatened release of a hazardous material, including, but not limited to, all of the following:

- ¾ Immediate notification to the administering agency and to the appropriate local emergency rescue personnel.
- ¾ Procedures for the mitigation of a release or threatened release to minimize any potential harm or damage to persons, property, or the environment.
- ¾ Evacuation plans and procedures, including immediate notice, for the business site.

Business Plans are also required to include training for all new employees, and annual training, including refresher courses, for all employees in safety procedures in the event of a release or threatened release of a hazardous material.

**Unified Hazardous Waste and Hazardous Materials Management Regulatory Program.** The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) required the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are: Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (a.k.a. Tiered Permitting); Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan (SPCC); Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community-Right-To-Know"); California Accidental Release Prevention Program (Cal ARP); Underground Storage Tank Program; and Uniform Fire Code Plans and Inventory Requirements. The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA.

**California Department of Pesticide Regulation.** The California Department of Pesticide Regulation's Licensing and Certification Program is responsible for examining and licensing qualified pesticide and herbicide applicators and for certifying pesticide and herbicide applicators who use or supervise the use of restricted pesticides and herbicides. The Department of Pesticide Regulation regulates the use of pesticides and herbicides under the authority of the California Code of Regulations, Title 3, Division 6.

**California Department of Transportation (Caltrans).** An oversize/overweight permit is required for the transportation of any load greater than 80,000 pounds on State Highways and Interstate Highways within California under Section 35780 of Division 15 of the California Vehicle Code. The proposed project's substation transformers weigh approximately 150,000 pounds each and would be subject to this permitting requirement. Oversize/overweight permits are considered on a case-by-case basis but may include requirements such as California Highway Patrol escort, special speed limits, and other restrictions.

**Sonoma County.** The Hazardous Materials Management Services branch of the Sonoma County Health Department's Environmental Health Division is the Certified Unified Program Agency (CUPA) for Sonoma County. It is responsible for enforcement of the following programs for the project vicinity: Hazardous Material Business Plan and Inventory Program; California Accidental Release Prevention Program; Hazardous Waste Generator Program; Hazardous Waste Onsite Treatment; Underground Storage Tank Pro-



gram; Above Ground Petroleum Storage Tank Program; and the Uniform Fire Code as it relates to hazardous materials.

## 5.8.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs (see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

*a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

*LESS THAN SIGNIFICANT.* Hazardous materials used during construction would consist primarily of small volumes of petroleum hydrocarbons and their derivatives (e.g., fuels, oils, lubricants, and solvents) required for operating equipment used during construction/installation (PG&E 2010). These materials are routinely used during construction activities. A Hazardous Substance Control and Emergency Response Plan (**APM HM-1**) for the proposed project would prescribe hazardous material handling procedures to reduce the potential for a spill during construction or exposure of workers or the public to hazardous materials. Environmental and construction safety training would be conducted prior to construction to educate workers of potential safety issues. As described in **APM HM-2**, emergency spill response and clean-up kits would be on site and immediately accessible in case of an accidental release of a hazardous fluid or material. Minor spills or releases of hazardous materials could occur due to improper handling and/or storage practices during construction activities. These potential impacts would be avoided by PG&E through the implementation of a site-specific Construction Storm Water Pollution Prevention Plan (SWPPP) and by training construction personnel in the handling and storage of hazardous materials in compliance with OSHA standards, as described in **APM HM-3**. Development and implementation of the SWPPP is described in more detail in Section 5.9 (Hydrology and Water Quality) under **APMs WQ-2** and **APM WQ-4**. PG&E would also prepare a Spill Prevention, Control, and Countermeasure (SPCC) plan. Requirements for the SPCC are described **APM WQ-5**. In addition, **APM WQ-7** requires that construction work avoid all wetlands, swales, and drainages during construction if possible. If waters cannot be avoided, work would only be performed in these areas outside the wet season. Finally, **APM WQ-8** prohibits handling vehicle maintenance wastes within 100 feet of waterbodies. Compliance with RCRA and Cal/EPA's HWCL and implementation of the aforementioned APMs would ensure that impacts from transport, use, and disposal of hazardous materials during construction would be less than significant.

During the construction phase, large quantities of transformer oil would be transported to the site for use in the substation transformers. Soil, surface water, groundwater, or members of the public could be significantly impacted if a spill of motor vehicle fuel or transformer fluid were to occur as a result of transportation of these materials to the site for project construction. However, such materials are routinely and safely transported on public roadways. The transport of large quantities of hazardous materials is strictly regulated by the CHP, and the transport of oversize/overweight loads is regulated by Caltrans. Large quantities of hazardous materials used during project construction would be transported along regulated routes by a licensed transporter, and would not pose a significant hazard to people or the environment.

Operation and maintenance of the proposed substation would involve periodic transport, use, and disposal of minor amounts of hazardous materials, primarily mineral oil and petroleum products (lubricating and insulating oils). Proper handling of these materials would prevent any significant hazards to the public or the environment by reducing the potential for a spill. As mentioned above, PG&E would prepare a SPCC Plan for the substation prior to any equipment containing oil being brought to the site, and the substation design would include spill control features, including a spill retention basin. Compressed nitrogen gas would be used on oil-filled equipment. Release of nitrogen gas could occur if a cylinder valve is broken off. Accidental loss of nitrogen gas would be prevented by properly confining the valves. Personnel who move cylinders would do so only when protective caps are in place over the valves. The new oil-filled transformer would be installed, operated, and maintained in accordance with the SPCC plan. The SPCC and procedures for vehicle maintenance are described in **APM WQ-5** and **APM WQ-8**. With the implementation of these APMs and compliance with all relevant regulations related to handling of hazardous materials, impacts from operation and maintenance of the proposed project would be less than significant.

***b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

*LESS THAN SIGNIFICANT.* The proposed project requires construction activities adjacent to one roadside ditch, two drainage ditches, and a seasonal wetland. Additionally, the distribution line activities require pole removal and distribution line improvements adjacent to roadside ditches, drainages, seasonal wetlands, and Starr Creek. These construction activities have the potential to inadvertently release petroleum hydrocarbons and other contaminants into waterways. PG&E would implement hazardous materials and water quality BMPs described in **APMs HM-1, HM-2, HM-3** and **APMs WQ-2, WQ-4, WQ-5, WQ-10**. With the implementation of these measures, potential impacts from upset or accidental spills of hazardous materials during construction and during project operations and maintenance would be less than significant. Refer to section 5.9, Hydrology and Water Quality, for a complete discussion of potential impacts to waterways.

***c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

*LESS THAN SIGNIFICANT.* There is one school (Windsor Christian Academy/First Baptist School) within approximately 500 feet (0.1 miles) of the Fulton No. 1 60 kV power line. A field for the school is 60 feet from the power line. The school building is 2,100 feet (0.4 miles) from the proposed substation site. Work on the Fulton No. 1 60 kV power line would be localized and temporary. With the implementation of APMs related to minimizing impacts of hazardous materials (**APMs HM-1, HM-2, and HM-3**), potential impacts related to the school would be less than significant.

***d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result, would it create a significant hazard to the public or the environment?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The Cortese List includes hazardous waste facilities, contaminated drinking water wells, sites listed as having underground storage tank leaks that have discharged into surface water or groundwater, and other sites with known spills of hazardous materials or waste. The database search for the proposed substation site (ERM 2011a and ERM 2011b) reveals that the proposed substation site is not listed on the Cortese List. However, low concentrations of hazardous materials, fuel(s), oil(s), and chlorinated solvents, are present in the soil, soil vapor, and shallow

groundwater at the site. The concentrations of the detected chemicals are generally not within ranges that would result in regulatory enforcement. However, it is possible that higher concentrations of regulated hazardous substances are present in areas that were not sampled, including in deeper groundwater (PG&E 2011). A GeoTracker search for the substation site and associated distribution line areas found nine open cases of known hazardous materials contamination within 1,000 feet of the substation site and the associated distribution line areas.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered to be a hazardous waste if it exceeded specific CCR Title 22 criteria or criteria defined in CERCLA or other relevant federal regulations. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site would be required. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

PG&E's **APM HM-1** and PG&E BMPs for proper handling, reporting, transporting, and disposal would provide the necessary training for workers and proper response procedures. **APM HM-4** specifies that if contaminated soils or groundwater are encountered, appropriate abatement actions would be implemented in accordance with applicable regulatory requirements. These measures do not specify how or who will determine if regulatory limits are exceeded, and if laboratory data is not properly interpreted environmentally contaminated soil or groundwater could be improperly handled and disposed of resulting in additional environmental contamination or exposure of workers to contaminated materials. **Mitigation Measure Haz-1** is recommended to ensure proper sampling, data review, regulatory coordination, and documentation of compliance. With the implementation of APM HM-1, APM HM-2, and Mitigation Measure Haz-1, impacts related to encountering contaminated soil would be less than significant.

**Haz-1**      **If contaminated soil is encountered, ensure proper sampling, data review, regulatory coordination, and documentation of compliance.** If construction crews uncover unanticipated buried contaminated soils, rock, or groundwater during substation construction or excavation activities associated with distribution work, samples shall be collected by an OSHA-trained technician with a minimum of 40-hours hazardous material site worker training. Laboratory data from suspected contaminated material shall be reviewed by the contractor's Health and Safety Officer and/or PG&E's representative and they shall coordinate with the appropriate regulatory agency if contamination is confirmed, to determine the suitable level of worker protection and the necessary handling and/or disposal requirements.

If during grading or excavation work, the contractor observes visual or olfactory evidence of contamination in the exposed soil, a report of the location and the potential contamination, results of laboratory testing, recommended mitigation (if contamination is verified), and actions taken shall be submitted to the CPUC for each event. This report shall be submitted within 30 days of receipt of laboratory data.

*e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

*NO IMPACT.* The proposed substation site is 3.6 miles northwest of the end of the Sonoma County Airport runway. The new distribution line poles would be 2.17 miles northwest from the end of the Sonoma County Airport runway. Neither the proposed substation nor the distribution poles are within the Com-

prehensive Airport Land Use Plan Safety Zones and the Relocated Comprehensive Airport Land Use Plan Safety Zones as proposed in the Draft Environmental Impact Report for the Charles M. Schulz – Sonoma County Airport Master Plan Implementation Project (Sonoma County 2011). The proposed project would not be located within two miles of a public airport nor would it interfere with or extend into navigable airspace. The height and dimensions of the proposed project comply with all federal, state and local requirements. There would be no potential impacts to the safety of persons working or residing within the proposed project area associated with aircraft operations. See section 5.16, Transportation and Traffic for further analyses of potential impacts associated with the proposed project's proximity to the airport.

***f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?***

*NO IMPACT.* No private airstrips are within the vicinity of the proposed substation site; therefore, there would be no potential impact to public safety associated with private airstrip operations. The nearest private airstrip is the Santa Rosa Memorial Hospital Heliport, approximately 10 miles from the substation site. The Charles M. Schulz Sonoma Airport, a public airport, is approximately 2.5 miles from the southern end of the project corridor (AOPA 2012).

***g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Windsor Road south of the transmission line reconductoring is a primary emergency access for the Windsor Fire Station Two (PG&E 2011). Reconductoring activities would occur at the intersection of Windsor Road and Windsor River Road and along Old Redwood Highway. Temporary road closures would be required during underground cable installation, pole removal and installation, and conductor stringing activities. Road closures could lengthen the response time required for emergency vehicles passing through the construction zone. Implementing **Mitigation Measure T-2** (Ensure emergency response access), described in Section 5.16, Transportation and Traffic, would ensure advance coordination with emergency service providers to avoid restricting movements of emergency vehicles. With the implementation of this measure, impacts would be less than significant.

***h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?***

*LESS THAN SIGNIFICANT.* Construction of the proposed project would occur in an urban area. There are no adjacent wildlands that would expose people or structures to fire risks from wildfire. The areas directly surrounding the proposed substation site are developed or open space comprised largely of annual grasses dominated by weeds or contain portions of gravel. The areas surrounding the 12 kV distribution line along Old Redwood Highway and the Fulton No. 1 60 kV Power Line are mostly ruderal, grasslands, and woodland habitats as well as developed areas and residences. These grasslands areas can be susceptible to fires, though not on a wildfire scale.

Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. Risk of fire would be reduced since all vehicles and equipment would use predominantly existing roads to access the site; all roads to the project site, including one new access road would be paved. In addition, most of the proposed 4.11-acre substation site was previously developed, and any remaining vegetation would be cleared during the initial grading activities. PG&E would require construction crews to

carry fire extinguishing equipment, prohibit trash burning, restrict smoking to cleared areas, and designate parking areas away from any remaining dry vegetation to reduce potential ignition of unforeseen fire hazards at or near the project site (PG&E 2010). By following these preventative measures, the fire-related impacts from construction activities would be less than significant.

Since the proposed project involves the transmission of electricity, operation of the proposed substation and power lines would pose a potential fire hazard. Incidents such as downed power lines or equipment failure could generate sparks and start a fire. PG&E routinely installs high-speed relay equipment that senses broken lines and automatically de-energize the lines in milliseconds. Additionally, the area within the walled/fenced substation would be maintained free of vegetation and combustible materials, and the overhead power lines would remain clear of vegetation as required by the CPUC. Therefore, operational impacts to people and structures from wildland fires would be less than significant.

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## 5.9 Hydrology and Water Quality

### HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Cause inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

This section describes the existing hydrology and water quality in the Windsor Substation Project area and evaluates the potential hydrology and water quality impacts associated with construction and operation of the project. The setting and analysis in this section are based on the following resources: review of *Phase I Environmental Site Assessment* and *Limited Phase II Environmental Site Assessment* reports prepared by ERM; wetland data collected by TRC in February 2011; and a site visit conducted by Aspen Environmental Group in October 2011.

### 5.9.1 Setting

The proposed project site is in the Town of Windsor, at approximately 120 feet above mean sea level (amsl). The Town of Windsor receives 30 to 40 inches of rain annually, with most precipitation occurring between October and April (city-data 2012). The summers are relatively dry, with less than half an inch of rain falling per month on average. The project area includes a variety of land uses, including residential, commercial, industrial, and agricultural.

**Surface Water Features.** Sotoyome Creek is approximately 125 feet north of the proposed substation site, and the Russian River is approximately 1.4 miles west of the proposed substation site.

Surface water at the proposed substation site consists of upland stormwater collected through a seasonal swale, drainage ditch, and roadside ditches along Old Redwood Highway. There is one small, seasonal swale located near the southwestern corner of the substation site. This seasonal swale abuts a drainage ditch and receives water from an unknown, off-site source through a culvert in southwestern corner of the site. The stormwater runoff associated with this seasonal swale area flows to the northwestern corner of the property and appears to ultimately discharge into Sotoyome Creek. Inlets along the northern edge of the substation site appear to be associated with previous land uses on the site rather than stormwater conveyance features; however, a small drainage ditch directs a small amount of runoff into one of the inlets. The inlet directs water south towards the middle of the site; the termination point for this runoff is unknown. (~~TRC 2012~~PG&E 2011)

There are a number of water features along the Fulton No. 1 60 kV Power Line (west of the proposed substation site, along the railroad right-of-way) and along the 12 kV distribution line (east of the proposed substation site, along Old Redwood Highway). These water features include relatively natural features, such as seasonal swales and perennial creeks, and excavated features, such as roadside ditches, constructed as part of street and highway projects. The Fulton No. 1 60 kV Power Line crosses Starr Creek and one of its tributaries. The 12 kV power line also crosses Starr Creek. Wetlands and water features are listed in Table 5.4-2.

Most of the stormwater at the proposed substation site infiltrates to the ground and/or flows overland toward the seasonal swale along the western and southern perimeters of the property (ERM 2011). Surface water from the northern part of the project area (the substation site and first six or seven poles of the Fulton No. 1 60 kV line and the 12 kV line along Old Redwood highway) eventually drains into Sotoyome Creek via roadside ditches and the municipal stormwater collection system. Farther south surface water drains to Starr Creek or its unnamed tributaries. Both Starr Creek and Sotoyome Creek are part of the Russian River Watershed and connect with the Russian River west and southwest of the project area. (TRC 2012)

**Water Quality.** No data are available on surface water quality at Sotoyome Creek and Starr Creeks. Nearby Windsor Creek is also a tributary of the Russian River and is monitored by the Community Clean Water Institute (CCWI). Data collected by the CCWI in October of 2009 indicate that Windsor Creek failed to meet water quality objectives for dissolved oxygen, as well as electrical conductivity (salinity) objectives measured at a sampling point less than 1,000 feet east of the project corridor. From approximately June to October, water temperature was around 16 degrees Fahrenheit (F), while optimal temperatures for salmonids are between four and 16 F. In addition, throughout 2009, Windsor Creek pH ranged between 7 and 8, which are levels that could indicate excess algal growth. Windsor Creek met all water quality objectives at other points in 2009. It is likely that surface water quality in Sotoyome and Starr Creeks also vary throughout the year. (CCWI 2009)

**Flood Hazard Areas.** The Federal Emergency Management Agency (FEMA) designates areas that may be inundated by a 100-year storm as a Flood Hazard Area "Zone A." The proposed substation site and associated distribution line improvement areas are not located within a FEMA-designated Flood Hazard Area. The substation site is approximately 0.75 miles east of the nearest Flood Hazard Area (FEMA 2008).

**Groundwater.** The proposed substation site is underlain by the Santa Rosa Plain Subbasin, which is part of the larger Santa Rosa Valley Groundwater Basin. The Santa Rosa Plain Subbasin is drained principally by

Santa Rosa and Mark West Creeks, which flow westward and collect into the Laguna de Santa Rosa. The Laguna de Santa Rosa flows northward and discharges into the Russian River. This groundwater system is recharged through permeable surfaces, including those on the proposed substation site. The local groundwater system provides much of the supply of domestic and irrigation water for municipal, agricultural, and industrial use. (DWR 2004)

Based on surface topography, groundwater at the substation site is expected to generally flow west to southwest, toward the Russian River. Data from a nearby site suggest that shallow groundwater may be present at approximately 35 feet below ground surface (bgs) (DWR 2012). During site investigation, groundwater was found in shallow borings within five feet of the surface; however, because of recent rains at the time of the investigation it is possible that the water found in these borings was perched water that had recently infiltrated from the surface (TRC 2011).

### ***Applicable Regulations***

**Clean Water Act (CWA).** The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The proposed project area is within the jurisdiction of the North Coast RWQCB.

<sup>3/4</sup> **Section 402** of the CWA authorizes the California State Water Resources Control Board (SWRCB) to issue NPDES General Construction Storm Water Permit (Water Quality Order 99 08 DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they meet the following requirements: Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters; Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and Perform inspections of all BMPs. Projects that disturb one or more acres are required to obtain NPDES coverage under the Construction General Permits.

<sup>3/4</sup> **Section 401** of the CWA requires that any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into a State waterbody, must be certified by the RWQCB. This certification ensures that the proposed activity does not violate State and/or federal water quality standards. The limits of non-tidal waters extend to the Ordinary High Water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. The U.S. Army Corps of Engineers (USACE) may issue either individual, site-specific permits or general, nationwide permits for discharge into U.S. waters.

<sup>3/4</sup> **Section 404** of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the applicable RWQCB, which for actions under the proposed project would be the Central Valley RWQCB. When an application for a Section 404 permit is made the applicant must show it has: taken steps to avoid impacts to

wetlands or waters of the U.S. where practicable; minimized unavoidable impacts on waters of the U.S. and wetlands; and provided mitigation for unavoidable impacts.

¾ **Section 303(d)** of the CWA requires states to identify “impaired” water bodies as those that do not meet water quality standards. States are required to compile this information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of Total Maximum Daily Load (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

**National Flood Insurance Program (NFIP).** The NFIP, established by Congress in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by Flood Insurance Rate Maps (FIRMs) developed by FEMA. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance.

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq. regulates surface water and groundwater within California and assigns responsibility for implementing CWA Sections 401 through 402 and Section 303(d). It established the SWRCB and divided the state into nine regions, each overseen by a RWQCB, and requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The SWRCB is the primary state agency responsible for protecting the quality of the state’s surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs. Water quality criteria for the project study area are contained in the Water Quality Control Plan (Basin Plan) for the North Coast Region (Region 1). The Basin Plan sets water quality standards controlling the discharge of wastes to the State’s waters and land.

Even if a project does not require a federal permit (*i.e.*, a Section 401 from the USACE), it may still require review and approval by the RWQCB. As a result of a 2001 U.S. Supreme Court decision known as SWANNC, or “Solid Waste Agency of Northern Cook County,” the SWRCB issued *Guidance for Regulation of Discharges to Isolated Waters* to assist the nine RWQCBs in regulating isolated waters (SWRCB 2004). These guidelines are intended to ensure that isolated wetlands that do not fall under federal jurisdiction or State jurisdiction via California Department of Fish and Wildlife (CDFW) still are regulated under the Porter-Cologne Water Quality Control Act (Cal. Water Code Sections 13000 through 14920) and as such are treated on a priority basis by the RWQCB.

When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the “beneficial uses” associated with waters of the State. Generally, the RWQCB defines beneficial uses to include all of the resources, services and qualities of aquatic ecosystems and underground aquifers that benefit the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of water quality control measures into projects that will result in discharge into waters of the State. For most construction projects, RWQCB requires the use of construction and post-construction BMPs. In many cases, proper use of BMPs, including bioengineering detention ponds, grassy swales, sand filters, modified roof techniques, drains, and other features, will speed project approval from RWQCB. Development setbacks from creeks are also requested by RWQCB.

~~Town of Windsor Stormwater Quality Ordinance No. 2008-249. Stormwater Quality Ordinance No. 2008-249 was adopted by the Town of Windsor to protect and enhance the quality of creeks and waterways that flow through the town. The ordinance includes requirements to achieve the following: reduce pollution in stormwater consistent with the requirements of the U.S. Environmental Protection Agency, SWRCB, and RWQCB; eliminate illegal discharges; eliminate or secure approval for illicit connections to Windsor's stormwater system; remediate stormwater pollution; conduct monitoring and analysis to demonstrate compliance; and provide timely notification of spills.~~

## 5.9.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs (see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

### *a. Would the project violate any water quality standards or waste discharge requirements?*

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Surface water features within the biological/wetland survey area include perennial creeks, tributaries to Starr Creek, seasonal swale/wetlands, drainage ditch, and roadside ditches. See Figure 5.4-1 in Section 5.4 (Biological Resources) for the locations of waters and wetlands. Construction of the proposed project would involve earth-disturbing activities such as grading and excavation that would introduce the potential for erosion and sedimentation that could result in water quality degradation. This would be particularly likely if precipitation occurred during the active construction period, when soils are freshly disturbed. Water quality could also be degraded if hazardous materials such as fuels are accidentally spilled or leaked during construction. APMs are identified in Table 4-4 and have been incorporated into the proposed project design in order to minimize the potential for erosion, sedimentation, and/or accidental spills of hazardous materials. Applicable APMs are summarized below.

- ¾ **APM WQ-1** requires that BMPs be in place prior to the start of construction.
- ¾ **APM WQ-2** requires the development and implementation of a project-specific SWPPP and specifies BMPs to be included in the SWPPP to prevent erosion and sedimentation.
- ¾ **APM WQ-3** requires all construction workers to be trained to appropriately implement erosion and sediment control measures.
- ¾ **APM WQ-4** requires that all BMPs be regularly inspected to ensure effectiveness and to be inspected and repaired as needed following precipitation events.
- ¾ **APM WQ-5** requires the implementation of a Spill Prevention Control and Countermeasure (SPCC) Plan to address potential spills or accidental releases of hazardous materials such as motor oil that are commonly used during construction. The SPCC plan will include engineered methods for containing and controlling an oil release, including a water-collection system and retention pond equipped with an oil/water separator. Oil-absorbent material, tarps, and storage drums will be present on-site to contain and control any minor releases.
- ¾ **APM WQ-6** specifies the types of permits may be required if jurisdictional waters are identified within the project site.



<sup>3</sup>/<sub>4</sub> **APM WQ-7** requires feasible avoidance of wetlands, swales, and drainages during construction to minimize the potential of direct impacts to these surface water features.

<sup>3</sup>/<sub>4</sub> **APM WQ-8** requires that potentially hazardous materials used during construction would be properly handled and disposed of to avoid the potential for such materials to result in water quality degradation.

In addition to the APMs described above, **Mitigation Measure B-4** (Mitigate for any permanent impacts to wetlands or vernal pools), presented in Section 5.4, ensures that any permanent impacts to wetland or vernal pools would be mitigated through conservation of similar areas, creation of new wetlands/vernal pools, and/or purchase of mitigation bank credits. With implementation of these measures, potential impacts of project construction associated with water quality degradation that could result in the violation of a water quality standard or waste discharge requirement would be less than significant.

Operational activities associated with the proposed project that could result in water quality degradation include the potential for spills of hazardous materials from substation equipment. However, this would be minimized through the use of on-site spill prevention controls and countermeasures such as curbs, berms, and site drainage to the proposed retention basin. Because the same retention basin would be used for oil and storm water, the SPCC plan prepared in conjunction with detailed site planning would include engineered methods for containing and controlling a release from oil-filled electric equipment present at the proposed substation site, including a water-collection system and retention basin equipped with an oil/water separator. If oil is present in the basin, a vacuum truck would be used to remove the oil for offsite disposal at a permitted facility. This collection and retention system would also regulate the release of stormwater runoff from the northern portion of the proposed substation site (containing the transformers) and serve as a settling basin to reduce turbidity and sedimentation. Releases from this basin into the existing storm drain system would only be made when it is apparent no oil or sedimentation will be released with the discharge. With these preventative measures and features in place per **APM WQ-4**, operation of the proposed project would not violate any water quality standards or waste discharge requirements, and potential impacts would be less than significant.

***b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Groundwater within the Santa Rosa Plain Subbasin is recharged by infiltration of surface water flows through pervious surfaces throughout the Basin, including those within graveled portions of the proposed substation site. The existing paved surfaces on the site would be removed. Although there would be some impervious paved surfaces created by the proposed substation, the net decrease in water recharged to the overall groundwater system would be negligible.

During construction of the proposed project, PG&E would use domestic water from the Town of Windsor from wells adjacent to the Russian River for dust suppression. Table 5.9.1, below, provides a summary of water supply requirements associated with the proposed project.



**Table 5.9-1. Applicant Proposed Measures (APMs) for Hydrology and Water Quality**

Project Activity	Duration*	Gallons per Day	Total Gallons	Acre-Feet
Dust suppression and compaction during grading	3–4 weeks	10,000	150,000–200,000	0.45–0.6
Dust suppression during foundation construction	6–8 weeks	1,000–2,000	30,000–80,000	0.09–0.24
Dust suppression and compaction during underground installation	2–3 weeks	500	5,000–7,500	0.015–0.023
Dust suppression post-installation of conduits and grounds	4 months	250	20,000	0.06
<b>TOTAL</b>		<b>11,750–12,750</b>	<b>205,000–307,500</b>	<b>0.615–0.923</b>

\*Assume five working days per week  
Source: PG&E 2011-2013, Data Request Responses

The Town of Windsor manages its water supply in accordance with a Water Master Plan (WMP) that was adopted in 2000; an update to the WMP was drafted in 2009, and a Final EIR for the WMP Update was published in 2011. The Water Division of the Town of Windsor is in charge of the Town’s water system, which includes pumping and treatment of over 1.3 billion gallons of water annually (3,989.5 acre-feet per year [afy]), maintenance of over five million gallons of water storage (15.3 acre-feet), and implementation of water conservation and recycled water programs (Town of Windsor 2012a, 2012b). As noted in the table above, implementation of the proposed project would require less than one afy of water. Due to the capacity of the Town of Windsor’s water system, and the short-term nature of the project’s water requirements, no adverse effects to groundwater supply and recharge would occur as a result of the water needs shown in Table 5.9-1.

As stated in Section 4.12.3, regional groundwater occurs at a depth of approximately 80 feet, which is deeper than any excavations or borings included under the proposed project. However, Section 5.9.1 also describes that data from a monitoring well located near the proposed project site indicates that groundwater is located approximately 35 feet bgs, although shallow groundwater has been identified at five feet bgs. It is possible that shallow or perched groundwater could be encountered during construction-related excavation activities, particularly if such activities occur during the rainy season. As described in Section 4.12.3, if significant volumes of perched groundwater are encountered during excavation of horizontal directional drilling or jack and bore entrance or receiver pits, water would be evacuated using a sump pump, transferred into water storage tanks (to be sited at the proposed substation site), sampled, analyzed, transported, and disposed in accordance with all federal, state, and local regulations.

In order to ensure that BMPs identified by the California Stormwater Quality Association (CASQA) are implemented during potential dewatering activities, **Mitigation Measure H-1** would be implemented. With implementation of this mitigation measure, potential impacts of the proposed project associated with the potential to deplete groundwater supplies or interfere substantially with groundwater would be less than significant.

**Mitigation Measures for Groundwater**

**H-1 Construction Site Dewatering.** If groundwater is encountered during construction activities, dewatering shall be performed in accordance with the 2011 or most recent version of the *Construction BMP Handbook/Portal* prepared by the California Stormwater Quality Association (CASQA), and shall include, as applicable, the use of sediment traps and sediment basins.

**c. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?***

*LESS THAN SIGNIFICANT.* The project would not alter the course of any stream or river. Construction and operation of the proposed project would not substantially alter the existing drainage pattern of the proposed substation site or surrounding area. As described in Section 4.9.6 (Drainage) and above in Section 5.8.2(a) regarding water quality and permits, drainage improvements would occur under a project-specific SWPPP for NPDES compliance. The substation design would also incorporate SPCC Plan design requirements, and site grading would direct onsite drainage into the SPCC retention basin shown in Figure 4-4 (Typical Three Bank Substation). Construction activities that expose and relocate soil (e.g., grading and demolition on the proposed substation site, and pole removal and replacement) have the potential to increase sediment in stormwater runoff and increase erosion along exposed slopes and bare ground. However, also as described in Section 5.8.2(a) regarding water quality and permits, APMs would be implemented as part of the project to ensure that potential impacts associated with erosion and sedimentation would be less than significant. APMs applicable to the potential for drainage pattern alterations to result in erosion or siltation on- or off-site include **APM WQ-2** and **APM WQ-4**. Specifically, the project-specific SWPPP described under APM WQ-2 would include the following BMPs to address erosion and sedimentation:

- ¾ Silt fences or other sediment containment methods placed around and/or down slope of disturbed areas prior to construction;
- ¾ Protection of drain inlets from receiving polluted stormwater through the use of filters, such as fabrics, gravel bags, or straw wattles;
- ¾ Installation of additional silt fencing prior to construction along the northwest and south edges of the proposed substation site to address unforeseen runoff from the property into the nearby existing mitigation bank/preserve and mitigation area; and
- ¾ Use of brooms and shovels instead of water when possible to maintain a clean site.

With the implementation of these APMs, drainage pattern alterations would not result in substantial erosion or siltation on- or off-site; impacts would be less than significant with no mitigation required.

**d. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?***

*LESS THAN SIGNIFICANT.* The project would not alter the course of any stream or river. As described above, construction and operation of the proposed project would not substantially alter existing drainage patterns of the proposed substation site or surrounding area, and APMs to be implemented as part of the project would minimize or avoid potential adverse effects associated with drainage pattern alterations. During operation of the project, the majority of the proposed substation would be graveled, although there will be some impervious paved surfaces; new impervious surfaces would result in a minor reduction in infiltration capacity, and would not substantially increase the amount of surface runoff. Existing impervious paving on the site would be removed. The potential for drainage pattern alterations to result in flooding on- or off-site would be less than significant with no mitigation required.

**e. *Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?***

*LESS THAN SIGNIFICANT.* The proposed project would not substantially increase surface runoff rates such that runoff water would exceed the capacity of existing or planned stormwater drainage systems. As discussed above in Section 5.9.2(a), APMs would be implemented to minimize or avoid potential water quality degradation. Interconnecting the Fulton No. 1 60 kV line into the proposed substation and reconductoring of the existing 12 kV distribution line would not affect stormwater patterns. There would be minimal soil disturbance for the distribution line work. Impacts would be adverse, but less than significant, and no mitigation is recommended.

**f. *Would the project otherwise substantially degrade water quality?***

*NO IMPACT.* Potential degradation of water quality is addressed under Sections B.3.8.2(a) and (c) above. The proposed project would not otherwise substantially degrade water quality.

**g. *Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?***

*NO IMPACT.* The proposed project does not include the construction of any housing, is not located within a FEMA-designated Flood Hazard Area, and would not cause housing to be located within a Flood Hazard Area (FEMA 2008).

**h. *Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?***

*NO IMPACT.* The proposed project site is not located within a FEMA-designated Flood Hazard Area, and would not place structures within a Flood Hazard Area that would impede or redirect flood flows (FEMA 2008).

**i. *Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?***

*NO IMPACT.* As noted above, the proposed project site is not located within a FEMA-designated Flood Hazard Area, and the potential for the project to result in flooding on- or off-site as a result of drainage pattern alterations would be less than significant. Warm Springs Dam, which forms Lake Sonoma, is located roughly 15 miles northwest of the Town of Windsor. The inundation area associated with Warm Springs Dam (the area that would experience flooding in the case of dam failure) includes parts of the Town of Windsor, but does not include the proposed project site (ABAG 2011). There are no levees within the project vicinity that could potentially fail such that the proposed substation site would experience flooding. Neither the project itself nor the location of the project would expose people or structures to a resultant significant risk of loss, injury, or death, including as related to flooding.

**j. *Would the project cause inundation by seiche, tsunami, or mudflow?***

*NO IMPACT.* The project area is not located in an area that is subject to inundation by seiche or tsunami. In addition, due to the relatively flat topography of the proposed project area, it is not subject to mudflow. Therefore, there would be no impact.

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## 5.10 Land Use and Planning

### LAND USE PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.10.1 Setting

The proposed project is in the incorporated Town of Windsor in Sonoma County. The proposed site is west of Highway 101 and is bounded on the north by Herb Road, on the west by the Northwestern Pacific Railroad (NWPRR) right-of-way, and on the east by Old Redwood Highway. The Windsor Unified School District school bus yard is directly south of the site. The proposed Kerry Conservation Site (see Section 5.4, Biological Resources, for more) is between the vacant property west of the substation site and Promenade Lane. The substation site is zoned Service Commercial. The school bus yard to the south is zoned Public Institutional, lands to the west are zoned Estate Residential, and lands to the east on the east side of Old Redwood Highway are zoned Gateway Commercial. Lands to the north and west of Herb Road are outside of the Town of Windsor jurisdiction, in unincorporated Sonoma County. No land zoned for recreation is within 0.25 miles of the site, and no park facilities are within 0.25 miles of the site.

The adjacent parcels to the north and west each contain two single-family dwelling units. One residence is located on the east side of Old Redwood Highway (in the area zoned Gateway Commercial). The nearest homes are 60 feet north and 160 feet west of the project parcel boundary and 125 feet north and 200 feet west of the proposed substation fenceline. Homes to the north are separated from the site by Herb Road and homes to the west are separated from the site by the railroad tracks. The home to the east of the site 265 feet from the project parcel boundary and 355 feet from the proposed fenceline; it is separated from the proposed substation site by Old Redwood Highway. See Figure 4-2 for an aerial view of the site. See Figure 5.10-1 for the location of the proposed project in relation to land use designations in the General Plan. Trees and bushes line the railroad tracks and a Class II bicycle path has been proposed along the railroad tracks. See also Figure 5.12-1 for residences in the project area.

The installation of the underground distribution lines from the substation to the Fulton No. 1 60 kV line, and from the substation to Old Redwood Highway, would occur in an area zoned Service Commercial. Installation of the overhead, double-circuit distribution line under the Fulton No. 1 Power Line would primarily occur on lands zoned Surrounding Residential, with portions of the power line being adjacent to lands zoned as Estate Residential and Planned Development to the west, and lands zoned as Service Commercial, Public Institutional, Medium Density Residential, and Village Residential to the east. Reconductoring of the existing overhead and underground distribution lines along Old Redwood Highway would occur on lands zoned as Service Commercial, Gateway Commercial, and Medium Density Residential, bordered to the west by lands zoned as Public Institutional, Service Commercial, Medium Density

Residential, Service Commercial, Neighborhood Center Commercial, Town Center Commercial, and Community Commercial.

Portions of the existing Fulton No. 1 60 kV line and the existing 12-kV distribution line are located within the Windsor Station Area/Downtown Specific Plan. This planning area encompasses approximately 390 acres and is designed to promote transit oriented development in downtown Windsor and surrounding areas. The Plan was the subject of an environmental impact review and was adopted on January 18, 2012 (Town of Windsor 2012).

The proposed substation site is approximately 3.6 miles northeast of the runway at the Charles M. Schulz Sonoma County Airport. The nearest new distribution poles would be located approximately 2.2 miles north from the end of the Sonoma County Airport runway. The proposed project is outside both the Comprehensive Airport Land Use Plan Safety Zones and the Relocated Comprehensive Airport Land Use Plan Safety Zones as proposed in the Draft Environmental Impact Report for the Charles M. Schulz – Sonoma County Airport Master Plan Implementation Project (Sonoma County 2011).

The CPUC has exclusive permitting authority regarding PG&E's application to build the Windsor Substation, and no local use permit would be required. Absent CPUC involvement, this type of project would be considered a conditional use under the site's land use designation and zoning. Even though Sonoma County would not issue permits for the proposed substation and power line interconnection, several of the county's General Plan goals and policies are applicable to this analysis. The Sonoma County General Plan Land Use Element encourages growth inside city limits and discourages the extension of utilities into areas where they might facilitate growth in non-urban areas. The proposed project would be located in the Town of Windsor and would accommodate growth in a currently developed area.

The following polices in the Town of Windsor General Plan – 2015 (2011) are relevant to the proposed project:

- ¾ **B.4** Ensure that growth occurs concurrently with the provision of adequate services and infrastructure
- ¾ **B.6** Designate a range of land uses to balance residential and economic development in a manner compatible with the Planning Area's environmental resources
- ¾ **E.4.15** Utility distribution and transmission lines for all new development shall be placed underground
- ¾ **E.4.16** The Town shall encourage the use of existing transmission corridors for new lines, except in the case of electrical transmission lines over 500 kW, which for safety reasons shall be separated from existing corridors by at least 500 yards

## 5.10.2 Environmental Impacts and Mitigation Measures

### *a. Would the project physically divide an established community?*

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The proposed project would not create a barrier within the community because the surrounding public streets would remain accessible during construction. However, during undergrounding activities along Old Redwood Highway and other roadways where reconductoring would be required, the sidewalk immediately adjacent to the proposed substation site and along the distribution line would be temporarily closed. Because the sidewalks would be inaccessible during periods of underground and overhead reconductoring and during construction of the ingress to the proposed substation site, the proposed project could inconvenience neighboring residents. **Mitigation Measure LU-1** would provide nearby residents with advance notice of construction to reduce the potential inconvenience of temporary road closures. With the implementation of this mitigation measure,



the impact of the project related to physically dividing an established community would be less than significant. Sidewalks and curbs damaged during construction would be repaired or replaced.

The substation would be operated and monitored from PG&E control stations in Vacaville, California. On-site inspections and maintenance would occur monthly or as needed under emergency conditions. Inspection staff would park on the substation site or utilize on-street parking spaces; therefore, staff vehicles would not impact the public right-of-way or public access.

**LU-1 Provide advance notice of construction.**

*Advance Notice.* Prior to construction, the Applicant shall give at least ~~10~~ 30-days advance notice of the start of any construction-related activities. Notification shall be provided by posting signs along affected roadsides to tell the public about the work. The posted signs shall:

- ¾ Describe where and when construction is planned;
- ¾ Provide contact information for a point of contact for complaints related to construction activities.

Prior to commencing ground disturbing activities, the Applicant shall submit a copy of the template used for the posted sign.

*Reporting of Complaints.* The Applicant shall document all complaints and strategies for resolving complaints in regular reporting to the CPUC.

**b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

*LESS THAN SIGNIFICANT.* The CPUC has exclusive permitting authority regarding PG&E’s application to build the Windsor Substation, and no local use permit would be required. Nonetheless, the proposed project would be consistent with local zoning and the goals of the Town of Windsor General Plan Community Development Chapter.

The proposed substation site is zoned Service Commercial. The allowed uses in the Service Commercial Zoning District include “intensive personal and business service uses, including automobile repair shops, construction equipment sales and rental yards, service stations, and outdoor recreation uses.” The proposed substation would meet or exceed the performance standards established for the Service Commercial Zoning District as demonstrated in Table 5.10-1.

**Table 5.10-1. Local Zoning Development Standards**

Development Standard	Requirement	Project
Front Setback	10 feet minimum	75 feet
Side Setback(s)	15 feet adjacent to a residential zone	40 feet (south, Public Institutional) 25 feet (west, Estate Residential) 25 feet (north, unincorporated Sonoma County)
Street side (Old Redwood Highway)	0 feet	75
Rear Setback	10 feet minimum	25 feet
Height	45 feet maximum	42 feet <sup>1</sup>

1 - Height is for the substation equipment. Power line poles would exceed the height indicated.  
Source: Windsor Zoning Ordinance, Section 27.10.040, Table 2-5.

The proposed project is intended to increase reliability of the electrical grid to better serve existing and future development in the Town of Windsor. As such, the proposed project is consistent with the Land Use Element Goals LU-1 through LU-6 of the Sonoma County General Plan, which discourage growth outside of existing urban areas. The proposed project would not facilitate growth outside the existing limits of the Town of Windsor; it is intended to accommodate existing development. It would be consistent with the Windsor Station Area/Downtown Specific Plan which is designed to orient development in Downtown Windsor and surrounding areas. The proposed project is outside the Comprehensive Airport Land Use Plan Safety Zones and the Relocated Comprehensive Airport Land Use Plan Safety Zones. It would not interfere or extend into navigable airspace; therefore, no airport-related land use impacts would occur as a result of the project.

Although discretionary local approval is not required for the proposed project, it is consistent with the local land use policies described above. Therefore, impacts resulting from conflicts with local land use plans and policies would be less than significant.

***c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The proposed substation site, Fulton No. 1 60 kV Power Line, and existing 12-kV distribution line are located within the study area boundary for the Santa Rosa Plain Conservation Strategy (SRPCS), but are not within a conservation area. The SRPCS was established by United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFW), and local jurisdictions to help promote appropriate development, while minimizing and mitigating for the loss of habitat for the Sonoma population of California tiger salamander and four listed plant species (USFWS 2005). There is a proposed preserve, the Kerry Conservation Site, between the vacant property west of the proposed substation site and Promenade Lane (see Figure 5.4-1). Two poles of the Fulton No. 1 60 kV Power Line are located in the proposed Kerry Conservation Site.

In January 2012, CDFW indicated that the title to 3.4 acres of this parcel will be transferred to CDFW. As of May 2012, the Kerry Conservation Site is on hold as a result of funding constraints (PG&E 2011-2013). Numerous APMs and mitigation measures for biological resources, including Mitigation Measure B-2 (Preserve special-status plants, wetlands and vernal pools) would reduce potential impacts to listed plant habitat on the Kerry Conservation Site. These APMs are listed in Section 5.4.2(f). ~~In addition, Mitigation Measure B-5 requires agency coordination and approval of a plan for all construction and maintenance activities within the preserve area.~~ With implementation of these measures, proposed project conflicts with the Santa Rosa Plain Conservation Strategy would be less than significant.

## 5.11 Mineral Resources

### MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.11.1 Setting

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the State Geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land. The chief minerals found and extracted in the project area are aggregates derived from river deposits and used for concrete and high-quality base and fill. Aggregates in the area are mainly found along the Russian River and other major streams. Project components are not in a classified MRZ, and there are no known important mineral resources or active mining operations in the immediate vicinity of the substation site (PG&E 2010 and 2011). According to the Sonoma County Aggregate Resources Management Plan (1994) there are no known economically viable sources of rock materials in the immediate project area.

### 5.11.2 Environmental Impacts and Mitigation Measures

**a. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?***

*NO IMPACT.* There are no known important mineral resources that would be impacted by the project. There are no designated Mineral Resource Zones in the project vicinity. Therefore, the project would have no impact on mineral resources.

**b. *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?***

*NO IMPACT.* There are no known important mineral resources that would be impacted by the project. There are no designated Mineral Resource Zones in the project vicinity. Therefore, the project would have no impact on any locally important mineral resource recovery sites.

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## 5.12 Noise

### NOISE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.12.1 Setting

#### Existing Conditions

**Community Noise.** A measurement scale that simulates human perception is used to describe environmental noise and to assess project impacts on areas that are sensitive to community noise. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perception of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The L<sub>50</sub> is the median noise level that is exceeded fifty per cent of the time during any measuring interval. The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. To estimate the day-night level caused by any noise source emitting steadily and continuously over 24-hours, the Ldn is 6.4 dBA higher than the source's Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels are usually closely related to the intensity of human activity. Noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. Sleep interference effects become considerable at 70 dBA (U.S. EPA 1974).

**Noise Environment in the Project Area.** The proposed substation is located in an area zoned for Service Commercial (SC) development (Town of Windsor 2005). Nearby residential uses are located approximately 265 feet east, 160 feet west, and 60 feet north from the substation parcel boundary and 355 feet east, 200 feet west, and 125 feet north of the substation fenceline. Existing ambient noise levels were measured for seven continuous days in front of the proposed substation site along Old Redwood Highway. Noise measurements collected by PG&E in April 2011 identified a CNEL of 65.5 dBA and an Ldn of 64.9 dBA. The L<sub>50</sub> and L<sub>90</sub> were measured at 53.1 dBA and 43.6 dBA, respectively (PG&E 2011).

**Noise Sensitive Areas.** Noise sensitive receptors include residences, schools, religious facilities, hospitals, and parks (see Figure 5.12-1 for a map of nearby sensitive receptors). Open space is considered noise sensitive if it is used for passive, rather than active, recreation. The nearest single family residences are 60 feet north of the proposed substation parcel boundary, approximately 25 feet west of the reconductoring locations along Old Redwood Highway, and immediately adjacent to the Fulton No. 1 60 kV line. The nearest school is Windsor Christian Academy, which is 2,100 feet from the substation site. The school has a sports field 60 feet from the Fulton No. 1 60 kV line and school buildings 500 feet from the line. The Windsor Town Green and Los Robles Park are approximately 225 and 400 feet, respectively, from the reconductoring along Old Redwood Highway.

## Applicable Regulations

Regulating environmental noise is generally the responsibility of local governments. In 1974 the U.S. EPA published guidelines on recommended maximum noise levels to protect public health and, and the State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor's Office of Planning and Research (OPR 2003). The following summarizes the local requirements.

**Sonoma County General Plan.** Although all project elements are within the Town of Windsor, the substation is positioned at the northern border of the town, adjacent to unincorporated Sonoma County land. The Sonoma County General Plan is the relevant regulatory document for these unincorporated areas. The Sonoma County General Plan 2020 was updated last in 2008. The updated General Plan includes a Noise Element that provides a policy framework for addressing potential noise impacts encountered during the planning process (Sonoma County 2008). The Sonoma County General Plan states in Table NE-2 that the maximum allowable sound level exposure from non-transportation noise



sources during 10 p.m. to 7 a.m. is 45 dBA  $L_{50}$ , with a 5 dBA penalty for pure-tone noise; however, there are provisions in the General Plan for adjustment of the limit upward in consideration of the existing ambient noise level. In this case, the allowable limit is taken to be the measured ambient sound level, or 53.1 dBA  $L_{50}$  plus a minimum significant change of +1.5 dBA. (Policy NE-1c of Sonoma County General Plan 2020).

**Town of Windsor General Plan.** The goals for controlling community noise outlined in the General Plan (Town of Windsor 2011) include ensuring that residents of Windsor are protected from excessive noise. The policies specifically address the following: planning and designing new development in a way that minimizes noise impacts on neighboring noise sensitive areas, minimizing noise interference from outside sources, and controlling and abating activities that exceed desirable sound levels (Town of Windsor 2011). Policies for reducing noise include encouraging developers to design and construct aesthetic sound attenuation devices adjacent to noise sources to increase absorption of noise. The Town of Windsor General Plan (2011) Noise Element refers to the Land Use Compatibility for Community Noise Environments (Office of Noise Control, California Department of Health) which specifies that community noise exposure of under 60 Ldn is “normally acceptable”<sup>12</sup> for a low-density residential areas and up to 70 Ldn is “conditionally acceptable”<sup>13</sup> for planning purposes within residential areas, provided that adequate noise attenuation has been incorporated into the project, or that other measures are proposed to protect future sensitive receptors.

**Town of Windsor Zoning Ordinance.** The Windsor Zoning Ordinance (Section 27.20.030) discusses maximum (not CNEL) noise levels in terms of receiving land uses (land use in which the listener is located) and time of day (Town of Windsor 2009). The exterior limits in residential areas and open space areas are 50 dBA during nighttime hours (10:00p.m. to 7:00 a.m.) and 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.). For industrial lands, the exterior limit is 70 dBA. The Zoning Ordinance exempts from the noise limitations construction operations conducted by public utilities or their contractors which are deemed necessary to serve the best interests of the public and to protect public health, safety, and welfare (Town of Windsor 2009).

**Town of Windsor Municipal Code.** The Town of Windsor Municipal Code (Section 7.1.190) states that construction, alteration or repair activities which are authorized by Windsor may be conducted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays, and between 8:00 a.m. and 7:00 p.m. on Saturdays. No construction, alteration or repair activities shall be permitted on Sunday unless specifically authorized by the Town; if approved, such activities shall not be permitted on Sunday before 9:00 a.m. and after 5:00 p.m. unless specifically authorized by the Town (Town of Windsor 2009).

## 5.12.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement measures during the design, construction, and operation of the proposed project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the proposed project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the proposed project as described in this document, including this project description and the APMs

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<sup>12</sup> “Normally acceptable” means that specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

<sup>13</sup> “Conditionally acceptable” means that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

(see Table 4-5 in the Project Description), as well as any adopted mitigation measures identified by this Initial Study.

*a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

*LESS THAN SIGNIFICANT.* Construction of the proposed project would involve use of trucks, bulldozers, excavators, drill rigs, graders, compactors, cranes, compressors, generators, and other equipment primarily at or around the proposed substation site. Construction at the proposed substation site may occur within 60 feet of the nearest residences, based on the site property boundary. All substation construction traffic, including deliveries of transformers, would gain access to the proposed site from Old Redwood Highway and Herb Lane. Noise levels for typical pieces of construction equipment (at 50 feet) that would be used are listed in Table 5.12-1.

All construction activities, including those for the proposed substation site and distribution line work and any staging areas, would create both intermittent and continuous noises. Intermittent noise would result from periodic, short-term equipment operation, such as cranes for positioning equipment or drill rigs use during installation of the underground distribution lines. Continuous noise would result from steady equipment operation over longer periods, such as mixer or generator use. The maximum intermittent construction noise levels would range from 81 to 85 dBA at 50 feet from an active construction area (PG&E 2010). Sound from stationary sources decreases by six dBA with every doubling of distance from the source. At a distance of 300 feet between the noise source and the receiver, the maximum noise level would be below 69 dBA and be less than the “conditionally acceptable” range deemed appropriate by the General Plan (Town of Windsor 1995). For this reason, sensitive receptors beyond 300 feet would not be impacted by construction noise, and are not considered in this analysis (see Figure 5.12-1 for a map of nearby sensitive receptors).

The nearest residential properties to the project substation site are approximately 60 feet from the substation parcel boundary. At this distance, noise levels from construction activities generated at the proposed substation site could potentially reach an Leq of 83.4 dBA. Significance criteria for construction-related noise are not currently established because of the temporary nature of noise generated by construction activities. However, as stated above, according to the Town of Windsor General Plan Noise Element, a CNEL level of 70 dBA is considered “conditionally acceptable” for residential areas. Thus, noise levels at the substation site could potentially exceed acceptable levels, creating significant impacts. Much of the construction would occur at the substation location, which would be a minimum of 125 feet from the nearest residences. At this distance, the maximum Leq would be approximately 77 dBA. Noise at and above this level would be infrequent and non-continuous. Existing mature trees along the northern and western borders of the proposed substation site create an obstacle for sound waves and would attenuate noise to a lower level. APMs were developed by the applicant in order to avoid and minimize potential impacts to sensitive noise receptors (see Table 5.12-1). When considered with existing vegetation screening, the focal area of construction activities, and the incorporation of **APM Noise-1 through APM Noise-5**, noise generated from construction at the substation site would be less than significant. These APMs would limit construction hours to 7:00 am to 7:00 pm Monday through Saturday to the extent feasible, would minimize unnecessary idling and noise, and would require locating stationary construction equipment as far from sensitive receptors as is practical.

Construction activities associated with reconductoring of the distribution line and pole replacement would also occur along Old Redwood Highway, Wilcox Road, and other small road segments along the railroad corridor. Construction activities at these locations would be temporary. Although no noise measurements

were conducted along the reconductoring or pole replacement path, existing ambient noise levels near the existing 12 kV power line are likely to be relatively high due to the proximity of Old Redwood Highway and Highway 101.

According to the General Plan (Town of Windsor 1995) vehicle traffic is the dominant noise source in Windsor, and noise generated by vehicular traffic is greatest along Highway 101. During reconductoring, noise would be intermittent from equipment used to install and remove poles and from equipment used to pull the new conductors. Even when instantaneous levels could be as high as 85 dBA during such activities as auguring a hole for a replacement pole, the hourly Leq would still be less than 70 dBA (PG&E 2010). Therefore, reconductoring and pole replacement noise impacts would be less than significant.

Construction would also cause noise offsite, primarily from commuting workers and from trucks needed to bring materials to the substation site. The peak noise levels associated with passing trucks and commuting worker vehicles would be approximately 76 dBA at 50 feet, and would be concentrated along the major arterial streets, especially Old Redwood Highway, and rural streets, especially Herb Road, leading to the substation site.

As described in **APM Noise-2**, construction of the substation and transmission line would adhere to the noise ordinance provisions set by the Town of Windsor, which permit construction activity near sensitive noise receptors between the weekday hours of 7:00 a.m. and 7:00 p.m. and on Saturday between the hours of 8:00 a.m. and 7:00 pm. This would minimize the likelihood of construction noise complaints. Construction activities that would occur during the daytime would not cause a violation of the local standards. It may be necessary to perform certain construction activities during nighttime hours due to clearance restrictions on the power line. Should the need to work outside the time permitted in the local ordinance arise, PG&E would need to obtain a variance from the Town of Windsor.

In order to ensure that all construction activities, especially equipment and vehicle noise, comply with local ordinances and standards, **Mitigation Measure N-1** and **APM Noise-1, 3 and 4** would be implemented to reduce noise from vehicles and construction traffic. Considering the short-term and temporary nature of the construction activities and the recommended mitigation measure, noise impacts during construction would be less than significant.

### Mitigation Measures for Construction Noise

**N-1**      **Avoid unnecessary construction traffic noise.** Where feasible, construction traffic shall be routed to avoid noise-sensitive areas, such as residences, schools, religious facilities, hospitals, and parks.

**Table 5.12-1. Typical Noise Levels for Construction Equipment**

Equipment	Typical Noise Levels (dBA, at 50 feet)
Backhoes, excavators	80-85
Concrete pumps, mixers	82-85
Cranes (movable)	81
Pick-up truck	55
Dump truck	76
Equipment/tool van	55
Dozer	82
Compactors	82
Water truck	76
Grader	85
Drill rigs	70-85
Pneumatic tools	85
Rock transport	76
Roller	80
Hole auger	84
Line truck and trailer	55

Sources: Adapted from U.S. EPA 1972

*LESS THAN SIGNIFICANT DURING OPERATION.* For long-term noise impacts associated with operations of the proposed project, refer to Section 5.12.2(c), below.

***b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?***

*LESS THAN SIGNIFICANT.* Vibration from construction equipment and activities might be perceptible to people in the immediate vicinity of construction activities. Tamping of ground surfaces, the passing of heavy trucks on uneven surfaces, and drilling would each create perceptible vibration in the immediate vicinity of the activity. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site. The impact from construction-related groundborne vibration would be short-term and confined to only the immediate area around the activity (within about 50 feet) (PG&E 2010). As all proposed non-intermittent construction activities would occur 60 feet or further from any occupied structure, the impact would be less than significant.

***c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?***

*LESS THAN SIGNIFICANT.* The permanent noise sources that would result from the project are limited to transformer operation at the substation, corona noise from energized transmission lines, and noise from crews conducting routine inspection and maintenance of the substation. Noise sources less than 60 dBA Ldn would be “normally acceptable” according to the Town of Windsor General Plan (Town of Windsor 2011). This would be equivalent to a maximum continuous level of 53 dBA Leq. Operation and maintenance activities with levels less than 53 dBA Leq would be considered less than significant.

Detailed SoundPLAN (Braunstein + Berndt GmbH) noise models were used to predict noise resulting from the operation of a three-bank substation, containing three 30-megavolt ampere (MVA), 115-12 kilovolt (kV) transformers, at the proposed substation site. The modeled decibel range at varying distances from the transformers is shown in Figure 5.12-2 (Transformer Sound Model Plot). At full build-out of Windsor Substation, three transformers would be expected to emit approximately 72 A-weighted decibels (dBA) at a distance of 3 feet from the transformers with fans operating. With no sound reduction treatment, estimated transformer noise at the substation boundary would be a maximum of approximately 50 dBA and estimated transformer noise at the closest property fence line (160 feet west of the transformer) would be a maximum of approximately 46 dBA Leq. Sound reduction treatment consisting of prefabricated 10 feet tall perimeter walls on the north, east, and west sides of the substation would reduce the maximum level of noise to a maximum of less than 47 dBA at the substation boundary and less than 41 dBA Leq at the closest property line of the nearest sensitive receptor. See Figure 5.12-2 for more detail on sound levels surrounding the transformer bank.

These levels are below the maximum allowable limit for continuous noise (53 dBA Leq) under the Town of Windsor’s General Plan. Measurements collected by PG&E found the existing  $L_{50}$  level at the edge of the substation property boundary is 53.1 dBA, and the existing ambient 24-hour day-night level is 64.9 dBA Ldn (PG&E 2011). Because the project would generate less than 41 dBA Leq at the property line of the nearest sensitive receptor, the project would not exceed the ambient levels, and the increase in  $L_{50}$  and Ldn noise levels would not be noticeable. The project would be allowed under the Sonoma County General Plan’s noise policies because the project-related change would be less than +1.5 dBA. Therefore, under both Town and County standards, operation and maintenance-related noise impacts would be less than significant.

Corona noise is a phenomenon associated with all energized transmission lines. Corona is the physical manifestation of energy loss, and can transform discharge energy into very small amounts of sounds, radio noise, heat, and chemical reactions of the air components. Transmission lines generate a small amount of sound energy during corona activity. This audible noise caused by corona is usually not an issue for power lines rated at 230-kV and lower voltages. The conductor size selected for the proposed project's power line is sufficient so that little or no corona activity would exist under most operating conditions (PG&E 2010). Computer modeling software developed by the Bonneville Power Administration (BPA) indicates that during wet weather conditions audible noise levels of approximately 46.6 to 49.6 dBA would occur within the right-of-way for a similar transmission line loop operating at 230 kV (PG&E 2010). As the project power line would ultimately operate at 115 kV, actual audible noise levels from corona activity will be less than those modeled. These calculated levels are below those required by the Windsor General Plan (60 dBA) as well as the U.S. Environmental Protection Agency (EPA) outdoor activity noise guideline of 55 dBA, and are similar to the range of audible noise levels measured in general rain conditions (41-63 dBA). Under fair weather conditions, the calculated audible noise levels are approximately 21.6 to 24.6 dBA within the ROW for a similar transmission line loop operating at 230 kV (PG&E 2010). Audible noise would decrease with distance away from the proposed transmission line loop. Due to all of these factors, impacts from corona noise would be less than significant for a line operating at 115 kV or under. Therefore, the noise of the substation equipment would comply with the Town of Windsor General Plan (2011), and impacts would be less than significant.

Routine inspection and maintenance of the proposed project would be accomplished through periodic visits to the substation site. Visits to the substation would not normally involve a large crew. Additional noise produced at the substation may occur during activation of circuit breakers. Because each of these noise sources would be infrequent and isolated, no substantial noise increase would occur, and impacts would be less than significant.

***d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?***

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Noise impacts associated with construction equipment would mainly affect those receptors closest to proposed reconductoring and pole replacement routes. Existing homes would experience a temporary increase in noise. As stated above, even when levels could briefly be as high as 85 dBA during construction activities, the hourly Leq would still be less than 70 dBA (PG&E 2010). In addition, the short-term and intermittent nature of construction noise would limit the impacts. Compliance with the Windsor (2011) Noise Element, **Mitigation Measure N-1** and **APMs Noise-1-5** would reduce the effects of noise caused by construction equipment and traffic. With the mitigation and APMs Noise-1-5, impacts would be less than significant.

***e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

*NO IMPACT.* The proposed substation site is located approximately 5.5 miles north of the Sonoma County Airport. According to the Town of Windsor General Plan Figure 7.5, the substation site and associated electric line segments lie outside of the 55 dBA CNEL isopleth for the Projected Noise Contours resulting from the operation of the Charles M. Schulz Sonoma County Airport. No excessive noise would result from Sonoma County Airport operations, and there would be no impact.

*f. For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?*

*NO IMPACT.* The proposed project is not located within the vicinity of a private airstrip. The nearest private air strip is the Graywood Ranch Airport (CA39), approximately 17 miles from the substation site.



## 5.13 Population and Housing

### POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.13.1 Setting

The population and housing study area for the proposed project includes the Town of Windsor in Sonoma County. U.S. Census Bureau 2011 data for population, housing, and employment for the Town of Windsor, and Sonoma County, are presented in Table 5.13-1.

**Table 5.13-1. Year 2011 Existing Conditions – Population, Housing, and Employment: Town of Windsor and Sonoma County**

Location	Population	Housing Units		Employment
		Total Units	Vacancy Rate	Total Employed <sup>1</sup>
Town of Windsor	26,801	9,549	6.06%	11,400
Sonoma County	483,878	204,572	9.16%	230,900

1 - Accounts for population greater than 16 years of age and in Labor Force

Source: California Employment Development Department 2011; California Department of Finance 2011

### 5.13.2 Environmental Impacts and Mitigation Measures

- a. *Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

*NO IMPACT.* Construction activities resulting from project implementation would be short-term and temporary. The proposed project would be constructed by local PG&E crew members, who would commute to the project area from the surrounding area. Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over six to seven months. The proposed project would generate neither a permanent increase in population levels, nor a decrease in available housing. No impacts to existing or future population growth levels would occur as a result of construction of the proposed project.

Operation of the proposed substation would be automated, requiring no additional employees; however, routine inspections by PG&E crew members would be required. No direct population growth would be induced because the proposed project would not involve the construction of housing and no new jobs would be created. Implementation of the project would not generate a direct increase in the permanent population of the area.

The purpose of the proposed project is to address the electric system deficiency projected to occur in Windsor and to ensure safe and reliable electric service (PG&E 2010). Development and growth depend on reliable electrical infrastructure, but electric service would not cause population growth either directly or indirectly. The proposed project would not induce population growth directly or indirectly, and associated impacts would not occur.

***b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?***

*NO IMPACT.* No housing currently exists within the proposed substation site, existing rights-of-way for the distribution line work, or work areas, although distribution lines do pass through the yards of private residences. Implementation of the proposed project would not result in the displacement of any housing, including affordable housing, or necessitate the construction of replacement housing. Therefore, no impacts would occur.

***c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?***

*NO IMPACT.* As stated in Section 5.13.2(b) above, there is no existing housing within the proposed substation site or distribution line areas. Therefore, the project would not result in the displacement of people or necessitate the construction of replacement housing elsewhere, and no impacts would occur.

## 5.14 Public Services

### PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.14.1 Setting

Fire and police departments as well as school districts, parks and recreational areas, and other public services are provided by the Town of Windsor, special districts, and private entities. Table 5.14-1 lists applicable public service providers to the project area. The Windsor Fire Protection District (WFPD) provides fire protection to the project area. WFPD is staffed with 16 full-time personnel and has two stations within the Town of Windsor. The staff is supplemented with on-call volunteer personnel. The Windsor Police Department is staffed by the Sonoma County Sheriff Department through a contract between the Town and the County. There are 23 full-time Sonoma County Sheriff Department employees in the department, which provides police protection to the project site and the surrounding area (Town of Windsor 2011a). The department is located approximately 1.4 miles south of the proposed substation. The Windsor Unified School District (WUSD) serves Windsor and includes eight schools (WUSD 2011). There are 19 town parks and 3 County Regional Parks within Windsor (Town of Windsor 2011b). The proposed substation would be located 0.75 miles north of Los Robles Park.

**Table 5.14-1. Service Providers**

**Fire Protection** – Windsor Fire Protection District (8200 Old Redwood Highway, north of Highway 101)  
**Police Protection** – Windsor Police Department, (9291 Old Redwood Highway)  
**Hospitals** – Santa Rosa Memorial Hospital (1165 Montgomery Drive, Santa Rosa); Kaiser Foundation Hospital (401 Bicentennial Way, Santa Rosa)  
**Schools** – Windsor Unified School District

Sources: PG&E 2010; Windsor Fire Protection District 2011; Windsor Unified School District 2011; Town of Windsor 2011a.

### 5.14.2 Environmental Impacts and Mitigation Measures

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

**a) Fire protection?**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Construction activities would not increase the demand for fire protection services or result in the need for new or altered facilities. Fire risk would be not

greater than at any other construction site. Following construction, operation of the substation could result in instances requiring fire protection services. However, the California Fire Code and Uniform Building Code require the proposed project to include fire protection features, including unobstructed access. Fire risk would be comparable to that from other existing electrical infrastructure in the area, and this would not create the need for new or physically altered fire protection facilities. The operation of the substation would not affect the ability of fire personnel to respond to fires.

There may be increased vehicle traffic and brief road closures (10 to 15 minutes maximum) during construction on distribution lines that are within or adjacent to existing roadways. This could temporarily affect access routes and emergency vehicle movement. However, traffic control would accommodate emergency service providers at all times. With the implementation of **Mitigation Measure T-2** (Ensure emergency response access), described in full in Section 5.16 (Transportation and Traffic), impacts related to fire protection and emergency response would be less than significant.

**b) Police Protection?**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Construction activities would not increase the demand for police protection services in the area. For security, the proposed substation would include a 10 foot tall perimeter wall on the north, east, and west sides of the substation. The construction and operation of the substation would not result in a need for additional police facilities. With the implementation of **Mitigation Measure T-2** (Ensure emergency response access), described in Section 5.16 (Transportation and Traffic), impacts related to police emergency response would be less than significant.

**c) Schools?**

*NO IMPACT.* Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over ~~four to five months~~ six to seven months. These construction personnel would likely commute to the site from within Sonoma County or nearby counties and would not create a permanent change in local population. Upon completion, the proposed substation would be automated and require no additional PG&E employees for operation. Since the proposed project would not increase the local population, no increase in demand for school facilities would occur, and no new school facilities would be required.

**d) Parks?**

*NO IMPACT.* As described in Section 5.14.2(c) above regarding schools, the proposed project would not increase the region's population. Consequently, the project would not increase any long-term demands on existing parks in the project area, and no new or expanded park facilities would be required because of the proposed project. See Section 5.14, Recreation, for further discussion the proposed project's potential impacts to other recreational facilities.

**e) Other Public Facilities?**

*NO IMPACT.* The proposed project would not increase population and would not affect other governmental services or public facilities so as to require new or expanded facilities be developed. Therefore, no impact on other public facilities is expected.

## 5.15 Recreation

### RECREATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.15.1 Setting

The nearest park to the proposed substation site is Los Robles Park, 0.75 mile south of the proposed substation site and approximately 400 from the transmission line reconductoring on Old Redwood Highway and 600 feet from pole replacement on the Fulton No. 1 60 kV line. The Windsor Town Green is within 225 feet of the reconductoring on Old Redwood Highway and 1.5 miles from the proposed substation site.

### 5.15.2 Environmental Impacts and Mitigation Measures

**a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***

*NO IMPACT.* As described in Section 5.12, Population and Housing, the proposed project is not expected to induce short-term or long-term population growth during project construction or operation. There would be no permanent on-site employees. As such, there would be no increased use of recreational resources.

The proposed project is in close proximity to the proposed Class I and Class II bicycle routes (Sonoma County Transit Authority 2008). These have not yet been developed and thus are outside the scope of this analysis. However, construction of the substation and distribution infrastructure would not limit the use of these routes. Los Robles Park, 0.75 miles from the proposed substation site, is currently situated amid a mixture of residential and industrial land uses (Town of Windsor 2005); the proposed project would not change the existing landscape surrounding this park. Reconductoring on Old Redwood Highway, 225 feet from the Windsor Town Green, would not change the existing landscape surrounding this park. Any lane closures along Old Redwood Highway would be brief, and multiple routes to access the park exist; therefore, access to the park would not be interrupted by construction. The park is far enough from the substation site and transmission lines that recreational opportunities in the park would not be impacted by the proposed construction or operations, and notifying park users of the proposed project would not be required.

Overall there would be no impacts to recreational opportunities or facilities in the project area.

**b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?***

*NO IMPACT.* The proposed project does not include recreational facilities and would not require the construction of new facilities or the expansion of existing recreational facilities. As such, the proposed project would have no adverse physical effects on the environment resulting from recreational facilities.

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## 5.16 Transportation/Traffic

### TRANSPORTATION AND TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.16.1 Setting

During construction, access to the substation site and the power and distribution lines would be via Highway 101, Old Redwood Highway, Arata Lane, Starr Road, Gumview Road, and Herb Road (public section). Other minor side streets would be used for short-term access to individual pole locations, including Dawn Way and Godfrey Drive. The exact locations of pull and tension sites would depend on city traffic permits and permission from property owners. PG&E anticipates using two pull and tension sites for Circuit 1 and seven pull and tension sites for Circuit 2. For Circuit 1 the approximate sites would be Starr Road where it intersects the Fulton No. 1 60 kV Power Line, and Windsor River Road where it intersects the Fulton No. 1 60 kV Power Line. The approximate pull and tension site locations for Circuit 2 would be Old Redwood Highway just east of the substation site and Old Redwood Highway near the intersections with Starr Road, Arata Lane, Rio Ruso Drive, Dawn Way, Godfrey Drive, and Windsor Road (PG&E 2011-2013).

Old Redwood Highway borders the project substation site to the east; access to the substation site parcel would be directly off of Old Redwood Highway via ~~a newly installed curb cuts and driveways~~ and future curb cuts on the east side of the parcel. Figures 4-3 and 4-4 (in Appendix C) depict the existing streets and roadways in the project vicinity. Distribution line installation may require both general access and additional workspace within Old Redwood Highway, Starr Road, Gumview Road, Herb Road, and minor access roads leading to individual pole locations on the Fulton No. 1 60 kV Power Line (PG&E 2011).

The Sonoma County General Plan 2020, Circulation and Transit Element and the Town of Windsor General Plan provide assessments of the level of service (LOS) on roads within their respective jurisdictions. 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 represents conditions ranging from unrestricted traffic flow (A) to extreme traffic congestion (F).

The Circulation Element of the Sonoma County General Plan includes the following objectives (Sonoma County 2008):

- ¾ Objective CT-3.1 requires a LOS of C or better on roadway segments unless a lower LOS has been adopted;
- ¾ Objective CT-3.2 requires maintenance of a LOS of D or better at roadway intersections;
- ¾ Objective CT-3.3 allows these levels of service to be exceeded if it is determined to be acceptable due to environmental or community values, or if a project has an overriding public benefit that outweighs the lower level of service and increased congestion.

The Town of Windsor General Plan (1995, 2009 update) includes the following policies related to transportation and circulation:

- ¾ **Implementation Standard D.4, Level of Service Standards**, states that the Town shall adopt a level of service standard D for Crosstown Streets and signalized intersections, but that the Town shall recognize that reducing congestion must be balanced against improvement costs and community character concerns;
- ¾ **Implementation Standard D.7, Traffic Mitigation Fee**, states that the Town should collect Traffic Mitigation Fees from new development to finance transportation improvements.

## Highways

Major north-south access to the project area is provided by Highway 101, which connects Windsor and the greater Santa Rosa area with the Bay Area and California's north coast. It runs less than 0.25 miles east of the proposed project site, and the nearest highway off-ramps are 0.4 miles to the south. The segment of Highway 101 in Windsor is four lanes with a daily traffic volume of 66,000 vehicles and peak-hour LOS of less than C (PG&E 2011). Sonoma County has a LOS objective of D for the segment of Highway 101 north of Windsor River Road (Sonoma County 2008). Additionally, Highway 101 has opened up third travel lanes in each direction (operating as High Occupancy Vehicle lanes) between northern Santa Rosa and Windsor.

A number of projects are planned in proximity to the proposed project and would likely require use of Highway 101 for construction traffic (see Table 5.16-1). However, construction schedules for most of these projects are not yet known (PG&E 2011-2013, Data Responses).

**Table 5.16-1. Planned Projects in the Vicinity of the Proposed Windsor Substation.**

Project Name	Address	Proximity to Substation Site	Type of Development	Description	Size (approx.)	Status <sup>2</sup>	Anticipated Construction Schedule
Sanderson Ford	10920 Old Redwood Hwy	0.20 mile	Nonresidential	Auto dealership	7 acres	AU	Unknown
LaFranchi Retail	8779 Conde Lane	2 miles	Nonresidential	Retail	8.5 ksf <sup>1</sup>	P	Unknown
Los Robles Meadows 1 & 2	9885 Old Redwood Hwy	1 mile	Residential	Single-family detached	Unknown	Unknown	Unknown
Cole Subdivision	9885 Old Redwood Hwy	0.70 mile	Residential	20 single-family attached/11 single	Unknown	N/A	Project Withdrawn

**Table 5.16-1. Planned Projects in the Vicinity of the Proposed Windsor Substation.**

Project Name	Address	Proximity to Substation Site	Type of Development	Description	Size (approx.)	Status <sup>2</sup>	Anticipated Construction Schedule
Columbo	10095 Old Redwood Hwy	0.80 mile	Residential	Single-family detached	Unknown	N/A	Project Withdrawn
Coate Minor Subdivision #3	450 Duncan Drive	2 miles	Residential	Single-family detached	Unknown	Unknown	Unknown
Coate Minor Subdivision #4	475 Ginny Drive	2 miles	Residential	Single-family detached	Unknown	Unknown	Unknown
Town Green Village 5	8900 Bell Rd	1.70 miles	Mixed use	66 single-family detached (condos) over 30.4 ksf <sup>1</sup> retail	Unknown	Unknown	Unknown
Windsor Mill	8777 Bell Rd	1.90 miles	Mixed use	53 single-family detached, 23 live/work townhomes, 127 single-family attached	Unknown	Unknown	Unknown
Village at Windsor	8975 Conde Lane	1.90 miles	Mixed use	16 single-family detached (condos) over 12.1 ksf <sup>1</sup> retail	Unknown	Unknown	Unknown
Windsor Gateway	9397 Old Redwood Hwy	1.40 miles	Mixed use	152 single-family detached (condos) over 40 ksf <sup>1</sup> retail	Unknown	AU	Unknown
Bell Village Project	9290 Old Redwood Hwy	1.27 miles	Mixed use	403 residential units (condos and townhouses; 77.6 ksf <sup>1</sup> retail	27.18 acres	AU	Unknown

1 - ksf = thousand square feet

Sources: Town of Windsor Planning Department 2007, Jones 2011

2 - Status:

- C A project application is anticipated
- P The project is pending in the formal application review process
- AU The project application has been approved, but no known construction schedule yet
- AK The project application has been approved and there is a construction schedule
- U The project is under construction
- Unknown No reply from phone call to project proponent and status is unknown to Windsor planning staff

Two projects, the Charles M. Schultz/Sonoma County Airport Master Plan and gravel mining along the Russian River near Geyserville would likely require use of Highway 101 during the proposed substation project construction schedule, beginning in ~~December 2014–February 2014~~. The Airport Master Plan construction and would require a work force of from 10 to 60 people and a maximum delivery truck round trips per day of 70 during 110 working days (Sonoma County 2011). As of June 2013 that construction has not begun; it is anticipated to begin in August 2013. The proposed gravel mining is expected to increase traffic volumes on Highway 101 north of Healdsburg until 2025; however, the project would not result in a degradation of traffic conditions on Highway 101 below the existing LOS of C (Sonoma County 2010).

The Level of Service for Highway 101 and other roads that would be used during project construction and operations is presented in Table 5.16-2.

**Table 5.16-2. Level of Service for Roadways in the Proposed Project Vicinity**

Roadway	Lanes	Classification	Daily Traffic Volume	Peak-Hour Level of Service
Highway 101 (between Arata Lane and Windsor Road Exit)	4	Highway	66,000	Less than C
Old Redwood Highway (Arata Lane to Starr Road)	2	Arterial	3,172 to 6,269	A to C
Starr Road (Windsor River Road to Old Redwood Highway)	2	Collector	7,100	A/B
Gumview Road	2	Local	< 2,000	A/B
Herb Road	2	Local	< 2,000	A/B
Arata Lane	2	Collector	5,000	A/B
Dawn Way	2	Local	< 2,000	A/B
Godfrey Drive	2	Local	< 2,000	A/B

Source: PG&E 2011.

### Arterial Highways and Other Roads

Two major arterial highways, Old Redwood Highway and Arata Lane, and three rural roads, Starr Road, Gumview Road, and Herb Road, provide general access to the site. Dawn Way and Godfrey Drive, two rural roads, would provide access to individual pole locations. Starr Road, Windsor River Road, and Old Redwood Highway would provide access to pull and tension sites.

Old Redwood Highway runs north to south, parallel to Highway 101 and provides access to the site. It has a LOS ranging from A to C in the project vicinity and average daily traffic volume of 3,172 to 6,269 vehicles. Arata Lane runs east to west crossing under Highway 101 at 0.5 miles from the project site. It connects Old Redwood Highway (to the west) with local roadways east of the proposed site. It is assumed to operate primarily at free flow (PG&E 2011).

Starr Road, a paved two-lane rural road, connects Old Redwood Highway and local roadways south of the project site and would cross the railroad right-of-way. Gumview Road (also paved two-lanes) runs east to west between Starr Road and Herb Road. Herb Road borders the substation site to the north, connecting to Old Redwood Highway.

### Mass Transit

Sonoma County Transit (SCT) provides intercity transit throughout Sonoma County. SCT bus route 60 (from Cloverdale to Santa Rosa) runs through the Town of Windsor along Starr Road, Windsor Road, and Old Redwood Highway. The nearest bus stops are on Old Redwood Highway, immediately to the south of the site for route 60 south and directly across Old Redwood Highway for route 60 north (SCT 2011a).

The Windsor Shuttle, under contract with the Town of Windsor, operates Route 66 along Arata Lane and Old Redwood Highway Monday through Saturday. Route 66 bus stops near the project site are along Old Redwood Highway at Miller Lane, Rio Ruso Drive, Godfrey Drive, Windsor Road, Market Street, and Windsor River Road (along the distribution line work) (SCT 2011b).

### Rail

The NWPRR railroad line 300 feet west of the western project boundary was closed by the Federal Railroad Administration in 1998 due to severe winter storm damage. The right-of-way has been acquired for future passenger service and freight service. The Sonoma-Marin Area Rail Transit District (SMART) plans to operate passenger trains along the 14-station, 70-mile rail line from Larkspur to Cloverdale. The first phase, a 37-mile rail and trail project connecting San Rafael and Santa Rosa is supposed to be completed by late

2014 (SMART 2011). Future phases, including a station that would be located at Windsor River Road, would be completed as funding is identified (SMART 2011).

The North Coast Railroad Authority (NCRA) also has an easement for freight operations along a portion of this route. In May 2011 the Federal Railroad Administration declared the NWPRR line safe for freight service from Brazos Junction to Windsor and in July 2011, the first freight trains began service along this portion of the track (NCRA 2011, Hart 2011).

## Bicycle

Bicycle paths, bicycle lanes, and sidewalks provide safe routes for non-motorized transport. There are several existing Class I (separate, multi-use trails or paths) and Class II (striped bicycle lanes on roadways) bicycle facilities in the project vicinity. A Class I route runs along the NWPRR from north of the Wilson Ranch Soccer Park to north of Shiloh Road; SMART proposes to extend the path to the Town of Windsor limits. A Class II bikeway has also been proposed along Old Redwood Highway from south of Windsor Road to the Town of Windsor northern limits (PG&E 2011).

## Air Transportation

The Charles M. Schulz Sonoma County Airport is the nearest airport to the proposed project; it is located approximately 3.6 miles southeast of the proposed substation site. This airport offers commercial airline service and is a designated fire base by the California Department of Forestry and Fire Protection. Other airports in Sonoma County open for public use include the privately owned Graywood Ranch Airport (the closest private air strip at 17 miles from the substation site), Angwin Airport, Sonoma Skypark and Sonoma Valley airport. The city-owned Cloverdale, Healdsburg, and Petaluma airports are also in the vicinity (PG&E 2010).

## Permits and Approvals Necessary

**California Department of Transportation.** PG&E would need to apply for and obtain a Caltrans Transportation Permit for transportation of oversized or excessive loads. This permit would determine a specific route for the shipper to follow from origin to destination.

**Local Agencies.** For distribution line work, PG&E would need to apply to the Town of Windsor for ministerial encroachment permits to conduct work in public rights-of-way. Oversized or excessive loads would require a transportation permit with Sonoma County and the Town of Windsor. An encroachment permit for temporary positioning of oversized vehicles that may obstruct traffic on through roads may also be needed in order to deliver equipment or materials to the project site.

## 5.16.2 Environmental Impacts and Mitigation Measures

- a. *Would the project cause an increase in traffic that 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)?*

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The proposed project would add truck trips and worker commute trips during construction and operation.

**Construction vehicles/trips:** During peak construction, approximately 15 people would work at the substation site, and they would make approximately two trips per day to and from the site. Distribution line installation, including pole replacement and reconductoring, would require a maximum workforce of approx-

imately 16 workers over approximately six to seven months. This would require a maximum of 32 truck trips to and from the distribution line work area, and up to 62 trips if overlapping with substation site work.

The peak level of estimated truck trips would occur during substation site grading. Required truck trips are summarized in Table 4-2. As described in Section 4.10.1, an estimated 142 truck trips would be required to remove and import soil and other materials to bring the substation site to its final grade. An additional 146 truck trips would be required for other work, including trenching and boring for the distribution lines. In the future, approximately 43 truck trips would be required for installation of equipment (these trips would occur over time).

Daily traffic volume on roads in the project vicinity is shown in Table 5.16-2. Highway 101 would be the main route to and from the substation. From the south, truck traffic to the site would use the Arata Lane exit to Old Redwood Highway, approximately 3,000 feet south of the site. From the Substation site, southbound trucks would enter Highway 101 off Old Redwood Highway 800 feet south of the site. Full interchanges with Highway 101 are at Windsor River Road 1.9 miles south of the site and 2.3 miles north of the site, where Old Redwood Highway crosses under Highway 101. An unlikely 'worst case' scenario would be for *all* 142 of the truck trips required during grading to occur on the same day. Assuming an 8 hour work day, this would result in about 18 trucks an hour. In 2010, peak hour traffic on US 101 was 5,000 vehicles south of Windsor River Road and 3,750 vehicles north of Windsor River Road. Eighteen trucks would represent less than a 0.5 percent increase in peak hour traffic volume on the highway, if the trucks were on US 101 during that hour. Local roads are mostly LOS A/B with one LOS A to C road (Old Redwood Highway), this worst-case addition in truck traffic volume would not be a large increase relative to the existing volume and is not expected to affect the existing LOS.

Temporary traffic slowdowns may occur while large slow-moving equipment is moved over public roadways. By law, the heavy loads would require PG&E to obtain transportation permits from the local jurisdictions and Caltrans. The transportation permits would designate the haul routes to be taken and require PG&E to repair any damage caused to any restricted load limit streets. In addition, PG&E may use flaggers to hold traffic for brief periods of time for construction along Old Redwood Highway, Starr Road, Gumview Road, Herb Road, and other access roads leading to individual pole locations within the Town of Windsor. These slight increases in traffic will be temporary and short-term. PG&E would obtain ministerial encroachment permits to conduct work in public rights-of-way as required by the state and the Town of Windsor for distribution line installation and substation construction. PG&E has committed to implementing a Pedestrian and Traffic Control Plan as part of the encroachment permit, which incorporates appropriate Best Management Practices (BMPs) to manage potential traffic resulting from construction. This plan has not been prepared as it will be subject to site-specific conditions based on the location of the work along the right-of-ways and based on engineering design.

Enforcement of the terms of an encroachment permit would reduce impacts associated with short-term road closures. However, the terms of an encroachment permit would be specified by the agency having jurisdiction. Compliance with BMPs would avoid or reduce some impacts; however, they may not specifically address time-of-day closures. As such, overall impacts would remain potentially significant. Implementing **Mitigation Measure T-1** would restrict the time of day when lane closures would occur and would ensure that impacts are less than significant.

**Operation vehicles/trips:** Only about one truck trips per month would be required during operations for routine maintenance. This would be a very minimal increase in traffic; impacts would be less than significant.



**T-1 Restrict lane closures.** PG&E shall restrict all necessary lane closures or obstructions on major roadways associated with overhead or underground construction activities to off-peak periods in congested areas to reduce traffic delays. Lane closures must not occur between 6:00 and 9:30 a.m. or between 3:30 and 6:30 p.m., unless otherwise authorized in writing by the responsible public agency issuing an encroachment permit.

***b. Would the project cause, either individually or cumulatively, a level-of-service standard established by the county congestion management agency for designated roads or highways to be exceeded?***

*LESS THAN SIGNIFICANT.* Construction of the proposed project would cause a slight short-term increase in the local traffic throughout the project study area. As stated in Section 5.16.2(a), project-related traffic would result in a relatively small increase when added to the existing daily traffic on freeways and arterial roadways. The proposed project would not increase traffic substantially. However, the Airport Master Plan construction could overlap with the proposed project construction with a worst case scenario of 91 construction workers round trips per day and 70 (+ project truck trips) delivery truck trips per day. Because the regional roads are operating at an acceptable LOS and because of the newly opened third lane in either direction on Highway 101, the increase in trips would not likely alter the project area roadways' existing level of service designations, and level of service standards would not be exceeded. PG&E has stated that they would encourage construction workers to carpool to the job site to the extent feasible (**APM AQ-6**), further reducing the number of trips required for the project on a daily basis. Operation of the proposed project would only require routine inspection and periodic maintenance visits, which would not cause level of service standards to be exceeded. Therefore, the project's impact on level of service standards would be less than significant.

***c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?***

*NO IMPACT.* The project area is 3.6 miles northwest of the Charles M. Schulz Sonoma County Airport. The new distribution poles are located approximately 2.2 miles northwest from the end of the Sonoma County Airport runway. The proposed project is outside both the Comprehensive Airport Land Use Plan Safety Zones and the Relocated Comprehensive Airport Land Use Plan Safety Zones as proposed in the Draft Environmental Impact Report for the Charles M. Schulz/Sonoma County Airport Master Plan Implementation Project (Sonoma County 2011). As such, the proposed project would not include any features that would disrupt or affect air traffic and there would be no impacts on air traffic patterns.

***d. Would the project substantially increase hazards because of a design feature or incompatible uses?***

*LESS THAN SIGNIFICANT.* The distribution line would be the closest project feature to a public roadway. It is possible, but unlikely, that new conductors could break during the pulling and tensioning process that is associated with the reconductoring the distribution line along Old Redwood Highway. PG&E would pull the conductor through each structure under a controlled tension to keep it elevated and away from obstacles, preventing damage to the line and protecting vehicular and pedestrian traffic. In addition, the reconductoring is a temporary and short-term construction process. No other features would have the potential to increase traffic hazards in the area, and there are no incompatible uses (PG&E 2011). Because PG&E would use a controlled tension during pulling of the conductor, the potential for hazards on area roadways would be less than significant.

**e. Would the project result in inadequate emergency access?**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Windsor Road south of the transmission line reconductoring is a primary emergency access for the Windsor Fire Station Two located at 8600 Windsor Road (PG&E 2011). Reconductoring activities would occur at the intersection of Windsor Road and Windsor River Road and along Old Redwood Highway. Temporary road closures would be required during underground cable installation, pole removal and installation, and conductor stringing activities. Road closures could lengthen the response time required for emergency vehicles passing through the construction zone. Implementing **Mitigation Measure T-2** would ensure advance coordination with emergency service providers to avoid restricting movements of emergency vehicles. With the implementation of this measure, potential impacts to emergency access would be less than significant.

**T-2**            **Ensure emergency response access.** PG&E shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services serving the project area shall be notified 30 days in advance by PG&E of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where roads will be temporarily blocked, work crews shall be ready at all times to accommodate emergency vehicles through immediately stopping work for emergency vehicle passage and/or facilitating the use of short detours and alternate routes in conjunction with local agencies.

**f. Would the project result in inadequate parking capacity?**

*LESS THAN SIGNIFICANT.* The proposed project would not occur within any parking lots. Construction personnel would park in designated areas on the substation parcel, and would not use public parking lots, including “park and ride” lots at the intersection of Old Redwood Highway and Starr Road. Reconductoring of the distribution line would require nine pull and tension locations (40 to 50 feet long by 10 feet wide) along public streets at dead end or angle pole locations (PG&E 2011, PG&E 2011-2013). Distribution line installation may require additional workspace within Old Redwood Highway, Starr Road, Gumview Road, Herb Road, and other access roads leading to individual pole locations. However, associated lane closures would be brief, and PG&E would be required to comply with the Town of Windsor encroachment permit process. Operation of the proposed project would not create a need for parking outside of the substation site. Because the lane closures and any associated interference with street parking would be temporary, impacts to parking capacity would be adverse, but less than significant.

**g. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* Overhead conductor stringing activities and placement of underground distribution cables involving short-term road closures would occur with construction and reconductoring of distribution lines. Access to the substation site would require curb cuts and driveways to be built off Old Redwood Highway. A replaced TSP Loop pole would loop the existing Fulton No. 1 60 kV power line from its location west of the NWPRR over the tracks and into the substation. These activities could disrupt at least two SCT bus routes (Route 60 and the Windsor Shuttle) and the NCRA freight service. Operational maintenance and emergency repairs would potentially also occur along the bus routes. This may cause scheduling delays and temporary rerouting of buses or relocation of stops. Implementing **Mitigation Measure T-3** would reduce impacts to public transit and school bus routes to less than significant levels. PG&E has initiated discussions with SMART staff to obtain permission to cross

the railroad and would consult with SMART regarding coordination of construction activities within and adjacent to the railroad crossing (PG&E 2010).

**T-3**            **Consult with SCT and SMART.** PG&E shall consult with Sonoma County Transit District at least one month prior to construction to reduce potential interruption of bus transit services. If necessary, PG&E shall arrange for transit bus routes to be temporarily rerouted until construction in the vicinity is complete. PG&E shall obtain approval from SMART to encroach on the railroad right-of-way.

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## 5.17 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

### 5.17.1 Setting

Utility and service system facilities associated with electricity, domestic (potable) water, stormwater, solid waste, communications, and natural gas are provided and maintained by a variety of local purveyors, including cities, counties, special districts, water agencies, and private companies. Utilities such as domestic water, wastewater and stormwater sewers, and natural gas are usually transmitted via underground pipelines or conduits (Town of Windsor 2011). Electrical and telecommunication services can be installed underground or overhead on utility poles. Most urban utility and public service infrastructure is located within public rights-of-way. The new substation and distribution lines would be located within the Town of Windsor. Table 5.17-1 lists applicable utility providers.

**Table 5.17-1. Utility Providers**

**Natural gas** – PG&E

**Electricity** – PG&E

**Water** – Town of Windsor (Utility Billing and Field Services)

**Wastewater** – Town of Windsor, Windsor Wastewater Treatment Reclamation and Disposal Facility

**Telephone** – AT&T

**Solid Waste** – Windsor Refuse & Recycling

*Landfills Used:* Healdsburg Transfer Station, Sonoma County (for processing and transfer, no storage); Hay Road Landfill, Solano County; Central Disposal Site, Sonoma County.

Sources: Town of Windsor 2011; Sonoma County Waste Management Agency 2011; Carter 2011.

Windsor is served chiefly by the Hay Road Landfill, but the Central Disposal Site also provides some disposal services (Carter 2011). However, other landfills have served the town in the recent past and may do so again in the future (PG&E 2010). Table 5.17-2 lists the total and remaining capacities of solid waste processors currently serving the Town of Windsor.

**Table 5.17-2. Landfill Capacities**

Landfill Name	Total Capacity (cu.yd.)	Remaining Capacity (cu.yd.)	Remaining Capacity (percent)	Maximum Throughput (tons/day)
Hay Road Landfill	37,000,000	30,433,000	82.3	2,400
Sonoma County Central Landfill	19,779,250	9,470,629	47.9	2,500

Source: CalRecycle 2011a, b.

## 5.17.2 Environmental Impacts and Mitigation Measures

### ***a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?***

*LESS THAN SIGNIFICANT.* The project area is within the jurisdiction of the North Coast Regional Water Quality Control Board (RWQCB). Currently, the site is undeveloped and generates no wastewater. Minimal wastewater would be generated by workers during project construction, and any wastewater would be disposed of offsite consistent with RWQCB requirements. The construction-related increase in wastewater would be temporary and would represent a very small fraction of the permitted flow for the wastewater treatment capability within Windsor. Upon completion of construction, the proposed project would not generate wastewater because the proposed substation would be an automated facility. The volume and quality of project wastewater would not exceed the treatment requirements of the RWQCB, and this impact would be less than significant.

### ***b. Would the project require, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

*LESS THAN SIGNIFICANT.* The proposed project would generate minimal water demand or wastewater. Construction work crews would bring their own drinking water to the site and portable toilets would be provided. The Town of Windsor would supply both potable water for irrigation and water for construction purposes from an existing valve box along Old Redwood Highway at the eastern front of the proposed substation site (PG&E 2011). Existing wastewater and water treatment facilities are adequate to accommodate the demand generated by the proposed project (See Section 5.17.2[a] and [d]). Upon completion of construction, the proposed project would not generate substantial demand for water or wastewater treatment, because the substation would be an unstaffed, automated facility. Thus, the project would not require or result in the construction or expansion of water or wastewater treatment facilities, and this impact would be less than significant.

### ***c. Would the project require, or result in the construction of, new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

*LESS THAN SIGNIFICANT.* Construction of the proposed project could temporarily accelerate sedimentation and reduce surface water quality by disturbing the immediate area of the substation. Stormwater drainage features, along with the construction best management practices (BMPs), would manage project-



related stormwater without using offsite facilities. Substation site grading during construction would alter existing onsite drainage patterns so that runoff from the proposed substation pad would flow into a Spill Prevention Control and Countermeasure (SPCC) retention pond on the western end of the site (near the railroad right-of-way). From this pond, runoff would be pumped or directed into the existing drainage system along the northwestern boundary of the site, an underground concrete pipe that parallels Herb Road. Approximately 200 feet from Old Redwood Highway the underground pipe discharges into an existing 24-inch culvert under Herb Road. From there, a drainage ditch extends approximately 300 feet to Sotoyome Creek. A second 24-inch culvert under a private lane exists between the project site and Sotoyome Creek. (PG&E 2011-2013). Because no new or expanded drainage facilities would be required for the project, this impact would be less than significant.

***d. Would the project have sufficient water supplies available to serve the Proposed project from existing entitlements and resources, or would new or expanded entitlements be needed?***

*LESS THAN SIGNIFICANT.* Water would be required during construction for dust control, fire suppression, and cleaning of construction equipment. Portable toilets would be provided during construction and crews would be provided with bottled water for drinking. The Town of Windsor would supply both potable water for irrigation and water for dust control from an existing valve box along Old Redwood Highway at the eastern front of the proposed site (PG&E 2011). The amount of water needed for dust suppression during construction would be minimal in comparison to available municipal water supplies, and water use for construction would be temporary. Upon completion of construction, the proposed project would only require water for landscaping irrigation. The proposed project would not be expected to exceed the existing water supplies available, so this impact would be less than significant.

***e. Would the project result in a determination by the wastewater treatment provider that serves or may serve the Proposed project that it has adequate capacity to serve the Proposed project's projected demand in addition to the provider's existing commitments?***

*LESS THAN SIGNIFICANT.* The proposed project would generate minimal wastewater during construction. As discussed in Section 5.17.2(a) above, existing wastewater facilities would adequately accommodate the minor demand caused by project construction while serving existing commitments. Therefore, this impact would be less than significant.

***f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the Proposed project's solid waste disposal needs?***

*LESS THAN SIGNIFICANT.* Construction-related solid waste would be transported to the Healdsburg Transfer Station. After consolidation, the bulk of the waste would go to the Hay Road Landfill in Solano, the remainder potentially going to the Central Disposal Site in Sonoma County (Carter 2011). Small amounts of construction debris (such as concrete and metal), and would be transferred to a number of potential disposal sites in Sonoma County (Carter 2011). Total solid waste generated by construction of the proposed project would be minor and within the capacity of existing landfills serving the project area. Therefore, the impact of solid waste disposal would be less than significant.

***g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?***

*NO IMPACT.* The California Integrated Waste Management Act of 1989, which emphasizes resource conservation through reduction, recycling, and reuse of solid waste guide solid waste management requires that localities conduct a Solid Waste Generation Study (SWGS) and develop a Source Reduction Recycling Element (SRRE). The proposed project would operate in accordance with these applicable Solid Waste

Management Policy Plans by including recycling where feasible. As identified in Section 5.17(f) above, the landfills serving the site would have sufficient capacity to accommodate project construction solid waste disposal needs, and project solid waste disposal would not require the need for new or expanded landfill facilities. Therefore, the proposed project would comply with federal, State, and local statutes and regulations related to solid waste disposal limits and landfill capacities. No impact would occur.

## 5.18 Mandatory Findings of Significance

MANDATORY FINDING OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? ( <i>Cumulatively considerable</i> means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* As described in Section 5.4, Biological Resources, the project could result in impacts to special-status species and their habitat. However, implementation of the APMs and mitigation measures described in Section 5.4 would reduce these potential impacts to less than significant levels. Similarly, Section 5.5, Cultural Resources, shows that the project would have a less than significant impact on important examples of the major periods of California history or prehistory. With the APMs and mitigation measures in this IS, the proposed project would not have a significant adverse effect on natural resources, either by itself or cumulatively with other projects. No significant impacts would occur that could not be mitigated to a less than significant level.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)**

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* CEQA defines a cumulative impact as an effect that is created as a result of the combination of the proposed project together with other projects (past, present, or future) causing related impacts. Cumulative impacts of a project need to be evaluated when the project’s incremental effect is cumulatively considerable and, therefore, potentially significant.

A list of cumulative projects used for this analysis is provided in Table 5.18-1. The list includes projects in the vicinity of the project area in the Town of Windsor and unincorporated Sonoma County. The projects were reviewed to identify whether the proposed project could contribute to cumulatively significant impacts when evaluated in combination with other projects. The majority of the projects are located more than a mile from the proposed substation site.

**Table 5.18-1. Planned and Current Projects in the Vicinity of the Proposed Project**

Project Name	Address	Proximity to Substation Site (approx.)	Type of Development	Description	Size (approx.)
Sanderson Ford	10920 Old Redwood Highway	0.20 miles	Non-residential	Auto dealership	7 acres
LaFranchi Retail	8779 Conde Lane	2 miles	Non-residential	Retail	8.5 ksf <sup>1</sup>
Los Robles Meadows 1 & 2	9885 Old Redwood Highway	1 mile	Residential	Single-family detached	Unknown
Cole Subdivision	10095 Old Redwood Highway	0.70 miles	Residential	20 single-family attached/11 single	Unknown
Columbo	9933 Starr Road	0.80 miles	Residential	Single-family detached	Unknown
Coate Minor Subdivision #3	450 Duncan Drive	2 miles	Residential	Single-family detached	Unknown
Coate Minor Subdivision #4	475 Ginny Drive	2 miles	Residential	Single-family detached	Unknown
Town Green Village 5	8900 Bell Road	1.70 miles	Mixed use	66 single-family detached (condos) over 30.4 ksf <sup>1</sup> retail	Unknown
Windsor Mill	8777 Bell Road	1.90 miles	Mixed use	53 single-family detached, 23 live/work townhomes, 127 single-family attached	Unknown
Village at Windsor	8975 Conde Lane	1.90 miles	Mixed use	16 single-family detached (condos) over 12.1 ksf <sup>1</sup> retail	Unknown
Windsor Gateway	9397 Old Redwood Highway	1.40 miles	Mixed use	152 single-family detached (condos) over 40 ksf <sup>1</sup> retail	Unknown
Bell Village Project	9290 Old Redwood Hwy	1.27 miles	Mixed use	403 residential units (condos and townhouses; 77.6 ksf <sup>1</sup> retail	27.18 acres
Bell Village Project	9290 Old Redwood Hwy	1.27 miles	Mixed use	403 residential units (condos and townhouses; 77.6 ksf <sup>1</sup> retail	27.18 acres

Source: PG&E 2011; PG&E 2011-2013.

As discussed in preceding Sections 5.1 through 5.17, many of the potential impacts of the proposed project would occur during construction, with few lasting operational effects. Because the construction-related impacts of the project would be temporary and localized, they would only have the potential to combine with similar impacts of other projects if they occur at the same time and in close proximity. No current and/or probable projects in the vicinity of the substation have anticipated construction schedules that would occur at the same time as the project and thus create a potential cumulative impact. Long-term impacts from the project, however, have the potential to combine with impacts from the projects listed in Table 5.18-1. These impacts are considered by issue area.

**Aesthetics.** With incorporation of APMs, construction and operation of the proposed project would not result in significant impacts to visual resources. The proposed substation would be situated low-lying terrain and would only be visible from foreground distances; the project would not be highly visible from public view corridors. Additionally, the proposed substation would be screened from public views by project landscaping and a wall, and by existing vegetation. Given the nearby light industrial and commercial development, the project's appearance would fit in with the existing setting. The replacement of existing wood poles with taller poles and the associated reconductoring and distribution underbuild are incremental changes that would not substantially alter the existing visual character found in the area.

The incremental change in visual conditions associated with the proposed project would contribute to a cumulative change in visual conditions, but represents only a relatively minor incremental change in cumulative conditions. Therefore, the project's visual effects are adverse, but not considerable enough to represent a significant cumulative impact.

**Air Quality.** Air emissions would result from both construction and operation of the substation. Implementation of APMs and Mitigation Measure AQ-1 discussed in Section 5.3, Air Quality, would reduce air emissions of particulate matter from the project to a less-than-significant level. Other pollutants resulting from construction activities are accounted for in emissions inventories for regional air quality maintenance plans and would not impede attainment or maintenance of ozone or carbon monoxide (CO) standards. The contributions to Sonoma County air emissions from substation construction are  $6.9 \times 10^{-3}$  percent or less of the County's annual total for greenhouse gases (GHG) and for substation operations and maintenance are  $3.9 \times 10^{-5}$  percent or less of the County's annual total for all pollutant categories. Any potential adverse cumulative air quality impacts would be short-term (lasting for the duration of construction) and would not be cumulatively considerable; therefore, the cumulative impact would be less than significant. Since the substation would be unmanned, there would be no vehicular emissions associated with regular commuting to and from the substation. As a result, there will be no significant cumulative impacts to Air Quality.

**Biological Resources.** Potential impacts to biological resources could occur from construction impacts on special-status species (particularly listed plants). The proposed substation site is bordered by transportation and developed land uses, making it discontinuous from surrounding habitat and less desirable for wildlife species. There are vernal pools along the Fulton No. 1 60 kV Power Line, and listed plants were found along the power line in June 2012. Biological resources could be affected by noise, dust, ground disturbance, sedimentation, and potential spills of hazardous materials. Potential impacts from the proposed project would be less than significant with the implementation of APMs and mitigation measures discussed in Section 5.4. The project would not represent a significant contribution to cumulative impacts. Impacts to biological resources during operation and maintenance would be the same as those during current operation and maintenance practices; therefore, no contribution to cumulative impacts would occur.

**Cultural Resources.** Neither short-term construction activities nor operation and maintenance activities would affect any known cultural resources with the implementation of APMs and mitigation measures discussed in Section 5.5. These measures would require marking the limits of the project area to exclude the known resources. Workers would also be trained to identify potential cultural resources and to halt and redirect construction activities in the event that unanticipated cultural resources are discovered. No cultural resources would be affected during project construction or during operation of the project, and no contribution to cumulative impacts would occur.

**Geology and Soils.** The project would not increase potential risks associated with seismic events or other geologic hazards. Short-term construction impacts to soils, including unstable soils, have the potential to occur; however, implementation of the APMs described in Section 5.6 would reduce the impacts to a less than significant level.

**Greenhouse Gas Emissions.** Greenhouse gas (GHG) emissions would result from the burning of fuel required to operate construction equipment and vehicle use during construction activities. The most common GHGs associated with fuel combustion are CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Greenhouse gas reduction measures would be implemented to reduce already less-than-significant GHG emissions. Any potential adverse cumulative GHG impacts would be short-term and not cumulatively considerable; therefore, GHG emissions would have a less than significant cumulative impact. GHG emissions from operation and maintenance would be minimal, as the substation and power lines would be unmanned and would

require only infrequent maintenance. The use of sulfur hexafluoride (SF<sub>6</sub>) in transformers would comply with CARB requirements on use and reporting. PG&E would install new SF<sub>6</sub> breaker designs that are guaranteed to have an annual leak rate of one-half of one percent or less. The small amount of emissions created during operation and maintenance would not significantly contribute to cumulative impacts.

**Hazards and Hazardous Materials.** The use of hazardous materials for the project would be minimal during construction and operation. Hazardous materials would be stored and used in compliance with applicable regulations. The project would not result in an increase in usage of hazardous materials. Impacts from routine use, transportation, disposal, and accidental spillage of hazardous materials would be reduced to a less than significant level with implementation of the APMs and mitigation measures discussed in Section 5.8.

**Hydrology and Water Quality.** The project would not substantially change drainage patterns at the site. It would require minimal water for dust control during construction and minimal use of water for irrigation of landscape vegetation during operation. With the implementation of the measures discussed in Section 5.9, the construction and operation of the substation would not adversely impact hydrology or water quality in the project area or contribute to a significant cumulative impact.

**Land Use.** The project would not conflict with applicable land use policies and regulations; therefore, the project would not contribute to cumulative impacts to land use.

**Mineral Resources.** No commercial mineral resources are known to exist within the project area and the proposed project would not result in the loss of availability of a known mineral resource; therefore, the project would not contribute to potential cumulative impacts that may result in the loss of mineral resources.

**Noise.** The proposed project is not expected to contribute to a long-term cumulative impact on ambient noise levels in the project area. Noise from construction activities would be audible to nearby residences, but most construction would be limited to daytime hours and would be short-term. Any required nighttime work would be of extremely short duration. Impacts from noise to nearby sensitive receptors would be less than significant with the implementation of APMs and Mitigation Measure N-1. No other projects in the area are expected to be under construction at the same time as the proposed project (see Table 5.18-1). Operation of the North Coast Railroad Authority (NCRA) freight service (partial operations begun in 2011) and the Sonoma Marin Area Rail Transit (SMART) passenger service (expected in service in 2014), would contribute to background noise levels in the vicinity of the substation; however, operational noise levels of the substation would be within allowable limits. As such, the project would result in a less than significant noise impact during construction and operations, and will not contribute to a significant cumulative impact.

**Population and Housing.** The proposed project would not result in impacts to population and housing. Construction workers would be existing local PG&E staff or contracted workers from the region. The project would not displace any existing housing or people. The proposed project would have no impacts on population and housing.

**Public Services.** The proposed project would not result in significant impacts to public services. The proposed project would not require the cessation or interruption of fire or police protection services, schools, or other public facilities. The project may require temporary restricted access to local parks. Impacts would be less than significant and would not contribute to a cumulatively significant impact on the parks in the project area.



**Recreation.** The proposed project would not cause a substantial increase in the use of or physical deterioration of parks or recreational facilities. The project would have no effects on recreation and would not contribute to cumulative effects associated with other projects.

**Transportation and Traffic.** Construction of the proposed project would have the potential for temporary impacts to traffic volumes, LOS standards, road hazards, and emergency access. Use of local roads for transport of construction equipment and construction personnel would be temporary and short-term. Distribution line installation would require temporary lane closures; however, these slight increases in traffic would be temporary and short-term. Given the location of the project area in relation to other development projects in the region, the transportation network is sufficient to accommodate construction traffic to avoid significant impacts to any one area. Transportation and Traffic impacts would be temporary and less than significant, and would not contribute to cumulatively considerable impacts.

**Utilities and Service Systems.** Implementation of other development projects could result in potential cumulative impacts to utilities, particularly local water supplies and wastewater facilities. In contrast, construction of the proposed project would temporarily require a minimal water supply and generate minimal amounts of wastewater. Construction would require the disposal of a less than significant amount of all types of waste. No expanded facilities or services would be needed for the project, and use and disposal of all water and waste products would comply with all applicable laws and regulations. Impacts to utilities and service systems during operation and maintenance would be the same as those during current operation and maintenance practices; therefore, no contribution to cumulative impacts would occur.

*c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?*

*LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.* The project would not substantially adversely affect human beings directly or indirectly. The Initial Study identified no environmental effects that would cause substantial adverse effects on human beings. Adverse effects would be mitigated by implementation of APMs and mitigation measures and in most instances would be related to short-term construction impacts. Nearby residents could be affected during construction by impacts related to air quality, hazardous materials, and noise. These potential impacts would be reduced to a less than significant level with the implementation of the APMs and mitigation measures included in this IS.



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## 5.19 Corona and Induced Current Effects

### 5.19.1 Setting

#### Corona

The corona effect is the physical manifestation of discharged electrical energy into very small amounts of sound, radio noise, heat, and chemical reactions with air components. It is a phenomenon associated with all energized electrical devices but is especially common with high-voltage power lines.

The amount of corona produced by a power line is a function of line voltage, conductor diameter, conductor locations in relation to each other, power line elevation above sea level, condition of conductors and hardware, and local weather conditions. Corona typically becomes a design concern for power lines 230 kV and higher (i.e., transmission lines). It is less noticeable for lines that are operated at lower voltages (i.e., subtransmission and distribution-sized lines). The electric field gradient is greatest at the conductor surface. Larger-diameter conductors have lower electric field gradients at the conductor surface and, therefore, lower corona noise than smaller-diameter conductors.

#### Induced Currents

Small electric currents can be induced by electric fields in metallic objects located close to power lines. An electric current can flow when an object has an induced charge and a path to ground is presented. The amount of induced current that can flow is important to evaluate because of the potential for nuisance shocks to people and the possibility of other effects such as fuel ignition.

The National Electrical Safety Code (NESC) specifies that transmission lines be designed to limit short circuit current from vehicles or large objects near the line to no more than 5 milliamperes (mA). The California Public Utilities Commission (CPUC) General Order 95, Rules for Overhead Electric Line Construction Section 35, covers all aspects of design, construction, operation, and maintenance of electrical power lines and fire safety hazards. CPUC General Order 95 and the NESC also address shock hazards to the public by providing guidelines on minimum clearances to be maintained for practical safeguarding of persons during the installation, operation, or maintenance of overhead transmission lines and their associated equipment.

### 5.19.2 Environmental Impacts and Assessment

The CEQA Guidelines do not provide significance criteria for evaluating significant impacts from corona or induced current effects. Corona and induced current could have a significant impact through:

- ¾ Audible noise
- ¾ Radio and television interference
- ¾ Computer interference
- ¾ Disturbance of cardiac pacemakers
- ¾ Fuel ignition

The project includes construction of a new, 115/12 kV distribution substation, reconductoring of approximately 9,420 feet of existing 12 kV line, and building 7,900 feet of new 12 kV line. During wet or foul weather conditions (such as rain or fog), the conductor would produce the greatest amount of corona noise and have the greatest potential to be noticeable. The audible corona noise level caused by

the 12 kV power lines was not quantified, but is not typically an issue for circuits less than 230 kV. Circuits operating at 12 kV typically cause noise at levels much less than the ambient baseline noise levels in the project area, which as noted in Section 5.12 (Noise), would be approximately 45 dBA. Impacts would thus be less than significant.

Although corona can generate high frequency energy that may interfere with broadcast signals or electronic equipment, this is generally not a problem for transmission lines. The Institute of Electrical and Electronic Engineers (IEEE) published a design guide (IEEE 1971) that is used to limit conductor surface gradients so as to avoid corona levels which would cause electronic interference. Corona or gap discharges related to high frequency radio and television interference impacts are dependent upon several factors, including the strength of broadcast signals, and are anticipated to be very localized if they occur. Individual sources of adverse radio/television interference impacts can be located and corrected on the power lines. Conversely, magnetic field interference with electronic equipment such as computer monitors can be corrected through the use of software, shielding or changes at the monitor location. As a result, impacts from corona interference would be less than significant.

Induced currents and voltages on conducting objects near the proposed power lines would not pose a threat in the environment if the conducting objects are properly grounded. Project construction and operation would meet or exceed General Order 95 standards and work would be done in accordance with PG&E's Code of Safe Practices. Grounding would be incorporated into PG&E's design plans, and as a result, impacts would be less than significant (PG&E 2011). Likewise, induced currents would not significantly increase the risk of fuel ignition in the area.

The electric fields associated with the proposed project's transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers resulting in them reverting to an asynchronous pacing (IEEE 1979). Substantial adverse effects would not occur with prolonged asynchronous pacing; periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. Therefore, while the transmission line's electric field may impact operation of some older model pacemakers, the result of the interference would be of short duration and is not considered significant or harmful. No mitigation measures would be required.

## 6. Mitigation Monitoring Plan

Pacific Gas and Electric (PG&E) proposes to construct and operate the Windsor Substation Project (“proposed project”). An Initial Study was prepared to assess the proposed project’s potential environmental effects. The Initial Study was prepared based on information in the Proponent’s Environmental Assessment (PEA), project site visits, and supplemental research. The majority of the proposed project’s impacts would occur during project construction. Within PG&E’s application, Applicant Proposed Measures (APMs) were proposed to reduce potentially significant adverse impacts related to project construction and operation.

The purpose of this Mitigation Monitoring Plan is to ensure effective implementation of each APM, as well as the mitigation measures identified by the Initial Study and imposed by the CPUC as part of project approval. This Mitigation Monitoring Plan includes:

- ¾ The Applicant Proposed Measures and mitigation measures that PG&E must implement as part of the Proposed project;
- ¾ The actions required to implement these measures;
- ¾ The monitoring requirements; and
- ¾ The timing of implementation for each measure.

The CPUC will use this MMP as the framework for a Mitigation Monitoring, Compliance, and Reporting Program (MMCRP). The MMCRP will be created by the CPUC to formalize protocols to be followed prior to and during construction by CPUC third-party environmental monitors (CPUC EMs) and PG&E project staff. The MMCRP will include, but will not be limited to, the following topics:

- ¾ Agency Jurisdiction
- ¾ Roles/ Responsibilities
- ¾ Communication
- ¾ Compliance Verification and Reporting
- ¾ Project Changes
- ¾ A CPUC-designated environmental monitor will carry out all construction field monitoring to ensure full implementation of all measures. In all instances where non-compliance occurs, the CPUC’s designated environmental monitor will issue a warning to the construction foreman and PG&E’s project manager. Continued non-compliance shall be reported to the CPUC’s designated project manager. Any decisions to halt work due to non-compliance will be made by the CPUC. The CPUC’s designated environmental monitor will keep a record of any incidents of non-compliance with mitigation measures, APM, or other conditions of project approval. Copies of these documents shall be supplied to PG&E and the CPUC.

Final language of the MMCRP will be developed in consultation with PG&E. Drafted language for the project variance and dispute resolution protocols are provided below.

### 6.1 Minor Project Changes or Variances

The CPUC Project Manager along with the CPUC Monitoring Team will ensure that any process to consider minor project changes that may be necessary due to final engineering or variances or deviations from the procedures identified under the monitoring program are consistent with CEQA requirements.

No minor project changes or variances will be approved by the CPUC if they are located outside of the geographic boundary of the project study area or create new or substantially more severe significant impacts. A variance should be strictly limited to minor project changes that will not trigger other permit requirements unless the appropriate agency has approved the change, that does not increase the severity of an impact or create a new impact without appropriate agency approval, and that clearly and strictly complies with the intent of the mitigation measure or applicable law or policy. PG&E shall seek any other project refinements by a petition to modify.

A proposed project change that has the potential for creating significant environmental effects will be evaluated to determine whether a petition to modify and/or supplemental California Environmental Quality Act (CEQA) review is required. Any proposed deviation from the approved project, adopted mitigation measures, APMs, and correction of such deviation, will be reported immediately to the CPUC Monitoring Project Director and Project Manager for their review. The CPUC Monitoring Project Director and Project Manager will review the variance request to ensure that all of the information required to process the minor project change is included, and then forward the request to the CPUC Project Manager for review and approval. The CPUC Project Manager may request a site visit from the CPUC Environmental Monitor (EM), or may need additional information to process the variance. In some cases, project refinements may also require approval by jurisdictional agencies. In general, a minor project change request must include the information listed below.

- ¾ Detailed description of the location, including maps, photos, and/or other supporting documents;
- ¾ How the variance request deviates from a project requirement;
- ¾ Biological resource surveys or verification that no biological resources would be significantly impacted;
- ¾ Cultural resource surveys or verification that no cultural resources would be significantly impacted;  
and
- ¾ Agency approval (if necessary).

## 6.2 Dispute Resolution

The Mitigation Monitoring Plan is intended to reduce or eliminate many potential disputes. However, even with the best preparation, disputes may occur. Issues should be first addressed at the field level informally between the CPUC EMs and PG&E's EMs at the regular progress meetings. Questions may be raised to the PG&E Project Environmental Manager or PG&E Project Construction Manager. Should the issue persist or not be resolved at these levels, the following procedures will be used:

- ¾ **Step 1.** Disputes unresolved in the field and complaints (including those from the public) should be directed to the CPUC Project Manager for resolution. The Project Manager will attempt to resolve the dispute informally. Should this informal process fail, the CPUC Project Manager will inform PG&E prior to initiating Step 2.
- ¾ **Step 2.** Should this informal process in the field fail, the CPUC Project Manager may issue a formal letter requiring corrective actions to address the unresolved or persistent deviations from the proposed project or adopted MMP.
- ¾ **Step 3.** If a dispute or complaint regarding implementation or evaluation of the Program or mitigation measures cannot be resolved informally or through a letter request, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC's Executive Director. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall

meet or confer with the filer and other affected participants to resolve the dispute. The Executive Director shall issue an Executive Resolution describing his/her decision, and serve it to the filer and other affected participants.

<sup>3/4</sup> **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the Resolution, such party(ies) may appeal it to the Commission via a procedure to be specified by the Commission.

Parties may also seek review by the Commission through existing procedures specified in the CPUC Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the foregoing procedure.

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
<b>Aesthetics</b>			
Existing Visual Character	<b>APM AE-1:</b> Additional landscaping comprised of trees and shrubs will be included along Herb Road and along the east edge of the <u>substation</u> site in the setback area from Old Redwood Highway to provide additional screening and reduce project visibility. Suggested plant material includes a mix of redwood trees and evergreen native oaks with a small number of deciduous accent trees. Landscaping under transmission lines will consist of small trees and/or shrubs to allow for overhead clearance. All planting will be consistent with PG&E operational requirements for landscaping in proximity to electric transmission facilities.	Review landscape plan and ensure establishment of vegetation screening	Prior to construction, during construction, and during operation
<b>Air Quality</b>			
Particulate Matter Emissions and Dust	<b>APM AQ-1.</b> Water all active construction areas at least twice daily during dry conditions.	Monitor watering of construction areas	During construction
Particulate Matter Emissions and Dust	<b>APM AQ-2.</b> Cover all trucks hauling dirt, sand, or loose materials, or require all trucks to maintain at least two feet of freeboard.	Monitor appropriate handling of dirt, sand, and loose materials by trucks	During construction
Particulate Matter Emissions and Dust	<b>APM AQ-3.</b> Pave, apply water as necessary to prevent fugitive dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	Monitor appropriate dust suppression	During construction
Particulate Matter Emissions and Dust	<b>APM AQ-4.</b> Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites <u>if visible soil material is present</u> .	Monitor sweeping of paved areas and staging areas	During construction
Particulate Matter Emissions and Dust	<b>APM AQ-5.</b> Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.	Monitor street sweeping as appropriate	During construction
Construction Phase Air Quality	<b>APM AQ-6.</b> 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.	Review efforts to encourage carpooling	During construction
Construction Phase Air Quality	<b>APM AQ-7.</b> Minimize construction equipment exhaust by using low-emission 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 shall meet at a minimum USEPA/CARB Tier 1 engine standards.	Review efforts to use low-emission construction equipment	During construction



**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Construction Phase Air Quality	<b>APM AQ-8.</b> 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.	Monitor compliance with idling requirements	During construction
Construction Phase Air Quality/ Greenhouse Gas	<b>APM AQ-9.</b> Encourage use of natural gas powered vehicles for passenger cars and light duty trucks where feasible and available.	Review any efforts to use natural gas vehicles or light duty trucks	During construction
Construction Phase Air Quality/ Greenhouse Gas	<b>APM AQ-10.</b> Minimize welding and cutting by using compression of mechanical applications where practical and within standards.	Ensure emissions from construction equipment exhaust are reduced	During construction
Construction Phase Air Quality/ Greenhouse Gas	<b>APM AQ-11.</b> Encourage the recycling of construction waste where feasible.	Review efforts to recycle construction waste	During construction
Construction Phase Air Quality/ Greenhouse Gas	<b>APM AQ-12.</b> Comply with California Air Resources Board Early Action Measures as these policies become effective.	Monitor compliance with current and future CARB policies	During construction and operations
Operation and Maintenance Phase Air Quality/ Greenhouse Gas	<b>APM AQ-13.</b> Maintain substation breakers in accordance with PG&E’s maintenance guidelines.	Ensure that operational emissions and greenhouse gas are minimized	During operations
Operation and Maintenance Phase Air Quality/ Greenhouse Gas	<b>APM AQ-14.</b> Require that the proposed substation’s breakers have a manufacturer’s guaranteed leakage rate of 0.5 percent per year or less for SF <sub>6</sub> .	Ensure potential for SF <sub>6</sub> leaks is minimized according to a leak reduction standard that would be consistent with the CARB Climate Change Scoping Plan	Prior to construction and during operation

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Construction-Phase Air Quality	<p><b>MM AQ-1.</b> Implement measures to control dust and equipment exhaust during construction. PG&amp;E shall implement measures to control dust and vehicle exhaust during construction of the proposed substation. These measures shall incorporate Applicant Proposed Measures AQ-1 through AQ-12 and additionally shall include the following:</p> <ul style="list-style-type: none"> <li>¾ Limit the speeds of construction vehicles on unpaved surfaces to 15 miles per hour.</li> <li>¾ Limit size of area subject to excavation, grading, or other construction disturbance at any one time to avoid excessive dust; paving shall occur as soon as possible after grading.</li> <li>¾ Provide BAAQMD phone number in a visible location. Post a publicly visible sign with the telephone number and person to contact at PG&amp;E regarding dust complaints. This person shall respond and take corrective action within 48 hours. PG&amp;E shall report to the CPUC within 1 week regarding complaints and corrective action taken.</li> <li>¾ Construction equipment will be properly maintained. All offroad construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program will meet at a minimum the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1).</li> </ul>	Ensure implementation so that construction emissions, dust, and greenhouse gas are minimized	During construction
<b>Biological Resources</b>			
Construction Phase Biological Resource Impacts	<p><b>APM BIO-1.</b> An ongoing special-status species/sensitive habitat education program for construction crews will be conducted by a qualified biologist(s) prior to the commencement of the project and during construction activities. Sessions will include discussion of the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA), the consequences of noncompliance with these acts, identification and values of habitats, and the importance of keeping all project activities and sediments within the designated work area.</p>	Review environmental training materials, review documentation of environmental training	Prior to and during construction
Soil and Vegetation	<p><b>APM BIO-2.</b> Soil and vegetation disturbance will be minimized to the greatest extent possible.</p>	Ensure implementation to minimize impacts to biological resources	Prior to and during construction
Construction Phase Biological Resource Impacts	<p><b>APM BIO-3.</b> An educational brochure will be produced for construction crews working on the project. Color photos of some of the special-status species will be included, as well as a discussion of protective measures agreed to by PG&amp;E and the resource agencies.</p>	Review environmental training materials	Prior to and during construction
Special Status Species	<p><b>APM BIO-4.</b> A pre-construction wildlife and plant survey will be conducted prior to the start of construction activities to identify any special-status species in the proposed substation site, Fulton No. 1 60 kV power line and distribution line alignment, nesting birds or mammals, and occupied burrows. Should a sensitive wildlife or plant species be found, CDFW and/or USFWS will be contacted immediately.</p>	Ensure implementation to reduce impacts to biological resources (supplemented by MM B-1, MM B-3, MM B-4, and MM B-5)	Prior to and during construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Construction Phase Biological Resource Impacts	<b>APM BIO-5.</b> A biological monitor will be on-site during grading activities and installation of the silt fence around the proposed substation site perimeter and needed areas along the distribution line alignment. After these activities are completed, the biological monitor will visit the site once a week. The biologist will complete a weekly report summarizing activities and environmental compliance.	Ensure implementation of monitoring to reduce impacts to biological resources	During construction (including silt fence installation and grading)
Construction Phase Biological Resource Impacts	<b>APM BIO-6.</b> Trash dumping, firearms, and pets will be prohibited in project work areas.	Ensure implementation to reduce impacts to biological resources	During construction
Special Status Plant Species	<p><del><b>APM BIO-7.</b> If special-status plant species are found during any of the special-status plant surveys, PG&amp;E will modify the project to avoid impacts to special-status plant species. If identified special-status plant species cannot be avoided, PG&amp;E will:</del></p> <p><del>¾ acquire suitable habitat for identified species within the project site,</del></p> <p><del>¾ develop a long-term habitat enhancement plan for identified species, and/or</del></p> <p><del>¾ monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan.</del></p> <p><u>If special-status plant species are found during any of the special-status plant surveys, PG&amp;E will modify the project to avoid impacts to special-status plant species. If identified special-status plant species cannot be avoided, PG&amp;E will consult with the appropriate resource agency and comply with permit conditions to ensure that the project will not have a substantial adverse effect on such species, either directly or through habitat modification. Examples of feasible measures that could be required include the following:</u></p> <p><u>¾ acquire suitable habitat for identified species within the project site,</u></p> <p><u>¾ develop a long-term habitat enhancement plan for identified species, and/or</u></p> <p><u>¾ monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan.</u></p>	Ensure implementation to reduce impacts to special-status plants (supplemented by MM B-2)	Prior to and during construction
Sensitive Habitat	<b>APM BIO-8.</b> Mobile equipment will not be parked overnight within 100 feet of aquatic habitat. Stationary equipment (e.g., pumps and generators) used or stored within 100 feet of aquatic habitat will be positioned over secondary containment.	Ensure implementation to prevent impacts to aquatic habitat	During construction
Raptors	<b>APM BIO-9.</b> Anti-perch devices will be applied to the overhead distribution line improvements to inhibit raptor perching and nesting.	Ensure implementation to inhibit raptor perching and nesting	During construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Burrowing Owls	<p><b>APM BIO-10:</b> A qualified wildlife biologist shall conduct pre-construction surveys for burrowing owls according to the Burrowing Owl Survey Protocol and Mitigation Guidelines developed by The California Burrowing Owl Consortium (1993). If any ground disturbing activities are planned during the burrowing owl nesting season (approximately February 1 through August 31), avoidance measures shall be implemented following the recommendations in California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (CDFW, 2012). Avoidance measures shall include a no construction buffer zone of a minimum distance of 656 feet for designated low/medium disturbance activities and 1,640 feet for high disturbance activities. If occupied burrows are closer than those distances to the nearest work site, the specified buffer size may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity) and as determined by a qualified wildlife biologist, that implementation of a specified smaller buffer distance will still avoid project-related "take" of adults, juveniles, chicks, or eggs. Any variance from the standard buffers must be submitted to CDFW in a written report that includes the location, reason for the buffer reduction, the name and contact information of the qualified wildlife biologist(s) who authorized the buffer reduction and conducted subsequent monitoring, the reduced avoidance buffer size, duration of buffer reduction, and outcome to the nest, egg, young and adults. The report should be submitted to CDFW at the end of each nesting season for the duration of the project. The owls will be monitored on a daily basis by a qualified biologist when construction is within the buffer zone during the entire nesting season unless the qualified wildlife biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends (whichever occurs first). If the nesting owls show signs of distress within a reduced buffer zone, and that stress is related to construction activities, the qualified wildlife biologist reinstate will the recommended buffers. The recommended buffers will only be reduced after the qualified biologist has determined that the nesting owls are no longer exhibiting signs of stress. Reporting regarding reduction of buffers will be documented in a written report and will follow the procedure described above.</p>	Ensure implementation of surveys and monitoring (if necessary) for burrowing owls	Prior to and during construction
Badgers	<p><b>APM BIO-11.</b> Badger dens will be clearly demarcated with appropriate flagging and signs and avoided if possible.</p>	Ensure badger dens are demarcated	Prior to and during construction
Badgers	<p><b>APM BIO-12.</b> If a badger den cannot be avoided, CDFW will be consulted to discuss the possible relocation of the badger.</p>	Implement CDFW recommendations if necessary	Prior to and during construction
Native and Invasive Species	<p><b>APM BIO-13.</b> The introduction of noxious weeds carried in with construction equipment will be minimized by ensuring the equipment is clean before it is arrives at the proposed substation site, Fulton No. 1 60 kV power line and distribution line alignment. In addition, only weed-free erosion control materials will be used on the project.</p>	Monitor implementation of this measure to minimize introduction of noxious weeds	During construction
Native and Invasive Species	<p><b>APM BIO-14.</b> Native seed mix will be used when restoring areas of grassland, oak woodland and wetland.</p>	Review use of native seed mix	During construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Special Status Plant Species	<p><b>APM BIO-15:</b> The valley oaks and oak woodlands will be denoted as environmentally sensitive and will be avoided to the extent practical. If any protected oak trees are removed, they will be replaced or compensated for in a manner that is consistent with the provisions in the Town of Windsor's Ordinance for Tree Mitigation.</p>	Ensure implementation to reduce impacts on oaks	During construction
Construction Phase Biological Resources Impacts	<p><b>MM B-1. Conduct environmental training, pre-construction surveys, and biological resources monitoring.</b> As described in APM BIO-1, ongoing special-status species/sensitive habitat education program for construction crews will be conducted by a qualified biologist (approved by CPUC) prior to the commencement of the project and during construction activities. Sessions will include discussion of the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA), the consequences of noncompliance with these acts, identification and values of habitats, and the importance of keeping all project activities and sediments within the designated work area. These requirements are supplemented by the following: training shall also address California Species of Special Concern and brochures addressing all potentially affected special-status species shall be provided to all crew members (in multiple languages if appropriate).</p> <p>As described in APM BIO-4, pre-construction surveys for special-status species shall be conducted prior to the start of construction. These requirements are supplemented by the following: pre-construction surveys shall be conducted by a qualified biologist (approved by CPUC) within 7 days of construction activities. If special-status species are found, CDFW, USFWS, and the CPUC shall be notified within 24 hours and consulted, as appropriate, to confirm appropriate avoidance measures. Project construction (in area where a special-status species is found) shall not begin until the qualified biologist determines that the required or appropriate avoidance, minimization, and mitigation measures have been implemented.</p> <p>As described in APM BIO-5, a biological monitor shall be present during grading activities and installation of the silt fence around the proposed substation site perimeter and needed areas along the distribution line alignment. The monitor will complete daily reports summarizing construction activities and environmental compliance. These requirements are supplemented by the following: monitoring shall be conducted by a qualified biologist (approved by CPUC). Daily biological monitoring shall be required during all construction activities near sensitive resources, including special-status species, wetlands, vernal pools, and oak woodlands. If appropriate (based on the phase and location of construction activities), PG&amp;E may request that the CPUC allow less frequent monitoring.</p>	Review training materials, ensure all workers are trained	Prior to and during construction
Special Status Plants, Wetlands, and Vernal Pools	<p><b>MM B-2. Preserve special-status plants, wetlands and vernal pools.</b> Special-status plants identified in the survey area were all located within vernal pools. The following avoidance and minimization measures will be used to protect both listed special-status plants and to avoid impacts to wetlands and vernal pools:</p> <p>¾ Design project and construction activities to avoid impacts to wetlands and water features to the extent feasible.</p>	Ensure implementation to minimize impacts on special status plants, vernal pools, and wetlands. Review compensatory mitigation if necessary.	Prior to construction and during construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
<p>¾ Prior to the onset of construction activities, a qualified biologist (approved by the CPUC) shall delineate any wetland or water features within the right of way as environmentally sensitive areas using clear markers. Construction crews shall be provided with maps of environmentally sensitive areas.</p> <p>¾ PG&amp;E shall employ best management practices to avoid wetland impacts. These BMPs may include using padding or vehicles with balloon tires or other protective measures if temporary access roads or other construction activities occur in wetland areas.</p> <p>¾ There are three pole replacement locations that are located near vernal pool habitat (see <i>Biological Resources Figure, map set – poles a7, a8 and a10</i>). The following additional avoidance measures will be used in these particular locations and in any additional areas where work is required in or adjacent to a vernal pool:</p> <ul style="list-style-type: none"> <li>– Any project activities at these locations shall only take place between June 15 and September 30, after a qualified biologist (approved by CPUC) determines that vernal pools are dry and special-status plant species have completed their entire lifecycle for the year (i.e., seeds have set).</li> <li>– A qualified biologist (approved by the CPUC) shall be present during construction activities within the vicinity of these three locations. The biologist shall ensure that fencing remains intact and that construction activities do not affect the delineated vernal pool areas.</li> <li>– In the event that it is infeasible to completely avoid a vernal pool, and any associated listed plant species, PG&amp;E will use the following additional avoidance measures: (1) No construction equipment will enter the vernal pool; and (2) Tarps will be placed over the vernal pool to ensure that no excavated soil mixes with the vernal pool vegetation and soils when the pole is removed.</li> <li>– The following additional avoidance measures will be used at one pole replacement (see <i>Biological Resources Figure, map set – pole a10</i>), which is located adjacent to a vernal pool: (1) The exposed hole from the removed pole will be filled with a clay material that supports vernal pool re-establishment; and (2) The new pole will be installed as far outside of the vernal pool as feasible.</li> </ul>	<p><b>Compensatory mitigation for special-status plants.</b> If impacts to listed plants cannot be avoided, PG&amp;E shall work with CDFW and USFWS to ensure that the impact is fully mitigated with compensation measures that are consistent with the Santa Rosa Plain Conservation Strategy, as applicable; these measures may include: habitat acquisition and long-term habitat enhancement, purchase of mitigation credits at mitigation banks approved by CDFW and USFWS to mitigate for the plant species impacted. Any necessary mitigation strategy will include adequate funding to ensure long-term management and monitoring.</p>	<p><b>Compensatory mitigation for vernal pools.</b> If impacts to wetlands and vernal pools cannot be completely avoided, PG&amp;E will consult with the appropriate agencies to ensure that there is no net loss of wetlands or vernal pools. In consultation with the appropriate resource agencies, PG&amp;E may take the following actions to ensure the no net loss of wetlands or</p>	

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	<p>vernal pools, including (1) purchase of mitigation credits in an agency-approved wetlands mitigation bank with a service area that includes the project site, or (2) creation of wetlands according to an agency-approved plan. Any created wetlands shall emulate wetlands affected by the project. Any wetland preserve established on or offsite shall be permanently protected through fee title transfer to a qualified agency or conservation organization, through recordation of a conservation easement deed over the protected property, or some similar deed restriction. Prior to any ground disturbance, a wetland creation and preservation plan shall be approved by the applicable resource agencies.</p>		
Nesting Birds	<p><b>MM B-3. Identify and relocate northwestern pond turtles.</b> If northwestern pond turtles are found near any proposed construction areas, impacts to individuals and their habitat shall be avoided to the extent feasible. To avoid impacts to occupied habitat, an exclusion zone shall be established around the habitat and temporary plastic fencing shall be installed around the buffer area with "Sensitive Habitat Area" signs posted and clearly visible on the outside of the fence. If avoidance is not possible and the species is determined to be present in work areas, the biologist (approved by the CPUC) shall capture turtles prior to construction activities and relocate them to nearby, suitable habitat (the closest water body) out of harm's way (e.g., upstream or downstream from the work area). PG&amp;E shall consult with CDFW regarding any required relocation of western pond turtles.</p> <p>If deemed necessary by the on-site biological monitor, exclusion fencing shall be installed to prevent turtles from re-entering the work area. For the duration of work in these areas the biologist should conduct regular follow-up visits (at least once per week) to monitor effectiveness and take appropriate corrective action if protection measures are not adequate. Milestones and Monitoring. Preconstruction surveys shall be conducted by qualified biologist (approved by CPUC) before ground disturbance. Any exclusion fencing that is installed to prevent western pond turtles from entering the work areas will be inspected by the on-site biological monitor to maintain the integrity of the fence. Monitoring of habitat and exclusion fencing shall be conducted by a qualified biological monitor during construction activities as necessary.</p>	<p>Ensure implementation to protect northwestern pond turtles</p>	<p>Prior to construction and during construction</p>
Wetlands	<p><b>MM B-4. Protect nesting birds.</b> If construction activities occur during the avian nesting season (February 1 through September 15), a preconstruction survey for nesting birds (including raptors) shall be conducted by a qualified wildlife biologist (approved by the CPUC) 7 days or less before the start of vegetation removal or trimming and ground-disturbing construction activities, and prior to the start or re-start of construction in any new work area. If there is no work in an area for 7 days, it will be considered a new work area if construction or vegetation trimming or removal begins again. At least 10 days before construction activities begin during nesting season, PG&amp;E shall confer with CPUC and CDFW on nesting bird survey methodology. Survey will be submitted to CPUC for record keeping.</p> <p>No additional measures will be implemented if active nests are more than the following distances from the nearest work site: (a) 500 feet for raptors, or (b) 250 feet for passerine</p>	<p>Ensure implementation of surveys and buffers to protect nesting birds</p>	<p>Prior to and during construction</p>



Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	<p>birds. Buffers shall not apply to construction-related traffic using existing roads that is not limited to project-specific use (i.e., county roads, highways, farm roads, etc.).</p> <p>All references in this mitigation measure to wildlife biologists refer to qualified biologists approved by the CPUC; these biologists may be PG&amp;E employees or subcontractors. References to independent avian biologists refer to qualified avian biologists approved by the CPUC who report directly to CPUC.</p> <p><b>Buffer reduction.</b> The specified buffer sizes for birds may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity) and as determined by a qualified wildlife biologist that implementation of a specified smaller buffer distance will still avoid project-related "take" (as defined by Fish and Game Code Section 86). Requests to reduce standard buffers must be submitted to the independent avian biologist(s) to be reviewed in coordination with the California Department of Fish and Wildlife (CDFW). Requests to reduce buffers must include: the species, location, size and expected duration of proposed buffer reduction, reason for the buffer reduction, the name and contact information of the qualified wildlife biologist(s) who request the buffer reduction and will conduct subsequent monitoring. The independent avian biologist shall respond to PG&amp;E's request for a buffer reduction within 24 hours.</p> <p>Non-special status species found building nests within the standard buffer zone <i>after specific project activities begin</i>, shall be assumed tolerant of that specific project activity and such nests will be protected by the maximum buffer practicable (as determined by the qualified biologist). However, these nests shall be monitored on a daily basis by a qualified biologist until the qualified biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the buffer zone (whichever occurs first). If the qualified biologist determines that the nesting bird(s) are not tolerant of project activity, the standard buffer shall be implemented. As appropriate, exclusion techniques may be used for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment.</p> <p>If nesting birds show signs of distress within a reduced buffer zone and that stress appears to be related to construction activities, the qualified wildlife biologist shall reinstate the recommended buffers. The recommended buffers may only be reduced again following the same process as identified above after the qualified biologist has determined that the nesting birds are no longer exhibiting signs of stress. Reporting regarding reduction of buffers will be documented in the monthly report.</p> <p><b>Listed and Fully Protected Species.</b> If the qualified wildlife biologist determines that there are nests of listed or fully protected bird species within 500 feet of project activities, consultation with CPUC and CDFW (and USFWS as appropriate) shall be required to discuss how to implement the project and avoid "take." If avoidance of state or federally listed species is not feasible, the applicant shall work with CDFW and and/or USFWS (as appropriate) to determine the necessary avoidance measures and possibly to obtain take authorization, as appropriate and necessary.</p>		

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	<p><i>Monitoring and reporting.</i> All nests with a reduced buffer shall be monitored on a daily basis by a qualified wildlife biologist until the biologist has determined that the young have fledged, are no longer dependent upon parental care, or construction ends within the reduced buffer (whichever occurs first). A monthly written report shall be submitted to CDFW and CPUC. Monthly reports shall include: all of the information included in buffer reduction requests in addition to duration of buffer reduction, and outcomes for nests, eggs, young and adults during construction within a reduced buffer. No reporting will be required if construction activities do not occur within a reduced buffer during any calendar month. A final report shall be submitted to CDFW and CPUC at the end of each nesting season summarizing all monitoring results and outcomes for the duration of project construction.</p>		
Special-status bats	<p><b>MM B-5. Protect special-status bats.</b> Before the spring breeding season and prior to construction, a qualified biologist (approved by the CPUC) shall conduct a survey for roosting bat habitat. The survey shall include work areas adjacent to appropriate roosting habitat and are accessible from public or project areas within 200 feet of a work area. For trees considered to have a high or moderate probability for bat roosting, acoustic monitoring shall be conducted before any construction activities begin during the breeding season to determine if there are any roosting sites present. Surveys shall be conducted at the appropriate times to maximize detectability. At least ten days before surveys begin, PG&amp;E shall confer with CPUC and CDFW on bat survey methodology. Survey will be submitted to CPUC for record keeping.</p> <p>Note: All references in this mitigation measure to biologists or biological monitors refer to qualified biologists approved by the CPUC; these biologists may be PG&amp;E employees or contractors. References to independent biologists refer to qualified biologists approved by the CPUC who report directly to the CPUC.</p> <p>If an active roost or maternity roost is found within 100 feet of a work area, the limits of the work area will be clearly marked and a qualified biological monitor shall remain on-site during construction activities within the vicinity of the roost or maternity roost. The biologist shall ensure that construction activities do not encroach upon the 100 foot buffer around an active roost or maternity colony site. Buffers shall remain in place until the qualified biologist has determined that bats have vacated the occupied roost sites.</p> <p>Trees containing maternity roosts shall not be removed during the breeding season (March 1 through August 31) to avoid disturbing females with young that cannot fly. No trees containing maternity roosts may be removed until the qualified biologist determines that breeding is complete and young are able to fly.</p> <p>Requests to reduce buffers or exclude bats shall be submitted to CPUC for review by the CPUC's independent biologist in consultation with CDFW. The CPUC's independent biologist shall respond to requests to reduce buffers within 24 hours and shall respond to requests to exclude bats within 5 days. Exclusion plans may include the following:</p> <p><sup>3</sup>/<sub>4</sub> If fall/winter hibernacula cannot be avoided, humane techniques may be implemented to passively vacate bats from roosts. Methods to passively evict bats from tree roosts may</p>	Ensure implementation of surveys and buffers to protect roosting bats	Prior to and during construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	<p>include incrementally trimming limbs to alter the air flow and temperature around the roost feature where slight changes to the surrounding environment of roost features encourage bats to vacate roost features on their own.</p> <p>¾ If acoustic monitoring detects that bats are using trees that need to be cut down, exclusionary one-way doors shall be installed in late August, after completion of the maternity season. Roost trees shall be removed after it has been confirmed that roosting bats have departed.</p> <p>¾ If a roost is lost, PG&amp;E shall consult with the CDFW to see to see if additional compensation for loss of habitat is required. Required compensation may include bat boxes be installed in the vicinity of the cut tree.</p> <p>If an exclusion plan is approved by the independent biologist (in consultation with CDFW), PG&amp;E shall submit a report to CPUC and CDFW after exclusion activities are completed describing the exclusion process and bat behavior after the implementation of the exclusion plan. All exclusion activities shall be closely monitored by the qualified biologist. If buffer reductions are requested and approved, a monthly report shall be submitted to CPUC and CDFW with all of the information in the buffer reduction requests, monitoring results, and effects on bats. Reports shall be submitted for the duration of construction activities within buffer areas.</p>		
<b>Cultural Resources</b>			
Construction Phase Cultural Resource Impacts	<p><b>APM CU-1.</b> Prior to the initiation of construction or ground-disturbing activities, PG&amp;E will train all construction personnel to understand the potential for exposing subsurface cultural resources and to recognize possible buried cultural resources. Training will inform all construction personnel of the anticipated procedures that will be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains and their treatment.</p>	Avoid unanticipated cultural resources, train project workers	Prior to and during construction
Construction Phase Cultural Resource Impacts	<p><b>APM CU-2.</b> Upon discovery of possible buried cultural materials (including potential Native American skeletal remains), work in the immediate area of the find will be halted and PG&amp;E's archaeologist notified. Once the find has been identified and evaluated, PG&amp;E's archaeologist will make the necessary plans for treatment of the find(s) and mitigation of impacts if the finds are found to be significant according to CEQA. State law will be followed in the event of the exposure of Native American skeletal remains.</p>	Construction personnel sign an environmental training attendance sheet. No damage to archaeological resources results from project construction.	During construction
Construction Phase Cultural Resource Impacts	<p><b>APM CU-3.</b> In the event human remains are encountered during the project, work in the immediate area 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 identify a Most Likely Descendent. The Most Likely Descendent will consult with PG&amp;E's archaeologist to determine further treatment of the remains.</p>	No damage to human remains results from the project. Any discovered cultural resources are treated according to agency-approved mitigation and in compliance with State and federal regulations.	Prior to and during construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Previously Identified Cultural Resources	<b>MM C-1. Mark limits of project area near known cultural resources.</b> In areas near identified cultural resources, a qualified cultural resources specialist (approved by the CPUC) shall mark the limits of the project area with visible flagging tape. The construction crews shall be instructed that no vehicle access, travel, equipment staging, storage, or other construction-related work shall occur outside the flagged areas to ensure that known historic resources are not inadvertently damaged during implementation of the project.	Flag and avoid known cultural resources	Prior to and during construction
Previously- Unidentified Archaeological Resources	<b>MM PAL-1. Avoid previously unidentified paleontological resources.</b> If paleontological remains are discovered during construction, construction will cease or be directed away from the discovery, and the potential resource will be evaluated by a qualified paleontologist. The paleontologist will recommend appropriate measures to avoid, record, preserve, or recover the resource/s.	Any discovered paleontological resources are assessed and treated appropriately	During construction
<b>Hazards and Hazardous Materials</b>			
Construction Phase Hazardous Material Impacts	<b>APM HM-1.</b> Hazardous Substance Control and Emergency Response Plan will be prepared for the project. It will prescribe hazardous material handling procedures to reduce the potential for a spill during construction or exposure of the workers or public to a hazardous material. The plan will provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during field activities.	Review the Hazardous Substance and Emergency Response Plan and ensure adequacy	Prior to construction
Construction Phase Hazardous Material Impacts	<b>APM HM-2.</b> Emergency-spill supplies and equipment will be clearly marked and immediately available at all work areas. Oil-absorbent materials, tarps, and storage drums will be used to contain and control any minor releases. Detailed information for responding to accidental spills, and for handling any resulting hazardous materials, will be provided in the project's Hazardous Substances Control and Emergency Response Plan.	Ensure control of project-related spills and provide spill response information to the regulatory agencies	During construction and operations
Construction Phase Hazardous Material Impacts	<b>APM HM-3.</b> An environmental training program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention, and will include a review of the Hazardous Substances Control and Emergency Response Plan and the Stormwater Pollution Prevention Plan (SWPPP).	Review worker environmental awareness training program	Prior to construction
Construction Phase Hazardous Material Impacts	<b>APM HM-4.</b> If contaminated soils or groundwater due to VOCs, xylene, or other contaminants are encountered, appropriate abatement actions would be implemented in accordance with applicable regulatory requirements.	Prevent contamination of soil or groundwater. Review abatement actions	During construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Construction Phase Hazardous Material Impacts	<p><b>MM HAZ-1. If contaminated soil is encountered, ensure proper sampling, data review, regulatory coordination, and documentation of compliance.</b> If construction crews uncover unanticipated buried contaminated soils, rock, or groundwater during substation construction or excavation activities associated with distribution work, samples shall be collected by an OSHA-trained technician with a minimum of 40-hours hazardous material site worker training. Laboratory data from suspected contaminated material shall be reviewed by the contractor's Health and Safety Officer and/or PG&amp;E's representative and they shall coordinate with the appropriate regulatory agency if contamination is confirmed, to determine the suitable level of worker protection and the necessary handling and/or disposal requirements.</p> <p>If during grading or excavation work, the contractor observes visual or olfactory evidence of contamination in the exposed soil, a report of the location and the potential contamination, results of laboratory testing, recommended mitigation (if contamination is verified), and actions taken shall be submitted to the CPUC for each event. This report shall be submitted within 30 days of receipt of laboratory data.</p>	Collect and analyze soil samples and, if contamination is discovered, ensure that construction activities are conducted according to a health and safety plan approved by regulatory agencies.	Prior to construction and during construction
<b>Hydrology and Water Quality</b>			
Construction phase water quality impacts	<b>APM WQ-1.</b> All BMPs will be on-site and ready for installation before the start of construction activities.	Review and approve BMPs and ensure installation	Prior to construction
Stormwater Pollution	<p><b>APM WQ-2.</b> PG&amp;E will develop a Stormwater Pollution Prevention Plan (SWPPP), as outlined in General Permit 2009-0009-DWQ, which will describe BMPs to prevent the acceleration of natural erosion and sedimentation rates. The SWPPP will include a written site-specific Construction Site Monitoring Program (CSMP). A monitoring program will be established to ensure that the prescribed BMPs are followed during project construction. BMPs will include:</p> <ul style="list-style-type: none"> <li>¾ silt fences or other sediment containment methods placed around and/or down slope of disturbed areas prior to construction;</li> <li>¾ protection of drain inlets from receiving polluted stormwater through the use of filters, such as fabrics, gravel bags, or straw wattles;</li> <li>¾ installation of additional silt fencing prior to construction along the northwest and south edges of the proposed substation site to address unforeseen runoff from the property into the nearby existing mitigation bank/preserve and mitigation area;</li> <li>¾ construction of a stabilized construction entrance/exit to prevent tracking onto roadway;</li> <li>¾ 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</li> <li>¾ 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 over secondary containment.</li> </ul>	Review and approve SWPPP and CSMP. Prevent pollution of stormwater related to the project.	Prior to and during construction.

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Construction phase water quality impacts	<b>APM WQ-3.</b> A worker education program will be established for all field personnel prior to initiating fieldwork to provide training in the appropriate application and construction of erosion and sediment control measures. This education program will also discuss appropriate hazardous materials management and spill response.	Review worker environmental awareness training program	Prior to construction
Stormwater pollution	<b>APM WQ-4.</b> All BMPs will be inspected on a weekly basis, and at least once every 24-hour period during extended storm events. BMPs will be inspected as described in the SWPPP, maintained on a regular basis, and replaced as necessary through the course of construction. For each inspection required, an inspection checklist will be completed using a form as described in Attachment C of General Permit 2009-0009-DWQ. This checklist will remain onsite with the SWPPP.	Weekly BMP inspection, and once-per-24 hour inspection during storm events. Regular maintenance and replacement. Complete required onsite inspection checklists.	During construction and operations
Stormwater pollution	<b>APM WQ-5.</b> The SPCC plan will include engineered methods for containing and controlling an oil release, including a water-collection system and retention pond equipped with an oil/water separator. Oil-absorbent material, tarps, and storage drums will be present on-site to contain and control any minor releases.	Review SPCC plan and ensure implementation	Prior to and during construction and operations
Jurisdictional Waters	<b>APM WQ-6.</b> Permits may need to be obtained prior to construction from the Army Corps of Engineers (404), Regional Water Quality Control Board 401 Certification, and California Department of Fish and Game Streambed Alteration agreement (1600) if any identified jurisdictional waters are found within proposed substation site.	Ensure acquisition of required permits	Prior to construction
Construction phase water quality impacts	<b>APM WQ-7.</b> Construction work would avoid all wetlands, swales and drainages during construction. If waters areas could not be avoided, work would be performed outside of the wet season.	Monitor construction to ensure avoidance of water features	During construction
Construction phase water quality impacts	<b>APM WQ-8.</b> Vehicle maintenance wastes, including used oils and other fluids would be handled and disposed of properly. Fuels and lubricating oils for vehicles heavy equipment would not be stored or transferred within 100 feet of any water bodies.	Monitor construction to ensure appropriate waste disposal and/or storage	During construction
Water Quality	<b>MM H-1. Construction Site Dewatering.</b> If groundwater is encountered during construction activities, dewatering shall be performed in accordance with the 2011 or most recent version of the <i>Construction BMP Handbook/Portal</i> prepared by the California Stormwater Quality Association (CASQA), and shall include, as applicable, the use of sediment traps and sediment basins.	Monitor dewatering to ensure appropriate implementation	During construction

**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
<b>Land Use</b>			
Construction Land Use Impacts	<p><b>MM LU-1. Provide advance notice of construction.</b>  <i>Advance Notice.</i> Prior to construction, the Applicant shall give at least <del>10</del> 30 days advance notice of the start of any construction-related activities. Notification shall be provided by posting signs along affected roadsides to tell the public about the work. The posted signs shall:</p> <ul style="list-style-type: none"> <li>¾ Describe where and when construction is planned;</li> <li>¾ Provide contact information for a point of contact for complaints related to construction activities.</li> </ul> <p>Prior to commencing ground disturbing activities, the Applicant shall submit a copy of the template used for the posted sign.</p> <p><i>Reporting of Complaints.</i> The Applicant shall document all complaints and strategies for resolving complaints in regular reporting to the CPUC .</p>	Review and approve notification template prior to posting. Review reported complaints as necessary.	Prior to and during construction.
<b>Noise</b>			
Construction Phase Noise Impacts	<b>APM NO-1.</b> All construction equipment will use noise-reduction features (such as mufflers) that are no less effective than those originally installed by the manufacturer.	Review proposed noise-reduction features	Prior to construction.
Construction Phase Noise Impacts	<b>APM NO-2.</b> Construction will be limited 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 take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.	Monitor construction to ensure time limits are maintained.	During construction
Construction Phase Noise Impacts	<b>APM NO-3.</b> Construction crews will limit unnecessary engine idling. (See Air Quality measures.)	Monitor to ensure idling is limited	During construction
Construction Phase Noise Impacts	<b>APM NO-4.</b> Construction crews will use equipment that is specifically designed for low noise emissions.	Review and approve construction equipment	Prior to construction
Construction Phase Noise Impacts	<b>APM NO-5.</b> Locate all stationary construction equipment as far as practical from noise sensitive receptors.	Review stationary equipment locations to ensure minimization of noise impacts	Prior to construction
Construction Phase Noise Impacts	<b>MM N-1: Avoid unnecessary construction traffic noise.</b> Where feasible, construction traffic shall be routed to avoid noise-sensitive areas, such as residences, schools, religious facilities, hospitals, and parks.	Ensure that routing effectively minimizes impacts to sensitive areas	During construction



**Table 6-1. Mitigation Monitoring Plan**

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
<b>Traffic/Transportation</b>			
Construction Traffic	<b>MM T-1. Restrict lane closures.</b> PG&E shall restrict all necessary lane closures or obstructions on major roadways associated with overhead or underground construction activities to off-peak periods in congested areas to reduce traffic delays. Lane closures must not occur between 6:00 and 9:30 a.m. or between 3:30 and 6:30 p.m., unless otherwise authorized in writing by the responsible public agency issuing an encroachment permit.	Ensure that lane closures and obstructions are appropriately implemented.	During construction
Construction Traffic	<b>MM T-2. Ensure emergency response access.</b> PG&E shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services serving the project area shall be notified 30 days in advance by PG&E of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where roads will be temporarily blocked, work crews shall be ready at all times to accommodate emergency vehicles through immediately stopping work for emergency vehicle passage and/or facilitating the use of short detours and alternate routes in conjunction with local agencies.	Review notification of and coordination with emergency service providers	Prior to and during construction.
Public Transportation	<b>MM T-3. Consult with SCT and SMART.</b> PG&E shall consult with Sonoma County Transit District at least one month prior to construction to reduce potential interruption of bus transit services. If necessary, PG&E shall arrange for transit bus routes to be temporarily rerouted until construction in the vicinity is complete. PG&E shall obtain approval from SMART to encroach on the railroad right-of-way.	Review SCTD consultation, SMART approval, and, if necessary, bus reroutes to ensure minimization of impacts	Prior to and during construction.

Source: PG&E 2010; PG&E 2011.

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## 7. Responses to Comments

This section presents responses to the comments received during the public review period for the Mitigated Negative Declaration (July 15, 2013 through August 14, 2013). A newspaper notice, including information on the Draft IS/MND, the project website address, and the dates of the comment period, was published in the Santa Rosa Press Democrat on July 15, 2013 (see Appendix D for a copy of the notice).

The CPUC received three public comments. State and local agencies, the public, and the Applicant were notified of the intent to adopt the Mitigated Negative Declaration.

Table 7-1 lists the persons and agencies that submitted comments on the Proposed MND. The individual comments are numbered, and responses immediately follow the comment letter. If revisions were made to the MND and supporting Initial Study based on the comments, the revisions are provided with the response to the specific comment and are indicated in the text of this Final MND with ~~strikeout~~ for deletions of text, and in underline for new text.

**Table 7-1. Comments Received on the Draft Mitigated Negative Declaration**

Commenter	Date Received	Comment Set Number
Linda Kelly, Town Manager – Town of Windsor	8/13/13	A1
David Randolph	8/7/13	E1
Christina Holstine, Senior Land Planner – Pacific Gas & Electric Company	8/14/13	F1

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## Comment Set A1 Town of Windsor



**Town of Windsor**  
9291 Old Redwood Highway  
P.O. Box 100  
Windsor, CA 95492-0100  
Phone: (707) 838-1000  
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[www.townofwindsor.com](http://www.townofwindsor.com)

**Mayor**  
Robin Goble

**Vice Mayor**  
Bruce Okrepkie

**Councilmembers**  
Steve Allen  
Debora Fudge  
Sam Salmon

**Town Manager**  
Linda Kelly

August 13, 2013

Mr. Eric Chiang  
California Public Utilities Commission  
c/o Aspen Environmental Group  
235 Montgomery Street, Suite 935  
San Francisco, CA 94104-3002

VIA FACSIMILE AND EMAIL

Dear Mr. Chiang,

The Town of Windsor appreciates the opportunity to review the Mitigated Negative Declaration for the PG&E Windsor Substation Project (Application No. A.10-04-024). The Town continues to support the construction of the local substation at the proposed location (Nase property). Please accept the following comments and recommendations related to the Mitigated Negative Declaration that we feel will mitigate significant environmental impacts and create a project that meets the expectation of the citizens of Windsor.

### 5.10 Land Use and Planning

A key question in the Initial Study attempts to gauge if the project is consistent with existing land use plans that have been implemented to protect the environment, specifically:

*“Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?”*

The Town has adopted many policies applicable to development projects in an effort to protect public health, safety, and welfare, which in many cases, includes the environment. A private development project similar to the substation would be subject to the following Town plans and policies:

- Complete Street Design Guidelines (2013),
- Design and Construction Standards (2011),
- Calthorpe/Solomon Town of Windsor Design Standards (1997),
- Frontage Improvements Ordinance (2003),
- Storm Water Quality Ordinance (2008),
- Windsor Bicycle and Pedestrian Master Plan (2008), and
- The North Old Redwood Highway Area Utility Infrastructure Study (2012)

A1-1

## Comment Set A1, cont. Town of Windsor

In order to be consistent with these plans and policies, the Town recommends the approved project should be required to include the following design elements:

A1-1 cont.

1. *In accordance with Complete Street Design Guidelines, Frontage Improvements Ordinance, Design and Construction Standards and the Windsor Bicycle and Pedestrian Master Plan.*

A1-2

- a. The entire project frontage on Old Redwood Highway should include installation of a 14-foot wide maximum sidewalk with Town standard tree wells, a 6-foot class II bike lane, travel lane/roadway transition area, curb and gutter and dedication of sufficient right-of-way to accommodate the roadway improvements with an additional 5-foot Public Utility Easement behind the proposed right-of-way.

2. *In accordance with the Frontage Improvements Ordinance and the Design and Construction Standards.*

A1-3

- a. Installation of street lighting meeting Town standards along the project frontage.

3. *In accordance with the Storm Water Quality Ordinance.*

A1-4

- a. Adherence to Town of Windsor's storm water quality requirements.

4. *In accordance with the Frontage Improvements Ordinance.*

A1-5

- a. Undergrounding of new overhead electric utility lines (of 26,000 volts or less) to accommodate the new facility. This should include the 1.8 miles of lines that are proposed to be upgraded on Old Redwood Highway from the substation site to Downtown Windsor. If this is not technically feasible, PG&E should underground transmission lines from Starr Road and Old Redwood Highway to Downtown Windsor.

5. *In accordance with the Calthorpe/Solomon Town of Windsor Design Standards and the North Old Redwood Highway Area Utility Infrastructure Study.*

A1-6

- a. Provide a 25-foot wide easement along the westerly property boundary and the North West Pacific Rail Road right-of-way to accommodate a 22-foot wide trail corridor, and storm drainage/sanitary sewer improvements. A 20-foot access easement located on the project site from Old Redwood Highway to access the 25-foot easement.

Comment Set A1, cont.  
Town of Windsor

- 6. *In accordance with the North Old Redwood Highway Area Utility Infrastructure Study.*
  - a. A public storm drain system should be installed in Old Redwood Highway discharging to Sotoyome Creek to accommodate the concentrated flow from the installation of curb and gutter as referenced in Item 1a above. To the extent possible, the site drainage should be routed to the public storm drain system in Old Redwood Highway.
  
- 7. *In accordance with the North Old Redwood Highway Area Utility Infrastructure Study.*
  - a. Dedication of a 50-foot by 50-foot right-of-way for a future sanitary sewer pump station with a 20 foot wide access easement to the future pump station.

A1-7

A1-8

The Town appreciates this opportunity for inclusion in the project planning process and we look forward to working cooperatively with PG&E to include these recommendations into the final project. We request that we be informed in advance of any public hearings held by the CPUC regarding this project. Please contact Jim Bergman, Community Development Director at (707) 838-5335 for any information concerning the Town's position.

Sincerely,  
  
Linda Kelly, Town Manager

I:\60 - Community Development Dept\Planning Department\2006-10\09\09-41 PG&E Substation\Correspondence\PG&E MND Comment Letter 08-14-13.docx



## Responses to Comment Set A1 Town of Windsor

A1-1 In this comment, the Town Manager for the Town of Windsor states that it is important that the Initial Study (IS)/Mitigated Negative Declaration (MND) address project consistency with existing land use plans. The commenter notes that the Town of Windsor has adopted many policies to protect public health, safety, and welfare, and that private development would be subject to plans and policies listed in Comment A1-1. The commenter recommends numerous changes to the project to conform with these local plans and policies.

The CPUC appreciates the Town's comments on the Draft IS/MND. The currently proposed site for the Windsor Substation was identified as the preferred site by the Town of Windsor on August 25, 2011 after two public hearings. The commenter correctly notes that Section X(b) of the CEQA checklist asks:

"Would the project conflict with any applicable land use policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal project, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?"

As the Draft IS/MND describes, the CPUC has exclusive permitting authority over the substation project (see, for example, Section 5.10.1 [Land Use and Permitting, Setting] on Page 5-104). That is, the CPUC has preemptive jurisdiction over the construction, operation, and maintenance of public utility facilities within the State and, as such, discretionary approvals (e.g., use permits) from local agencies are not required.

While the proposed project is exempt from local land-use and zoning regulations and permitting, CPUC General Order 131-D Section 1X.B states that:

"Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

CPUC understands that PG&E has consulted with the Town of Windsor and has redesigned elements of the proposed project to incorporate some requested improvements and to allow the Town to purchase easements in areas of the substation site for installation of future improvements. In addition, PG&E has agreed to install a wall around the substation and landscaping along Old Redwood Highway and Herb Lane (as discussed in Section 5.1, Aesthetics). PG&E responded to the Town's requests for the improvements described in the Town's comments in letters from Joe Horak to Patrick Givone (Assistant Engineer, Town of Windsor) delivered the week of May 20, 2013 and from Jo Lynn Lambert to Stuart Hayre (Principal Civil Engineer, Town of Windsor) dated May 23, 2013.

Because the proposed substation would be a remotely controlled facility supporting the electrical system in the Town and surrounding areas, it would not trigger the need for additional Town infrastructure. In addition, the Draft IS/MND properly identifies the Town's General Plan goals that relate to locating the substation, and concludes that the project is consistent with them (see Draft MND, Section 5 pages 5-104 to 5-105).

A1-2 This Town of Windsor comment states that in accordance with listed Town policies (Complete Street Design Guidelines, Frontage Improvements Ordinance, Design and Construction Standards and the Windsor Bicycle and Pedestrian Master Plan), the entire project frontage on Old Redwood Highway should include the installation of a 14-foot-wide (maximum) sidewalk with Town standard tree wells, a 6-foot class II bike lane, travel lane/roadway transition area, curb and gutter and dedication of sufficient right-of-way to accommodate the roadway improvements with an additional 5-foot Public Utility Easement behind the proposed right-of-way.

These requested improvements are not present north or south of the proposed substation site. However, PG&E has designed the substation site to allow sufficient space for the Town to implement sidewalk and bike lane improvements in the future. In its May 2013 letters to the Town of Windsor, PG&E agreed to install curb and gutter and dedicate a 5-foot-wide public utility easement. The cost of the curb and gutter would be placed in trust so that it can be installed when the Town implements its planned improvements along Old Redwood Highway in the future. The CPUC believes the other requested improvements are not sufficiently related to the impacts of the substation to warrant requiring PG&E to implement them.

A1-3 This comment states that the proposed project should incorporate installation of street lighting meeting Town of Windsor standards along the project frontage in accordance with the Town's Frontage Improvements Ordinance and the Design and Construction Standards. Planned lighting for the proposed project is described in Section 4.9.4 of the Project Description on Page 4-6 of the Draft IS/MND. The CPUC does not believe that the proposed project warrants requiring PG&E to implement the requested improvements. See Response to Comment A1-1 and A1-2.

A1-4 This Town comment states that the proposed project should adhere to the Town's storm water quality requirements in accordance with the Town's Storm Water Quality Ordinance. Because of the CPUC's exclusive jurisdiction, the proposed project is not subject to the Town's Standard Urban Storm Water Mitigation Plan (SUSMP) or its Storm Water Ordinance. See Response to Comment A1-1. However, in its May 2013 letters to the Town, PG&E committed to working with the Town of Windsor on storm water and drainage issues to ensure that potential project impacts are addressed. As noted in Section 5.9 (Hydrology and Water Quality) in the Draft IS/MND, the project will comply with all state and federal water quality regulations.

A1-5 This comment indicates that in accordance with the Town of Windsor's Frontage Improvements Ordinance the proposed project should include undergrounding of overhead utility lines. The comment states that this should include the 1.8 miles of lines along Old Redwood Highway that would be upgraded under the proposed project. The comment requests that if this is not technically feasible, that the Applicant should underground transmission lines from Starr Road and Old Redwood Highway to Downtown Windsor.

As described in Sections 4.9.7 (Distribution Lines) and 4.12.3 (Underground Installation) in the Project Description, the proposed project would involve underground work in areas where distribution lines are currently underground; the proposed project does not involve undergrounding utilities that are currently overhead. Based on the existing setting along Old Redwood Highway and the additional cost required for undergrounding,

the CPUC does not believe that requiring additional undergrounding is warranted for the proposed project.

- A1-6 This comment from the Town states that in accordance with Town policies (Calthorpe/Solomon Town of Windsor Design Standards and the North Old Redwood Highway Area Utility Infrastructure Study), the Applicant should provide a 25-foot-wide easement along the western property boundary and the North West Pacific Rail Road right-of-way to accommodate a 22-foot-wide trail corridor, and storm drainage/sanitary sewer improvements. The comment also requests a 20-foot access easement on the project site from Old Redwood Highway to access the 25-foot easement.

In its May 2013 letters to the Town, PG&E committed to providing adequate space for the requested 25-foot easement, subject to compensation for the easement. PG&E indicated that the 20-foot access easement would not be possible, that the Town could access the area from Herb Lane if necessary. The CPUC does not believe additional accommodation of drainage and sewer improvements is necessary as part of the proposed project.

- A1-7 The Town comment states that in accordance with the North Old Redwood Highway Area Utility Infrastructure Study, the Applicant should install a public storm drain in Old Redwood Highway discharging to Sotoyome Creek to accommodate the concentrated flow from the installation of curb and gutter referred to in Response to Comment A1-2. The comment requests that to the extent possible, the site drainage should be routed to the public storm drain system in Old Redwood Highway.

Substation site drainage is described in Section 5.9.1 (Hydrology and Water Quality, Setting) in the Draft IS/MND. As noted in its May 2013 letter to the Town, PG&E has committed to complying with CPUC-regulated design standards and will work with the Town to address any potential storm water and drainage issues consistent with CPUC design standards. PG&E plans to provide funds (in trust) for future curb and gutter installation as described in Response to Comment A1-2. The CPUC does not believe additional stormwater improvements are necessary as part of the proposed project.

- A1-8 This comment from the Town of Windsor suggests that the proposed project should include dedication of a 50-foot by 50-foot right-of-way for a future sanitary sewer pump station with a 20-foot-wide access easement to the future pump station. As noted in PG&E's May 2013 letter to the Town, PG&E will (at least in the near-term) allow space for an easement for a future pump station. The Town's acquisition of such an easement would be subject to payment for the easement. Because the proposed project is an unmanned substation that would not generate sanitary waste, the CPUC does not believe that additional accommodations for a future sewer pump station are necessary as part of the proposed project.

## Comment Set E1 David Randolph

---

**From:** [davidra@sonic.net](mailto:davidra@sonic.net)  
**To:** [Windsor Substation Project Team](#)  
**Cc:** [matthew@sonomawest.com](mailto:matthew@sonomawest.com)  
**Subject:** Open Letter to Eric Chiang CPUC Apsen Environmental Group  
**Date:** Wednesday, August 07, 2013 12:44:28 PM

---

Dear Mr. Chiang,  
where you propose to build the new substation is in an area that is residential as well as commercial. If you're planning to connect up to the Fulton substation, why don't you build it closer to Fulton rather than on the other side of town, where indubitably it will be much more expensive to connect? Further, with all due respect, isn't it about time we turn the corner and get real? If you are not aware, Windsor is a Solar City and we are proud of this. It is time, in fact, way past time that we stop investing and perpetrating these outmoded and outdated energy technologies that are no longer sustainable nor frankly desired by the good folk of Windsor. Instead of building this new substation, while I realize this may serve well as yet another pork barrel boondoggle for a handful of the ultra wealthy, why you don't you do the right thing and give us locals solar panels? That way not only could we sell the needed energy back to you, but moreover eliminate the need for you to build yet another anachronistic and fat cat fattening dinosaur? Sincerely, on behalf of the children and future generations of Windsorites,  
David Randolph

cc: The Windsor Times

E1-1

## Responses to Comment Set E1

### David Randolph

- E1-1            The commenter asks why the proposed project is not located closer to the Fulton Substation. The commenter also states that instead of building the proposed substation, the applicant should give Windsor residents solar panels so that they can sell electricity.
- See Response to Comment A1-1 regarding the selection of the proposed project site. Regarding alternatives to the proposed project, CEQA does not require consideration of alternatives when a proposed project would not result in significant impacts after mitigation. Nevertheless, CPUC's GO 131-D requires that an application for a Permit to Construct 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.). Numerous locations were evaluated as potential sites for the proposed project as described in Section 4.17 (Project Description, Substation Site Alternatives). The need for the proposed project is described in Section 4.7 (Project Description, Purpose and Need).

## Comment Set F1 Pacific Gas & Electric Company



**Cristina Salguero Holstine**  
Senior Land Planner  
Corporate Real Estate  
(415) 973-7406

245 Market Street, Room 1054A  
San Francisco, CA 94105  
*Mailing Address:*  
Mail Code N10A  
P.O. Box 770000  
San Francisco, CA 94177

**August 14, 2013**

**Eric Chiang**  
California Public Utilities Commission  
c/o Aspen Environmental Group  
235 Montgomery Street, Suite 935  
San Francisco CA 94104-3002

**RE: PG&E Windsor Substation Project  
Draft Initial Study/Mitigated Negative Declaration**

Dear Mr. Chiang:

Pacific Gas and Electric Company (PG&E) appreciates the considerable effort expended by Commission staff and their consultants to prepare the environmental review for the proposed Windsor Substation Project (project), and welcomes the opportunity to submit the following minor comments and suggestions on the Draft Initial Study and Mitigated Negative Declaration (MND).

PG&E suggests the following minor revisions and corrections to the MND:

1. **Page 4-1, Section 4, Project Description.** The fourth paragraph, first bullet point states: "Pole replacement and line work would occur along Old Redwood Highway, Starr Road, and Gumview Road." This list should also include "Wilcox Road, Starr Circle, Railroad Avenue, and Joni Court."
2. **Page 4-8, Section 4.8.7.** In the first paragraph, please delete "at the Fulton No. 1 60 kV Power Line" since some of the circuits are not being capped there. All other information in this paragraph is correct.
3. **Figure 4-4** is dated PGE 2012. This should be dated PGE 2013.
4. **Page 4-10, Section 4.10.1, last paragraph.** For clarification, water used during construction may be supplied by sources other than the Town of Windsor, including potentially the nearby well adjacent to Herb Road or construction baker tanks.
5. **Page 4-12, Section 4.10.3 Construction Workforce and Schedule.** Please revise the sentence in the last paragraph regarding substation construction to state: "Substation

F1-1

F1-2

F1-3

F1-4

F1-5



## Comment Set F1, cont. Pacific Gas & Electric Company

Mr. Chiang  
August 14, 2013  
Page 2

- work (civil construction) would occur over eight months.” There may be other activities taking place on site, including distribution work, which will extend beyond the eight-month window until the completion of the project. F1-5 cont.
6. **Page 4-13, Section 4.11.1.** The last paragraph states: “The completed hole would be temporarily covered by the end piece of a conductor spool until installation of the new foundation.” Please delete: “by the end piece of a conductor spool,” so the sentence reads: “The completed hole would be temporarily covered until installation of the new foundation.” F1-6
7. **Page 4-14 through 4-17, Section 4.12 Reconductoring of Distribution Line and Power Line Underbuild.** The exact location of disposal sites used during construction for pulled wooden poles, excavated soil, soil transportation and removal could change depending upon the availability of disposal locations during construction. We suggest adding in language to allow for the use of different locations if certain off site disposal areas are unavailable during construction. (See Page 4-14 first paragraph (wood poles and sawdust); Page 4-16, (trenching soil); Page 4-17, (jack and bore material), and Page 4-17, last paragraph (horizontal directional drilling material).) F1-7
8. **Page 4-17, Jack and Bore.** “Placement [of the jack and bore entrance and exit pits under the railroad] would be determined by PG&E engineering design and a Town of Windsor encroachment permit.” Please revise this sentence to: “Placement would be determined by PG&E engineering design, Town of Windsor encroachment permit, and/or consultation with SMART, as appropriate.” F1-8
9. **Page 4-26, Section 4.17.** The sentence “Distribution work would be similar to the proposed substation site (Site 8)” is actually referencing a previously considered substation site. Please delete this statement to avoid confusion. All other references to Site 8 as the proposed site in this alternatives analysis are accurate. F1-9
10. **Page 4-19, APM AE-1.** This APM could be read to apply to the entire project. We recommend adding clarification that this measure is intended only to apply to the substation. F1-10
11. **Page 4-19, APM AQ-4.** To clarify the intent of this measure, we recommend adding the following phrase to the end: “Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites, if visible soil material is present.” F1-11
12. **Page 5-2 and 5-3, Section 5.1.1, Proposed Substation, last paragraph.** Please delete this paragraph as it applied to the Mitchell Lane site. A conceptual landscape plan was developed for the proposed project site on Old Redwood Highway (Figure 5.1-3) and provided to the Town of Windsor. No changes are proposed to this landscape plan, and it should be considered final. F1-12



## Comment Set F1, cont. Pacific Gas & Electric Company

Mr. Chiang  
August 14, 2013  
Page 3

13. **Page 5-3, fourth paragraph.** Please revise the third sentence to remove the reference to having security lighting on the north side as lighting may be placed on other sides of the substation as well. The sentence should read: “There would be free-standing light poles, approximately 12 feet tall placed around the substation.” F1-13
14. **Page 5-56, Section 5.4.2(b).** The MND states that “[i]f complete avoidance of vernal pools is not feasible, any permanent impacts to wetlands/vernal pools would be mitigated through purchase of mitigation credits or creation of wetlands based on an agency-approved plan.” PG&E may use tarps over vernal pools to avoid impacts to the area, which may not be technically considered ‘complete avoidance’ and should not be a trigger for purchase of mitigation credits or wetland creation. We recommend removing the beginning phrase, so that the sentence begins “Any permanent impact....” F1-14
15. **Page 5-57, Section 5.4.2(e).** The MND incorrectly states that PG&E has committed to complying with the Town of Windsor’s Tree Replacement Ordinance (Tree Ordinance). Due to the CPUC’s exclusive jurisdiction, the project is not subject to local regulations, including the Tree Ordinance. However, PG&E has agreed to replace trees in a way that is consistent with the Tree Ordinance. F1-15
16. **Page 5-79, Section 5.8, Hazards and Hazardous Material.** Reference is made in the introductory paragraph only to the Phase I Environmental Site Assessment by ERM in 2011; please add a reference to the Phase II assessment performed in January 2011. F1-16
17. **Page 5-97, Section 5.9.1, first paragraph.** Under the applicable regulations section, the MND includes reference to the Town of Windsor Storm Water Quality Ordinance No. 2008-249; however, this local ordinance does not apply to PG&E’s project. PG&E will comply with all applicable state storm water and water quality regulations associated with the project. F1-17
18. **Page 5-105, Section 5.10, Mitigation Measure LU-1.** The current notice provision in LU-1 requires signs to be posted along the affected roadways at least 30 days prior to construction. Construction will be taking place in many areas of town; having signs up more than 30 days ahead may be confusing to residents and create unnecessary visual blight. In addition, construction in some areas will be fairly brief. We suggest that the measure be revised to “at least 10 days advance notice” so that the noticing is not as intrusive to residents. F1-18
19. **Page 5-106, Section 5.10.2 (c), last paragraph.** Please delete the reference to Mitigation Measure B-5 (agency coordination and approval of a plan for construction within the preserve). This is an outdated reference; Mitigation Measure B-5 currently pertains to bats. F1-19
20. **Page 5-117, Section 5.13.2(a).** For reasons stated above under Comment #5, please revise the sentence in the first paragraph to read: “Substation (civil) construction would F1-20

## Comment Set F1, cont. Pacific Gas & Electric Company

Mr. Chiang  
August 14, 2013  
Page 4

require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over six to seven months.”

F1-20 cont.

21. **Page 5-120, Section 5.14.2(c), Schools.** Please revise the first sentence regarding substation construction and distribution to state: “Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over approximately six to seven months.” The distribution timeframe should be revised to be consistent with the statements made in Section 5.13 and Section 5.16.

F1-21

22. **Page 5-123, Section 5.16.1, Setting, second paragraph.** “Old Redwood Highway borders the project substation site to the east; access to the substation site parcel would be directly off of Old Redwood Highway via a newly-installed curb cuts and driveways on the east side of the parcel”. Please revise to “...via driveways and future curb cuts on the east side of the parcel.”

F1-22

23. **SECTION 6, Table 6-1.** Please revise APM Bio-7 in Table 6-1 to be consistent with the APM BIO-7 description in Section 4. Project Description.

F1-23

24. **Section 5.4, Biology, Page 5-43.** The last sentence in the paragraph states: “If the PBO for ACE is not applicable, then a separate biological opinion from USFWS may be required for work at the proposed substation site”. As indicated on Page 5-51, we do not believe the project will significantly affect federally listed species. Accordingly, we recommend rewording this statement to, “If the proposed project cannot meet the permit qualifications and may affect the California tiger salamander and/or three plant species on the Santa Rosa Plain, then a consultation with the USFWS may be required for work at the proposed substation site”.

F1-24

25. Our PEA was submitted with all dimensions identified as ‘approximate’ because final engineering is not yet complete. We believe it is important to keep this flexibility language in the MND to avoid the need for any future project modifications. We have enclosed a bullet point list of the specific areas in which we believe the word “approximate” should be included (See Errata Sheet A).

F1-25

As a final note, we wished to point out that the construction schedule dates throughout the document are incorrect since the schedule has slipped somewhat. At this time, PG&E has targeted construction to begin in December 2014 to meet an in-service date of June 2016. Please note that this schedule may change due to a variety of factors, including delays associated with site acquisition or construction, funding constraints, etc.

F1-26

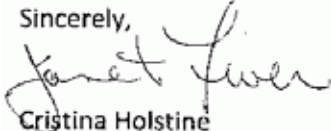
Comment Set F1, cont.  
Pacific Gas & Electric Company

Mr. Chiang  
August 14, 2013  
Page 5

PG&E appreciates the opportunity to provide these comments. Please feel free to contact me if further information or clarification is necessary.

F1-26 cont.

Sincerely,



Cristina Holstine  
Senior Land Planner  
Pacific Gas and Electric Company

cc:

David Kraska, Pacific Gas and Electric Company  
Jo Lynn Lambert, Attorney for Pacific Gas and Electric Company  
Kevin Janik, Pacific Gas and Electric Company  
Janet Liver, TRC Solutions  
Amy Morris, Aspen Environmental Group

Enclosures:

Errata Sheet A: Project Description "approximates"  
Errata Sheet B: Typos

## Comment Set F1, cont. Pacific Gas & Electric Company

Mr. Chiang  
August 14, 2013  
Page 6

### ERRATA SHEET A- Project Description "Approximates"

F1-27

**Global:** Insert the term "approximately" when including dimensions and descriptions of project engineering. The following locations should be marked as approximated, as indicated.

1. **Page 4-1, Section 4, Project Description.** "The proposed substation site is..., approximately six miles from the existing Fulton Substation and approximately three miles from the existing Fitch Mountain Substation."
2. **Page 4-1, Section 4, Project Description.** "The north, east, and west sides of the substation would be bordered by approximately 10-foot tall prefabricated perimeter walls."
3. **Page 4-2, Section 4, Project Description, top of the page, first bullet.** "This would require replacing approximately 39 wooden poles (with 38 wood poles and 1 steel pole) and installation of approximately 2 new wood riser poles."
4. **Page 4-2, Section 4, Project Description, top of the page second bullet.** "This would require replacement of approximately 44 wooden poles with taller wood poles and the installation of approximately 3 additional wood riser poles."
5. **Page 4-2, Section 4, Project Description, first paragraph.** "An approximately 270-foot, 60 kV power line loop would be built between the TSP and the new substation."
6. **Page 4-2, Section 4, Project Description, second paragraph.** "This access road will be within the approximately 45 foot wide corridor extending approximately 500 feet east from Herb Road shown in Figure 5.4-1 (Biological Resources Mapset)."
7. **Page 4-4, Section 4.8, Setting and Surrounding Land Uses, fourth paragraph.** "The nearest homes are approximately 60 feet north and 160 feet west of the project property boundary and approximately 125 feet north and 200 feet west of the proposed substation fence line."
8. **Page 4-5, Section 4.9.1 Windsor Substation, last bullet.** "Two approximately 42-foot-high dead-end structures..."
9. **Page 4-7, Section 4.9.6, Power Lines.** "To loop the existing Fulton No. 1 60 kV circuit into and out of the substation, an existing wood pole located on the 60 kV power line, approximately 270 feet west of the substation property, would be replaced with a new approximately 75-foot-tall TSP. The pole would support a short power line looped to the substation's 42-foot-tall dead-end structures."



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10. **Page 4-7, Section 4.9.7 Distribution Lines.** "Circuit 1 would be approximately 458 feet long. Circuit 3 would be approximately 538 feet long..."

11. **Page 4-8, Section 4.9.7 Distribution Lines.**

- a. "This rebuild would require approximately 39 new poles (38 wood replacement poles and 1 steel replacement pole) and approximately 2 new risers."
- b. "Circuit 2 would head east in a conduit to pole b1, approximately 620 feet from the substation. Beginning from pole b1, where Circuit 2 rises overhead, approximately 1.8 miles of existing distribution line would be reducted along Old Redwood Highway. As part of the reducting, approximately 44 existing wood poles would be replaced with new taller wood poles and approximately 3 new riser poles would be installed along Old Redwood Highway. Circuit 2 would be undergrounded along Old Redwood Highway where there is existing undergrounding (approximately 320 feet at Rio Ruso, 270 feet at Dawn Way, and 480 feet at Godfrey Drive)."

12. **Page 4-10, Section 4.10.1, Construction, Table 4-2 heading.** "Approximated Volumes of Material Imported..."

13. **Page 4-13, Section 4.11.1, Pole Installation and Replacement, first paragraph.** "The TSP would reach a height of approximately 75 feet; two cross arms would extend approximately 4-feet laterally on each side of the pole."

14. **Page 4-14, Section 4.12, Pole Replacement.** "Distribution of the increased capacity provided by the new substation would require constructing approximately 1,161 feet of new underground circuits, rebuilding approximately 7,900 feet of the existing overhead Fulton No. 1 60 kV line and installing two underbuilt distribution circuits, and reducting approximately 9,420 feet of the 12 kV powerline along Old Redwood Highway."

15. **Page 4-14, Section 4.12.1, Pole Replacement.** "Proposed reducting and rebuilding of power lines for the proposed project would require replacement of approximately 88 wooden poles along two existing distribution lines and the installation of approximately 5 new riser poles."

16. **Page 4-15, Section 4.12.3 Underground Installation.** "A total of approximately 796 cubic yards of spoils..."

F1-27 cont.

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### ERRATA SHEET B – Typographical Errors

F1-27 cont.

#### The following typos were identified when reviewing the Project Description

1. **Page 4-1:** A period is missing at the end of the first bullet in the list at the bottom of the page.
2. **Page 4-6:** The sentence immediately preceding Section 4.9.2 (Site Access) “would be” is repeated.
3. **Page 4-9:** Table 4-1, left column, second to last row, should state, “Total for Future Circuits” (missing “C”); left column, last row, should state, “Total for Initial and Future Circuits” (missing “Circuits”); and Note 1 has extra “be” repeated after “initially.”
4. **Page 4-10:** The end bracket is missing at the end of the sentence preceding Table 4-2.
5. **Page 4-10, Table 4-2:** Truck Trips for removal of material from Jack and Bore Entry and Exit Pits should be 20 (not 200). Total volume of material to be removed is correct.
6. **Page 4-13:** The second paragraph from the bottom contains two periods before the last sentence.
7. **Page 4-15, Section 4.12.2 Reconductoring:** The second to last sentence of first paragraph should be “...would require an area of approximately 400 to 500 square feet...” As opposed to, “and area”).
8. **Page 4-16, Open Trenching:** A period is missing from the second line “... conditions and requirements Where used, trenches ...”
9. **Page 4-17:** Second paragraph from the bottom of the page, “Exact locations for entry and exit pits have not yet to be determined by PG&E ...” Remove “not” from the sentence. Also in the same paragraph, add “the” to “In this event, the boring process ...”, and remove “drill” from “... by maintaining the drill drilling fluid pressure ...”
10. **Page 5-22:** The Town of Windsor General Plan is bolded and bulleted. This appears to be a typo.
11. **Page 5-47, Special Status Plants:** “Burke’s goldfields ....Kerry Conservation Site (CDFW 2013). in the past.” Remove the period preceding “in the past.”
12. **Page 5-94, second paragraph, last sentence:** “The inlet directs water south towards the middle of the site; the termination point for this runoff is unknown. (TRC 2012).” This should reference (PG&E 2011).

## Responses to Comment Set F1 Pacific Gas & Electric Company

F1-1 PG&E states that they appreciate the effort expended in preparing the IS/MND and the opportunity to provide minor comments and suggestions. PG&E notes that the on Page 4-1 (in Section 4, Project Description), fourth paragraph, the list of pole replacement locations should also include Wilcox Road, Starr Circle, Railroad Avenue, and Joni Court. In response, Page 4-1 has been revised as follows:

Access to the substation property would be from Old Redwood Highway and Herb Road (public section). Pole replacement and line work would occur along Old Redwood Highway, Starr Road, ~~and Gumview Road, Wilcox Road, Starr Circle, Railroad Avenue and Joni Court.~~

F1-2 PG&E requests deletion of “at the Fulton No. 1 60 kV Power Line” in the middle paragraph of Page 4-8 in Section 4.8.7 (Project Description, Distribution Lines) because not all of the circuits are being capped there. In response, Page 4-8 has been revised as follows:

Initially, the nine future circuits would be stubbed and capped ~~at the Fulton No. 1 60 kV Power Line.~~ The ultimate location of these circuits beyond their termination points will be determined in the future, based on demand and engineering. The partial installation of the nine future distribution-circuit conduits at this time would prevent future disruption of landscaping at the substation property.

F1-3 PG&E requests that Figure 4-4 be dated “PG&E 2013” instead of “PG&E 2012.” The figure has been revised as requested for the Final IS/MND.

F1-4 PG&E notes that water used during construction may be supplied by sources other than the Town of Windsor, including a nearby well adjacent to Herb Road or construction baker tanks. The final paragraph in Section 4.10.1 (Substation Construction) has been revised to reflect this clarification:

The final stage of substation construction would be landscaping, including installation of an irrigation system. The proposed site property is outside the Town of Windsor’s recycled water service area. The Town of Windsor ~~would~~ may supply both potable water for irrigation and water for construction purposes such as dust control from an existing valve box along Old Redwood Highway at the eastern edge of the proposed site. Water may also be obtained from a well adjacent to Herb Road or from construction baker tanks. Construction crew members would drink bottled water.

F1-5 PG&E requests that the Project Description (Section 4.10.3, Page 4-12) be revised to state “Substation work (civil construction) would occur over eight months.” This revision has been made as requested.

F1-6 PG&E requests that “by the end piece of the conductor spool” be deleted from the final paragraph on Page 4-13 (Section 4.11.1). This section has been revised as follows:

Once the 12 kV circuits have been moved, a tracked drilling rig would excavate the TSP’s foundation. The rig would auger a hole between five feet and eight feet in diameter and approximately 15 to 20 feet deep, with the exact depth determined by local soil characteristics. Excavated soil would be tested and disposed of in accord-



ance with applicable regulations or reused. The completed hole would be temporarily covered by the end piece of a conductor spool until installation of the new foundation.

- F1-7 PG&E notes states that the exact location of disposal sites for wooden poles, excavated soil, soil transportation and removal could change depending on the availability of disposal locations during construction. PG&E requests adding language on page 4-14 (wood poles and sawdust); page 4-16 (trenching soil); page 4-17 (jack and bore material); and page 4-17 (HDD material) to reflect that different disposal sites may be used based on availability. Page 4-14 and 4-17 have been revised to include that disposal may occur at "another appropriated available facility as necessary."
- F1-8 PG&E requests that a sentence on Page 4-17 (Section 4.12.1, Underground Installation) be revised to state "Placement would be determined by PG&E engineering design, Town of Windsor encroachment permit, and/or consultation with SMART, as appropriate." Page 4-17 has been revised as requested for the Final IS/MND.
- F1-9 PG&E asks that the sentence "Distribution work would be similar to the proposed substation site (Site 8)" on Page 4-26 (Section 4.17, Site Alternative 1) be deleted to avoid confusion. The requested revision has been made.
- F1-10 PG&E requests that APM AE-1 be revised to clarify that it applies only to the substation site. APM AE-1 has been revised as follows:  
  
**APM AE-1:** Additional landscaping comprised of trees and shrubs will be included along Herb Road and along the east edge of the substation site in the setback area from Old Redwood Highway to provide additional screening and reduce project visibility. Suggested plant material includes a mix of redwood trees and evergreen native oaks with a small number of deciduous accent trees. Landscaping under transmission lines will consist of small trees and/or shrubs to allow for overhead clearance. All planting will be consistent with PG&E operational requirements for landscaping in proximity to electric transmission facilities.
- F1-11 PG&E requests that APM AQ-4 be revised as follows: "Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites, if visible soil material is present." The requested revision has been made to APM AQ-4.
- F1-12 PG&E asks that the paragraph following Table 5.1-1 on Page 5-2 and 5-3 (Section 5.1.1, Aesthetics) be deleted because it applied to a previous site. PG&E notes that a conceptual landscape plan was developed for the proposed project on Old Redwood Highway (Figure 5.1-3) and was provided to the Town of Windsor on August 29, 2012. PG&E states that no changes are proposed to this plan, and it should be considered final. This paragraph has been deleted as requested.
- F1-13 PG&E requests that the fourth paragraph on Page 5-3 be revised to clarify that there may be security lighting on other sides of the substation in addition to on the north side. This paragraph has been revised as follows:  
  
Security lighting ~~for~~ surrounding the substation would consist of sodium vapor lamps. On the south side of the substation, five lights would be mounted 9.5 feet above the ground with three located on the steel gantry structure and one between the transformer and switchgear. On the north side of the substation, there would be free-standing light poles, approximately 12 feet tall.

F1-14 PG&E requests that Page 5-56 (Section 5.4.2[b]; Biological Resources, Environmental Impacts and Mitigation) be revised to remove the phrase “if complete avoidance of vernal pools is not feasible.” The final paragraph of Section 5.4.2[b] has been revised as follows:

Both direct and indirect impacts to vernal pools would be minimized by **Mitigation Measure B-2** (Preserve special-status plants, wetlands, and vernal pools) as described above in the discussion of listed plants. This measure requires clear marking of all wetlands and water features as environmentally sensitive areas and the use of BMPs to avoid wetland impacts. ~~If complete avoidance of vernal pools is not feasible, a~~Any permanent impacts to wetlands/vernal pools would be mitigated through purchase of mitigation credits or creation of wetlands based on an agency-approved plan. With implementation of APMs and **Mitigation Measure B-2**, impacts to sensitive natural communities (i.e., wetlands and other waters) would be less than significant.

F1-15 PG&E states that the IS/MND incorrectly describes that PG&E has committed to complying with the Town of Windsor’s Tree Replacement Ordinance. PG&E notes that because of the CPUC’s exclusive jurisdiction, the project is not subject to this local tree ordinance. However, PG&E has agreed to replace trees in a manner that is consistent with the Town’s tree ordinance. Section 5.4.2[e] has been revised as follows:

The Town of Windsor’s Tree Preservation and Protection Ordinance (Ordinance), regulates protection, preservation, maintenance, and removal of protected trees. Trees that occur within the survey area that are protected under the Ordinance include oaks with a diameter at breast height (dbh) of six inches or more. Construction of the proposed project would require removal of at least three trees, ~~which may be covered by the Ordinance.~~ Because the CPUC has exclusive jurisdiction as described in Section 5.10 (Land Use and Planning), the proposed project is not subject to the Town’s tree ordinance. However, PG&E has agreed to replace trees in a manner that is consistent with the Town’s tree ordinance.

According to the Ordinance Amendment (section 27.36.061), mitigation for impacts to protected trees should “generally replace a smaller quantity of larger trees by replanting a larger quantity of smaller trees, with the goal of restoring the original canopy area and volume after ten years.” In addition, the Ordinance Amendment requires preparation of an arborist report for all development projects with protected trees. The arborist report would provide recommendations on the removal of trees and mitigation to offset loss of protected trees. ~~PG&E has committed to comply with the Ordinance.~~ **APM BIO-15** commits PG&E to marking valley oaks and oak woodlands as environmentally sensitive and avoiding these areas to the extent practical. If any protected oak trees are removed, they would be replaced during landscaping in a manner consistent with the Town of Windsor’s Ordinance for Tree Mitigation.

F1-16 PG&E requests that the Final MND include a reference on Page 5-79 (Section 5.8, Hazards and Hazardous Material) to the Phase II Environmental Site Assessment by ERM performed in January 2011. Page 5-79 has been revised as follows:

This analysis is based on ~~a~~ Phase I and Phase II Environmental Site Assessments by ERM in 2011 (ERM 2011a and 2011b) and on a search of the State Water Resources Control Board’s GeoTracker Database and California Department of Forestry and Fire Protection maps.

- F1-17 PG&E requests that because the CPUC has exclusive jurisdiction, the reference to the Town of Windsor Storm Water Quality Ordinance No. 2008-249 be deleted (Page 5-97, Section 5.9.1 [Hydrology and Water Quality], first paragraph). The description of the Town of Windsor's Storm Water Quality Ordinance has been deleted from the Final IS/MND.
- F1-18 PG&E notes that Mitigation Measure LU-1 in the Draft IS/MND requires posting signs at least 30 days prior to construction. PG&E requests that the requirement be revised to state that residents shall be given "at least 10 days advance notice," because construction would take place in many areas of the Town and having signs up for a longer period may be confusing. Mitigation Measure LU-10 has been revised as follows:
- Provide advance notice of construction.** *Advance Notice.* Prior to construction, the Applicant shall give at least ~~30~~10 days advance notice of the start of any construction-related activities.
- F1-19 PG&E requests removal of reference to Mitigation Measure B-5 on Page 5-106 in Section 5.10.2(c) in the Biological Resources Section. PG&E notes that the current version of Mitigation Measure B-5 applies to bats rather than to agency coordination. Section 5.10.2(c) has been revised as follows:
- In January 2012, CDFW indicated that the title to 3.4 acres of this parcel will be transferred to CDFW. As of May 2012, the Kerry Conservation Site is on hold as a result of funding constraints (PG&E 2011-2013). Numerous APMs and mitigation measures for biological resources, including **Mitigation Measure B-2** (Preserve special-status plants, wetlands and vernal pools) would reduce potential impacts to listed plant habitat on the Kerry Conservation Site. These APMs are listed in Section 5.4.2(f). ~~In addition, Mitigation Measure B-5 requires agency coordination and approval of a plan for all construction and maintenance activities within the preserve area. With implementation of these measures, proposed project conflicts with the Santa Rosa Plain Conservation Strategy would be less than significant.~~
- F1-20 PG&E reiterates Comment F1-5 and requests that Page 5-117, Section 5.13.2(a) in the Population and Housing Section be revised to read: "Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over six to seven months." Page 5-117 has been revised as requested.
- F1-21 PG&E reiterates Comment F1-5 and requests that Page 5-120, Section 5.14.2(c), Schools in the Public Services Section be revised to state: "Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over approximately six to seven months." Section 5.14.2(c) has been revised as follows:
- Substation (civil) construction would require up to 15 workers over the course of eight months, and distribution line work would require up to 16 workers over ~~four to five~~ six to seven months.
- F1-22 PG&E requests that the second paragraph on Page 5-123, Section 5.16.1 (Transportation/Traffic) be revised as follows:
- "Old Redwood Highway borders the project substation site to the east; access to the substation site parcel would be directly off of Old Redwood Highway via ~~a newly installed curb cuts and driveways~~ and future curb cuts on the east side of the parcel."

Section 5.14.2(c) has been revised as requested.

F1-23 PG&E requests that APM BIO-7 in Table 6-1 (Section 6 [Mitigation Monitoring Plan], Page 6-7) be revised consistent with APM BIO-7 in Section 4 (Project Description). The version of APM BIO-7 in the Mitigation Monitoring Plan of the Draft IS/MND has been replaced with the correct version from the Project Description as requested.

F1-24 PG&E requests that the last sentence on Page 5-43 in Section 5.4 (Biology, Applicable Regulations) be revised from "If the PBO for ACE is not applicable, then a separate biological opinion from USFWS may be required for work at the proposed substation site" to "If the proposed project cannot meet the permit qualifications and may affect the California tiger salamander and/or three plant species on the Santa Rosa Plain, then a consultation with the USFWS may be required for work at the proposed substation site." The revision has been made as requested:

The PBO provides the framework for mitigation, conservation, translocation, and appropriate minimization measures. USFWS and CDFW will track project impacts, mitigation and other pertinent information. ~~If the PBO for ACE is not applicable, then a separate biological opinion from USFWS may be required for work at the proposed substation site.~~ If the proposed project cannot meet the permit qualifications and may affect the California tiger salamander and/or three plant species on the Santa Rosa Plain, then a consultation with the USFWS may be required for work at the proposed substation site.

F1-25 PG&E states that in the PEA for the proposed project, dimensions were identified as approximate because final engineering is not yet complete. PG&E enclosed Errata Sheet A listing 25 places where they would like the Final IS/MND to be revised to include the word "approximately." Instead of inserting "approximately" in all of the locations requested in Errata Sheet A, the following language has been added to Section 4, Page 4-2:

Please note: Dimensions and pole numbers identified in the Project Description and elsewhere in the IS/MND are approximate because final engineering is not yet complete. Slight changes may be necessary based on final engineering requirements, but any changes would comply with applicable regulations, applicant proposed measures, and mitigation measures.

F1-26 PG&E notes that the construction dates in the IS/MND are now incorrect because the planned schedule has been pushed back. PG&E states that construction is now targeted to begin in December 2014 to meet an in-service date of June 2016, but this schedule may still change due to a variety of factors. Section 4.10.3 (Project Description, Construction Workforce and Schedule) and an addition schedule reference in Section 5.16 (Transportation/Traffic) have been revised to reflect the new schedule.

F1-27 PG&E's Errata Sheet B includes a list of 15 identified typographical errors. These have been dealt with as follows in the Final IS/MND:

1. A period has been added to the end of the first bullet at the end of Page 4-1 (Section 4, Project Description).
2. The duplicate "would be" has been deleted from Page 4-6 immediately preceding Section 4.9.2 (Project Description, Site Access).

3. Table 4-1 on Page 4-9 (Project Description, Project Components, Distribution Lines) has been revised to include the word “circuits” in the final two rows, and the duplicate “in” has been deleted.
4. The parenthesis mark has been added to end of the sentence preceding Table 4-2 on Page 4-10 (Section 4.10, Substation Construction).
5. Table 4-2 on Page 4-10 the number of truck trips for removal of material from Jack and Bore entry and exit pits has been revised to show the correct number: 20 instead of 200.
6. The duplicate period on Page 4-13 has been deleted.
7. A phrase in the first paragraph in Section 4.12.2 (Project Description, Reconductoring) has been revised from “and area” to “an area.”
8. A period has been added to the first paragraph in the section on open trenching on Page 4-16 (Project Description, Reconductoring, Underground Installation).
9. In the second paragraph from the bottom on Page 4-17 in the description of horizontal directional drilling, the word “not” has been removed and the words “not” and “drill” have been removed, and the word “the” has been added.
10. Page 5-22 (Section 5.3.1, Air Quality, Regulatory Setting), the bullet has been removed from “Town of Windsor General Plan.”
11. In the second paragraph in the discussion of special-status plants on Page 5-47 (Section 5.4.2[a] in Biological Resources), the first reference to “in the past” has been removed.
12. The reference at the end of the second paragraph on Page 5-94 (Section 5.9.1, Hydrology and Water Quality) has been revised from “TRC 2012” to “PG&E 2011.”
13. This requested revision was not made. The requested capitalization is not consistent with the rest of the document.
14. The bold type has been removed from APM BIO-14 on Page 6-8 in Section 6 (Mitigation Monitoring Plan).
15. The sentence beginning “Design and project construction activities...” in Mitigation Measure B-2 on Page 6-9 (in Section 6, Mitigation Monitoring Plan) has been demarcated with a bullet.

# **Appendix A**

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List of Preparers



## Appendix A. List of Preparers

A consultant team headed by Aspen Environmental Group prepared this document under the direction of the California Public Utilities Commission. The preparers and technical reviewers of this document are presented below.

### Lead Agency

*California Public Utilities Commission, Energy Division*

Eric Chiang, Project Manager ..... Lead Agency Contact

### Project Management and Document Production

*Aspen Environmental Group – Prime Contractor*

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Amy Wilson Morris, PhD, Associate.....	Deputy Project Manager, Biologist
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Aubrey Mescher, Associate.....	Hydrology & Water Quality
Mark Tangard, Associate.....	Document Production
Kati Simpson, Associate.....	Graphics



# Appendix B

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References

## Appendix B. References

### Chapter 4 – Project Description

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***Section 5.18 – Mandatory Findings of Significance***

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PG&E. 2011. Supplement to the Proponent's Environmental Assessment Windsor Substation Project. <http://www.cpuc.ca.gov/Environment/info/aspen/windsorsub/toc-pea.htm>. Prepared by TRC Solutions. May 2011.

**Chapter 6 – Mitigation Monitoring Plan**

PG&E (Pacific Gas & Electric Company). 2010. Proponent's Environmental Assessment Windsor Substation Project. <http://www.cpuc.ca.gov/Environment/info/aspen/windsorsub/toc-pea.htm>. Prepared by TRC Solutions. April 2010.

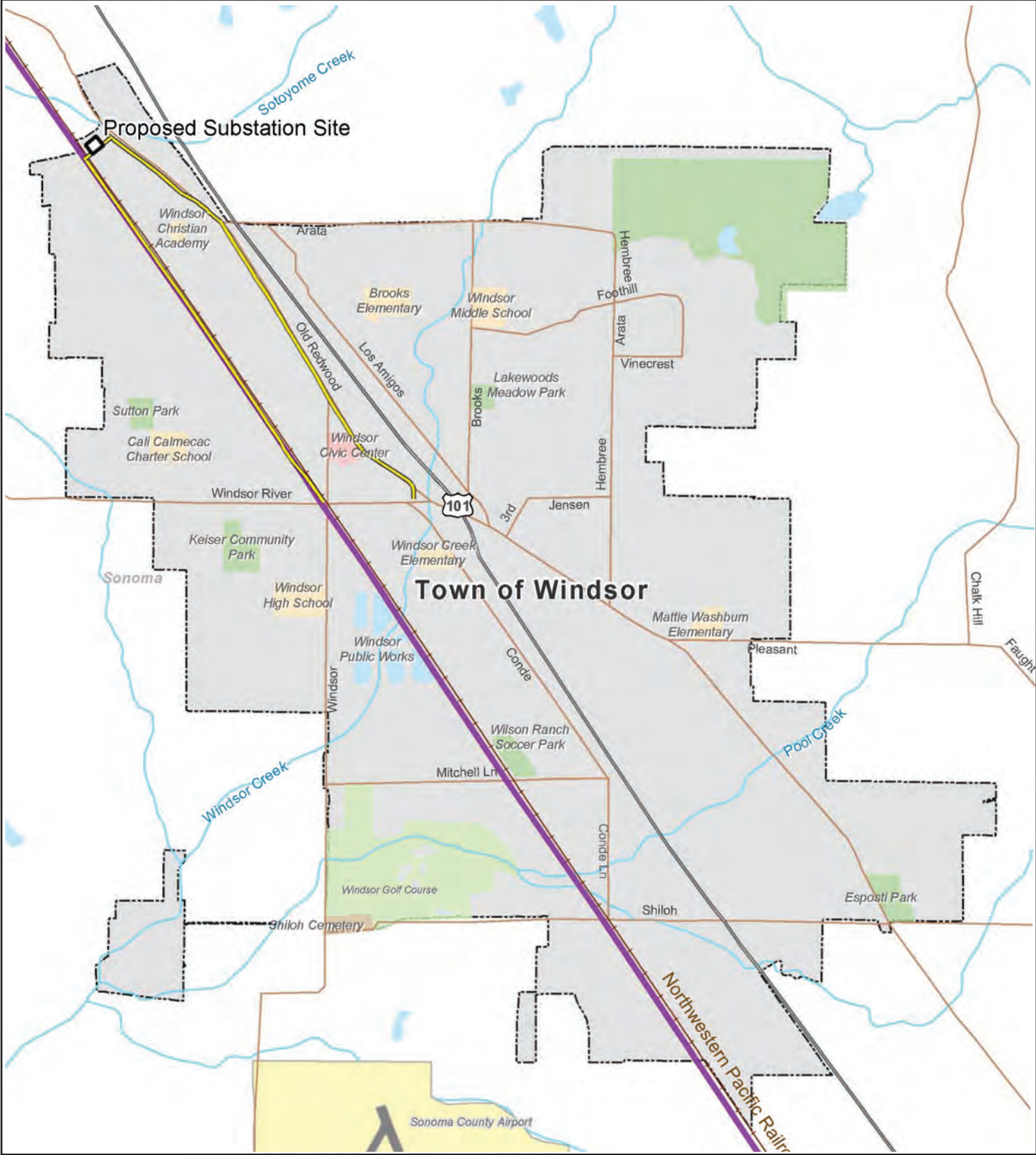
PG&E. 2011. Supplement to the Proponent's Environmental Assessment Windsor Substation Project. <http://www.cpuc.ca.gov/Environment/info/aspen/windsorsub/toc-pea.htm>. Prepared by TRC Solutions. May 2011.



# Appendix C

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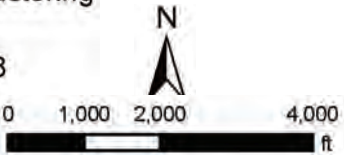
Figures



Source: PG&E, 2012.



- 12 kV Distribution Reconductoring
- Fulton No. 1 60 kV
- Proposed Substation Site 8
- Sonoma County Airport
- Town Boundary



**Figure 4-1**




**Project Overview Map**





Source: PG&E, 2012.



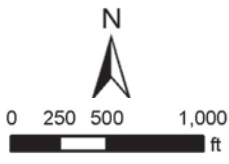
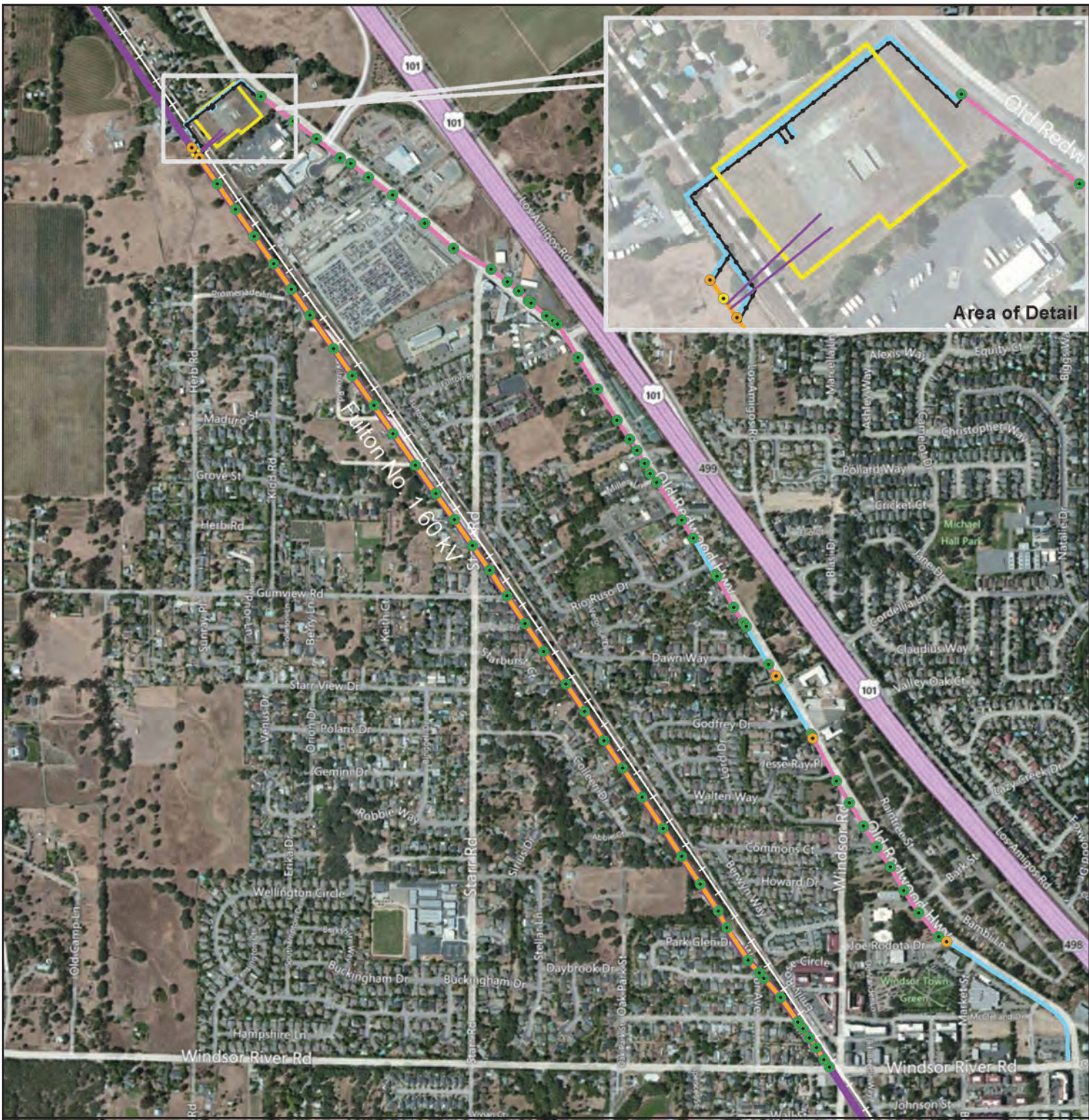
-  Proposed 115 kV Loop (Initially 60 kV Loop)
-  Site 8
-  Fulton No. 1 60 kV



**Figure 4-2**

**Windsor Substation Site - Aerial Map**





Source: PG&E, 2012.

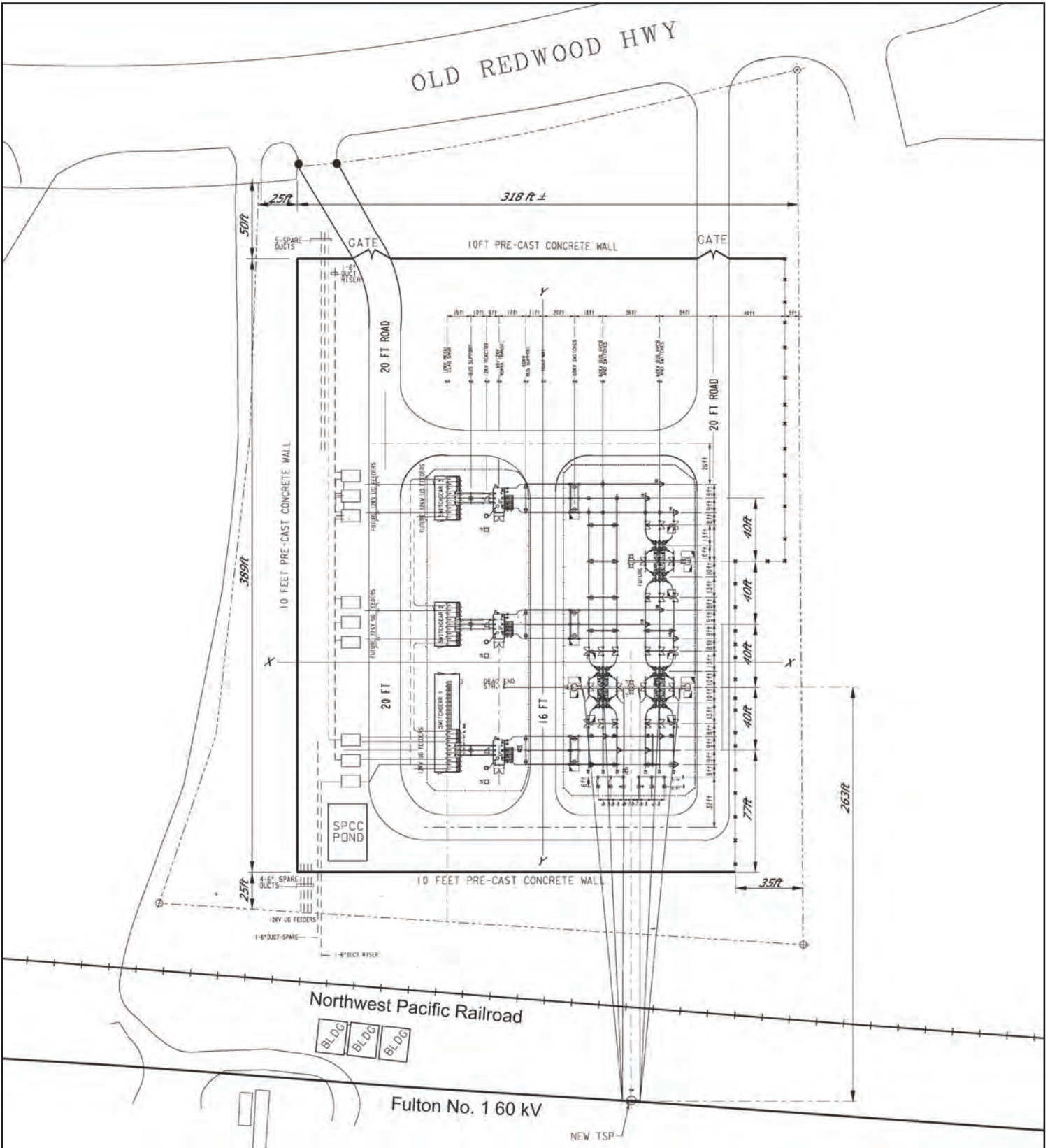


- Wood-to-Wood Pole Replacement
- Wood-to-Steel Pole Replacement
- New Riser Pole
- Future Underground Distribution Line Conduits
- Overhead Double Circuit 12 kV Distribution Line Underbuild of Existing Fulton No. 1 60 kV Power Line
- Overhead Double Circuit Reconductoring of Existing 12 kV Distribution Line
- Underground Double Circuit Reconductoring of Existing 12 kV Distribution Line
- Proposed 115 kV Loop (Initially 60 kV Loop)
- Fulton No. 1 60 kV
- Site 8

**Figure 4-3**

**Windsor Substation  
 Associated Reconductoring**



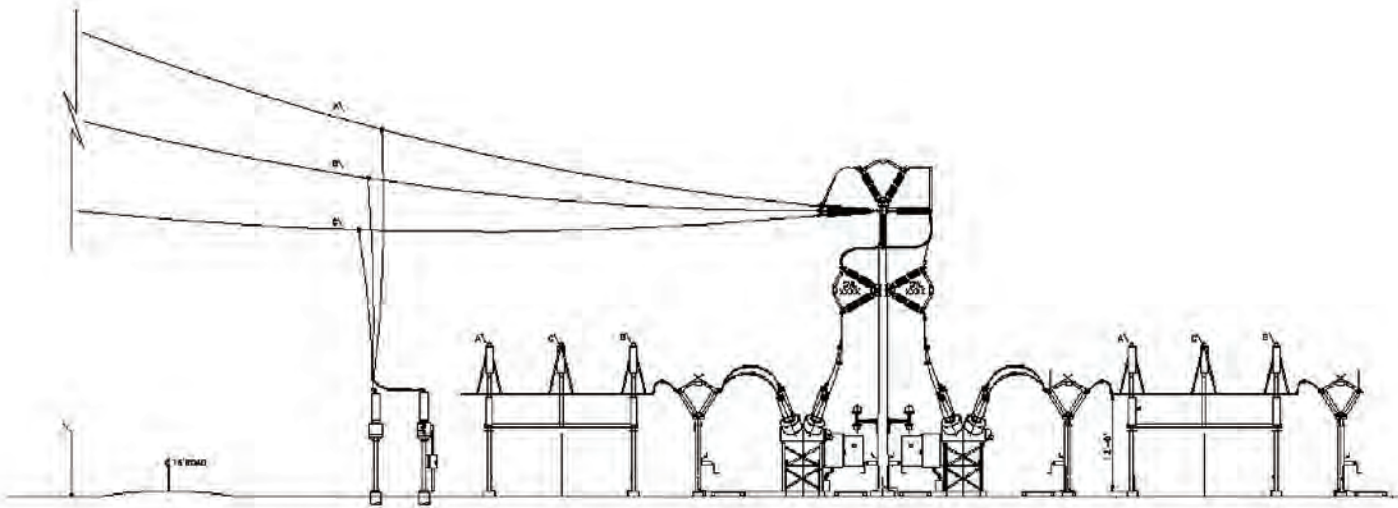


Source: PG&E, 2012 2013.



Figure 4-4

Typical Three Bank Substation



Source: PG&E, 2010.



**Figure 4-5**

**Typical Three Bank Substation Profile**





1. Old Redwood Highway near Highway 101 offramp looking north



2. Old Redwood Highway near corner of site looking north



3. Old Redwood Highway near Bisacno Road looking south \*



4. Herb Road near corner of site looking east

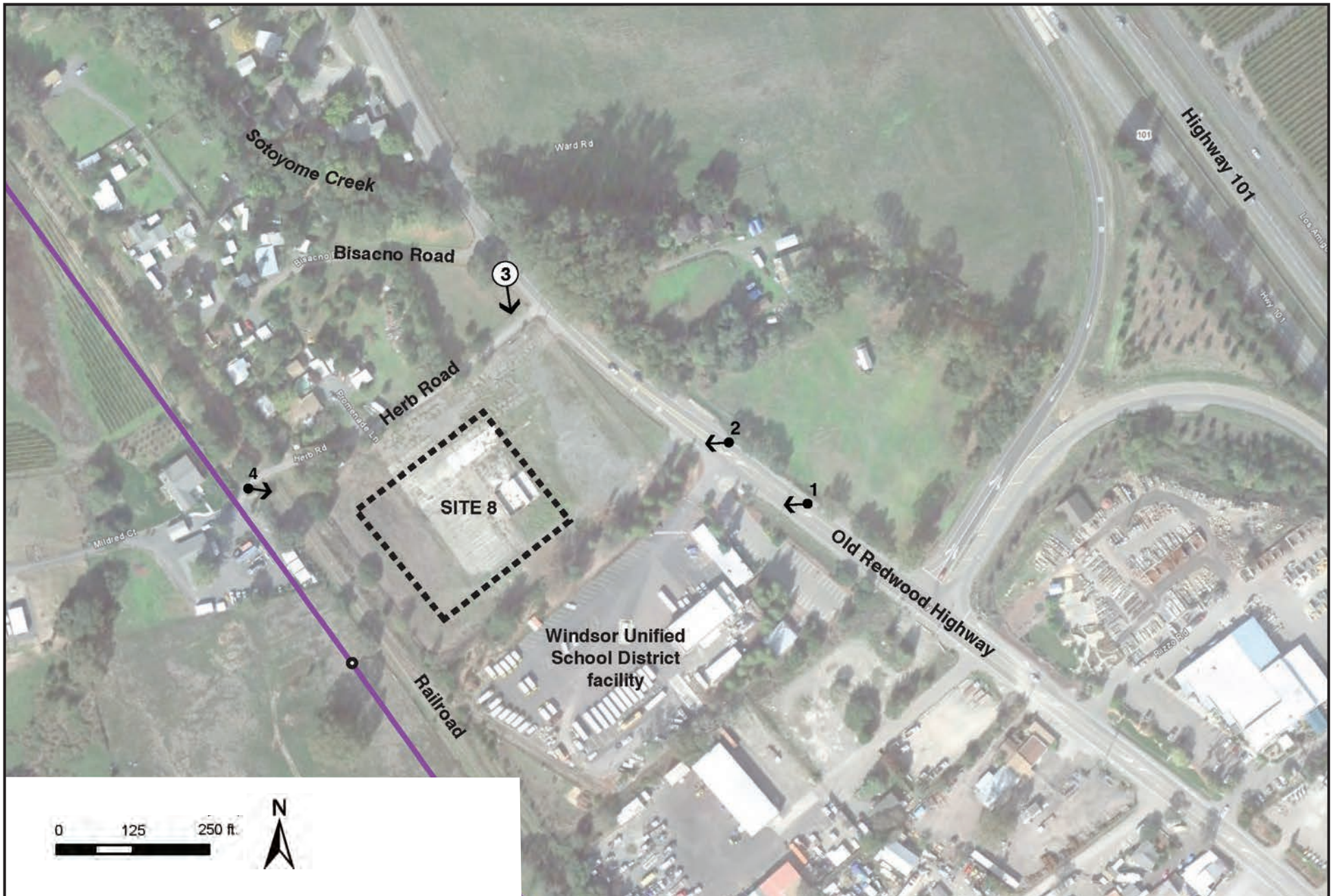


\*Simulation view

Source: PG&E, 2011.

**Figure 5.1-1**  
**Windsor Substation**  
**Site Photographs**





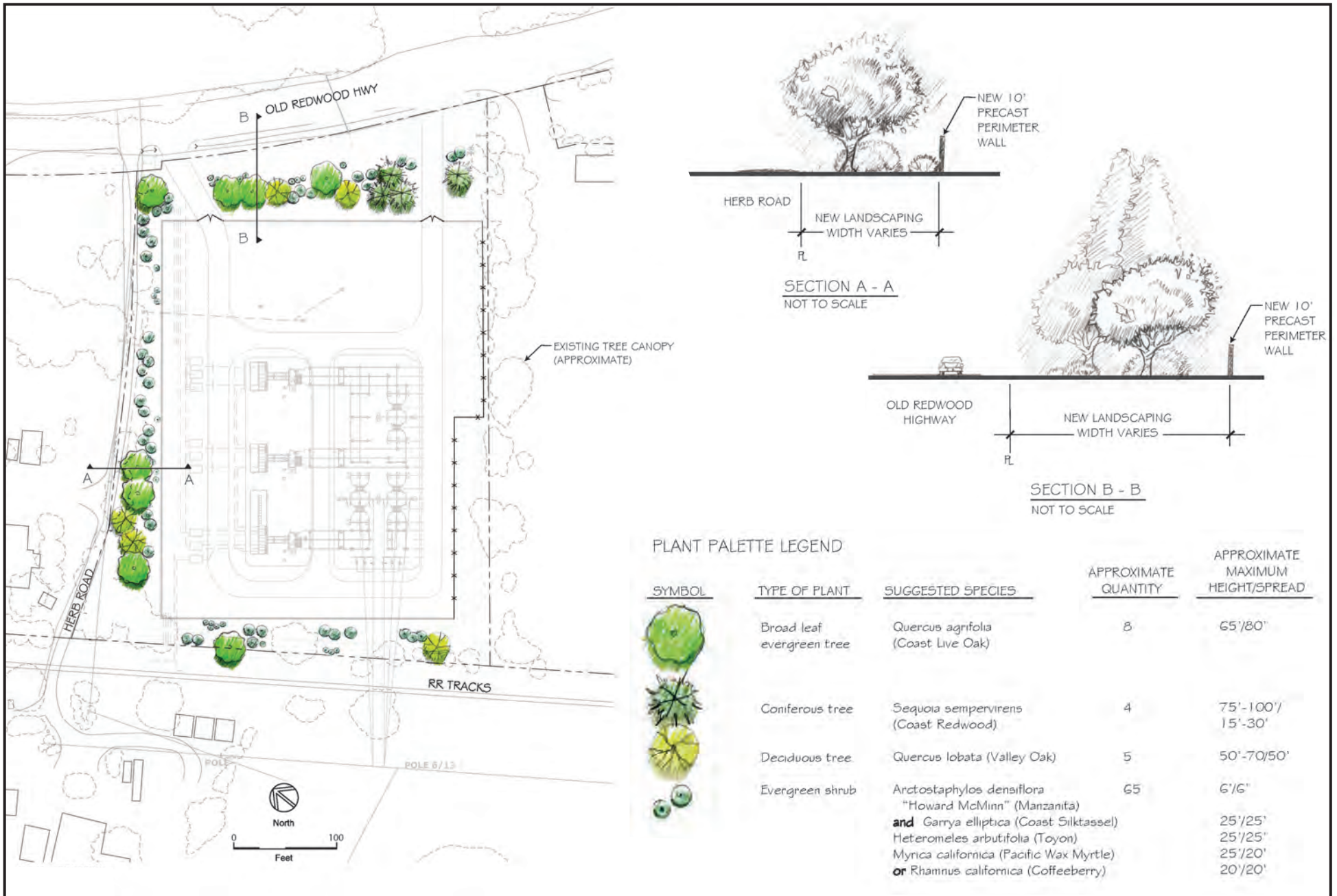
Source: PG&E, 2011.

- ←③ Simulation Viewpoint
- ←●1 Photo Viewpoints (1-4)
- Fulton No. 1 60 kV

- Interconnect Pole
- Site 8

**Figure 5.1-2**  
**Windsor Substation**  
**Site Photo Viewpoints**







Existing view from Old Redwood Highway looking south





Visual simulation of proposed project without landscaping





Visual simulation of proposed project with landscaping shown at 8 years maturity



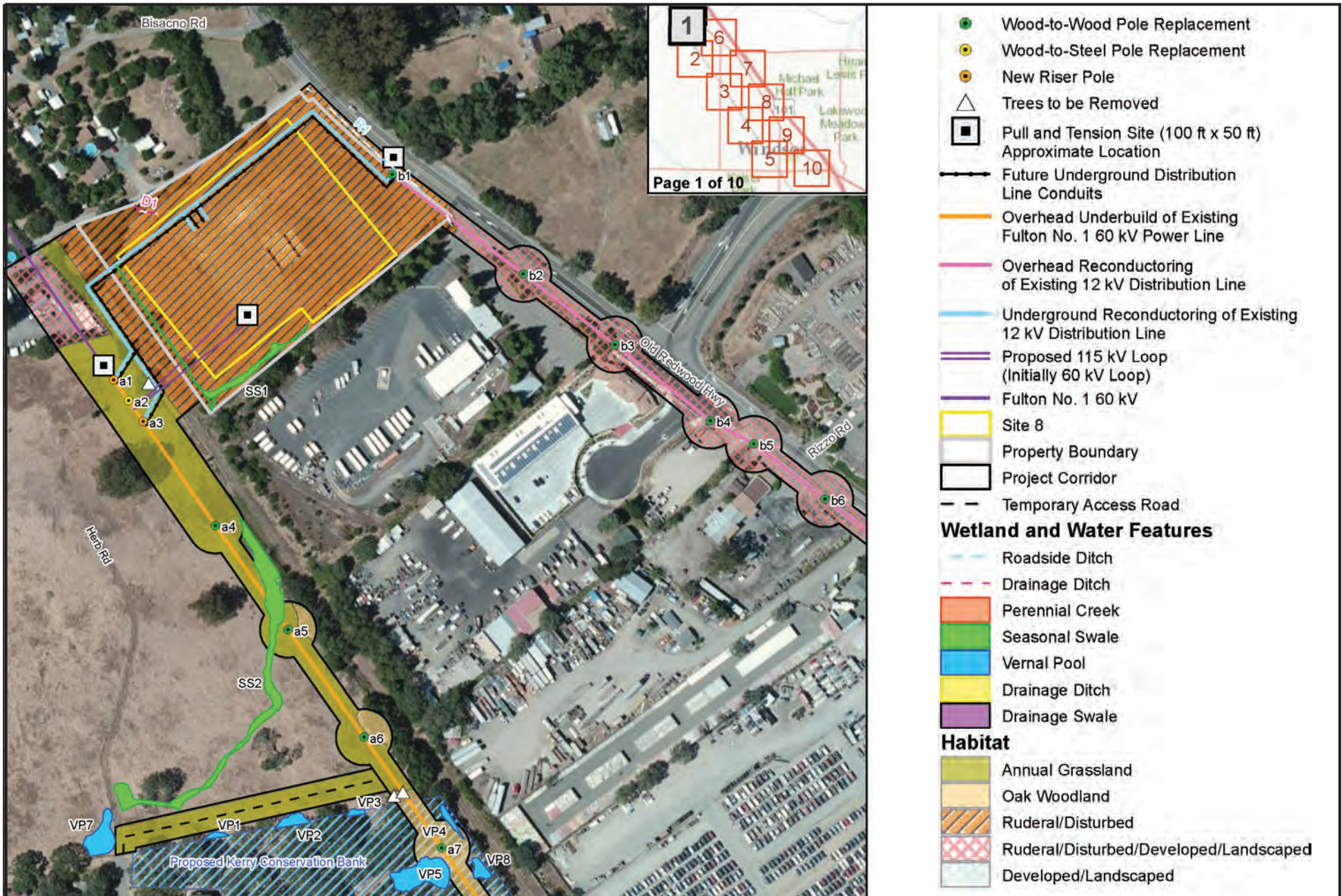


Figure 5.4-1

Windsor Substation Project  
Biological Resources Mapset  
Map 1



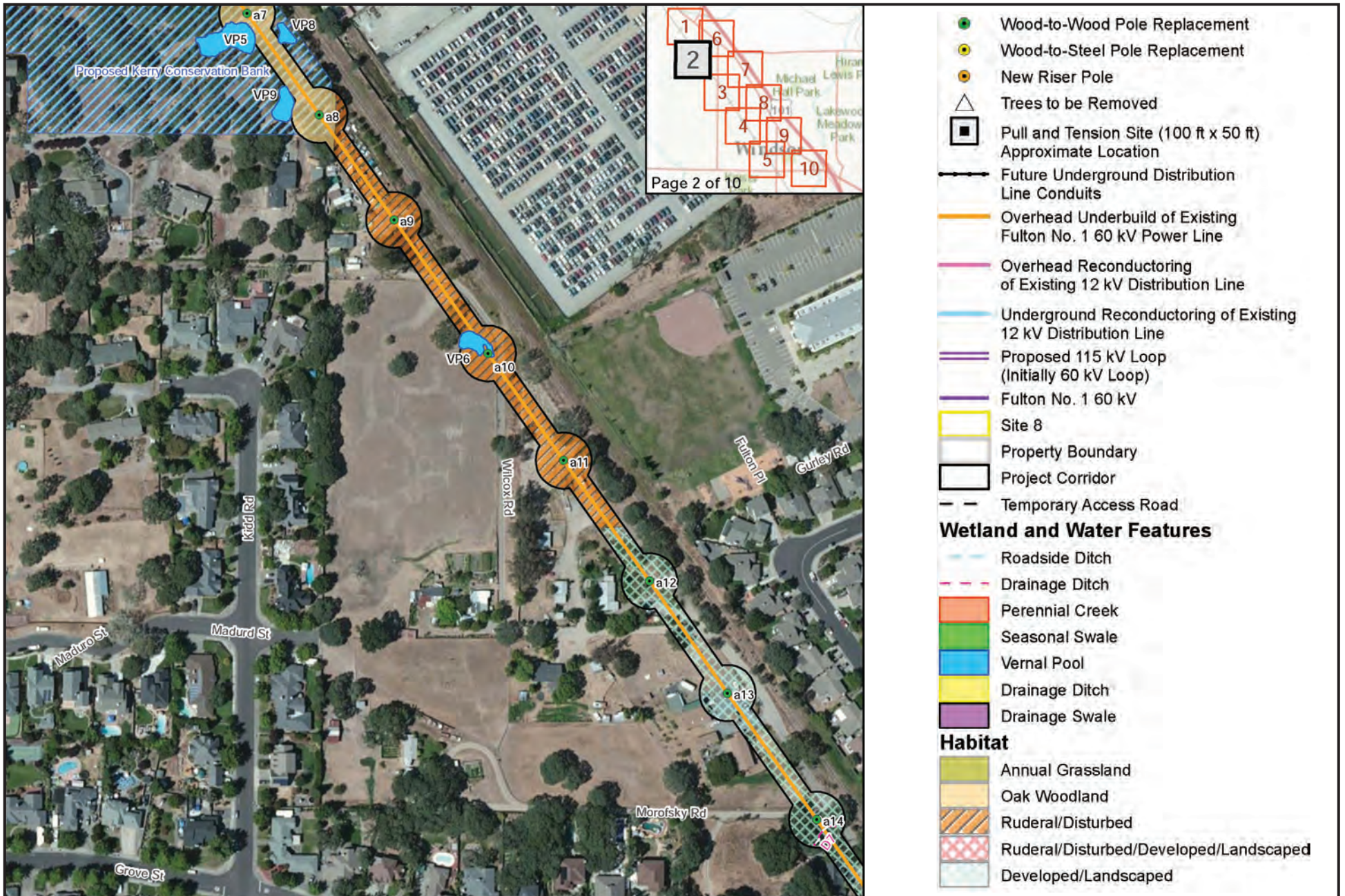


Figure 5.4-1

Windsor Substation Project  
Biological Resources Mapset  
Map 2





**Figure 5.4-1**

**Windsor Substation Project  
Biological Resources Mapset  
Map 3**





Figure 5.4-1

Windsor Substation Project  
Biological Resources Mapset  
Map 4



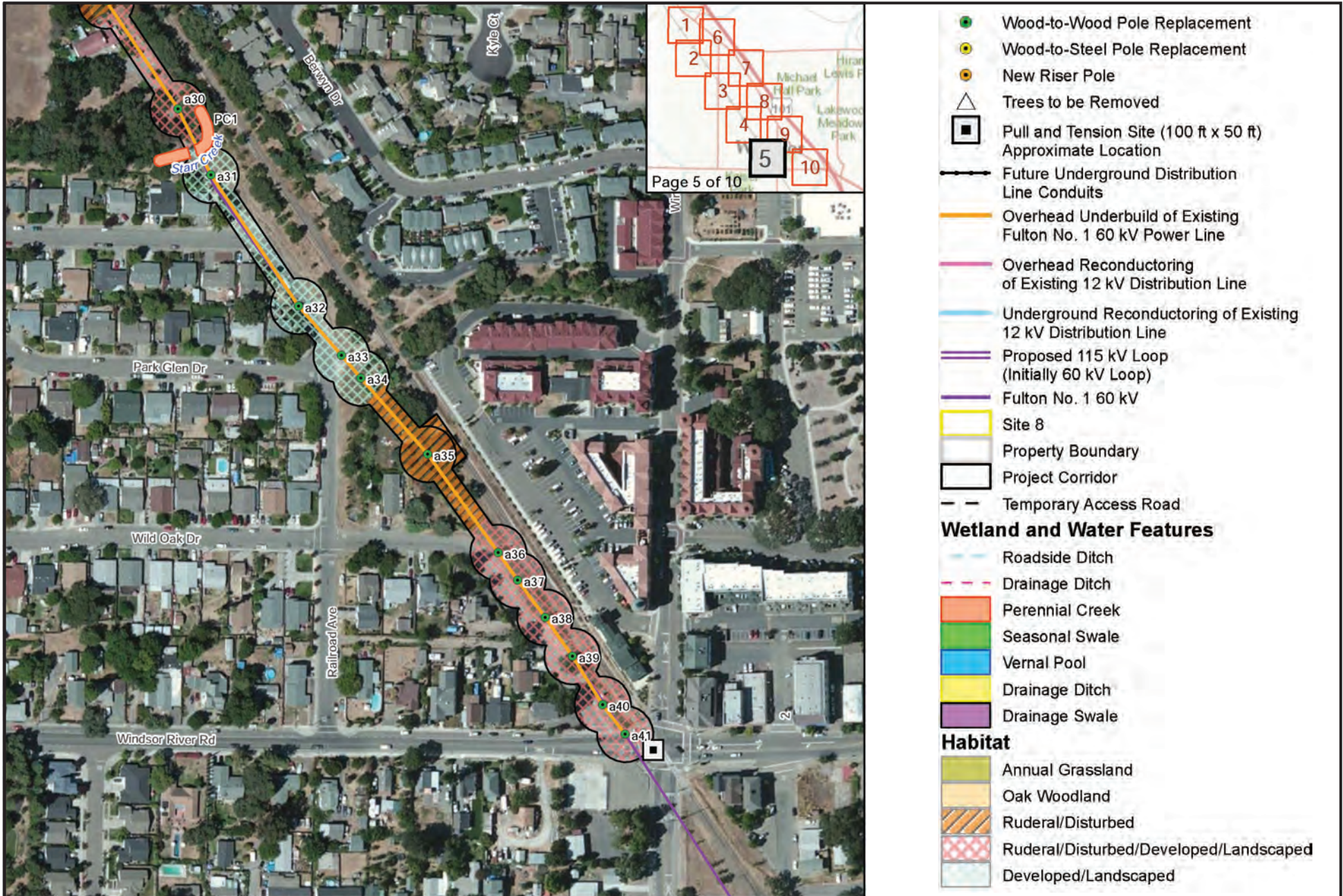
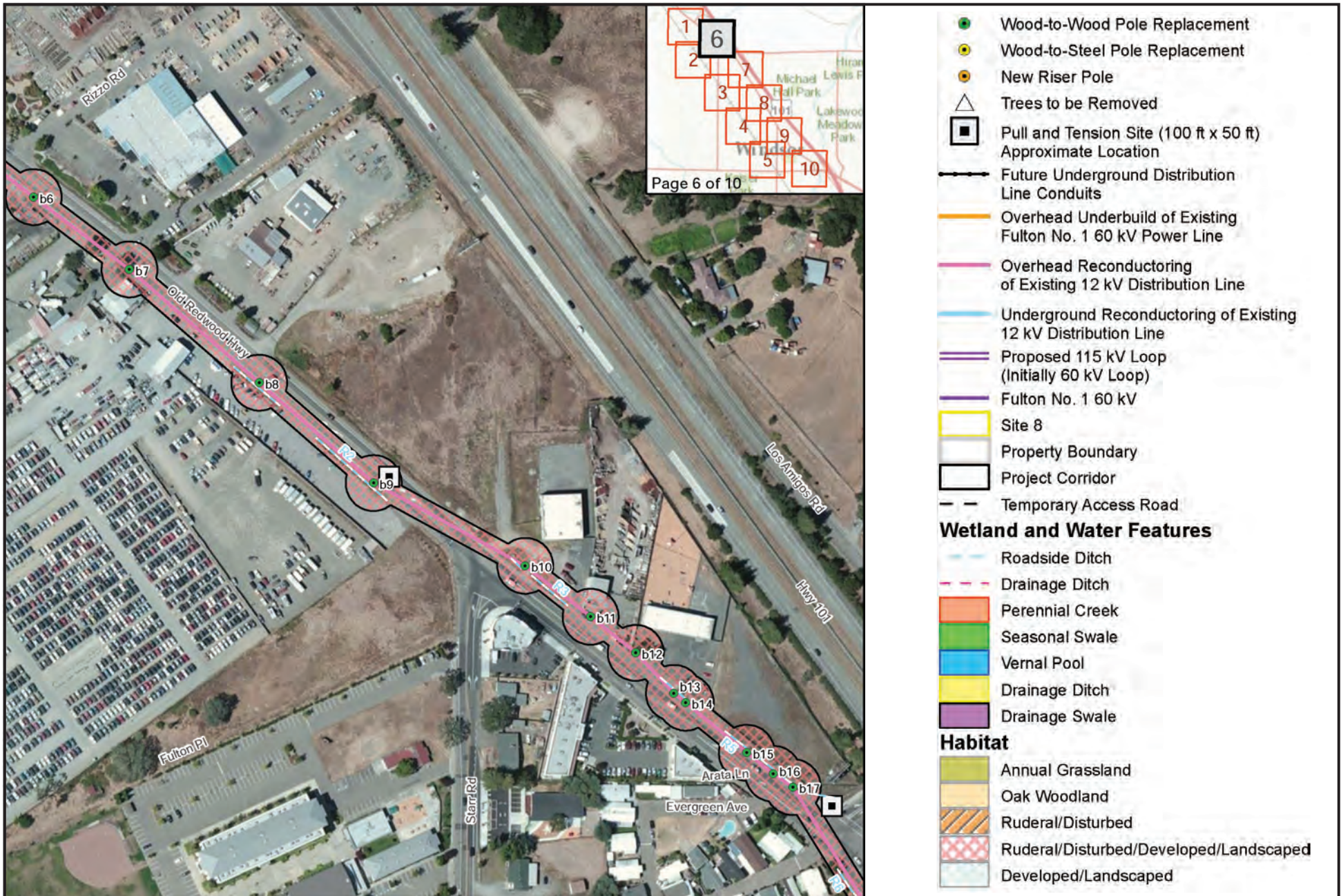


Figure 5.4-1

Windsor Substation Project  
Biological Resources Mapset  
Map 5

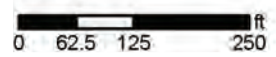




Page 6 of 10

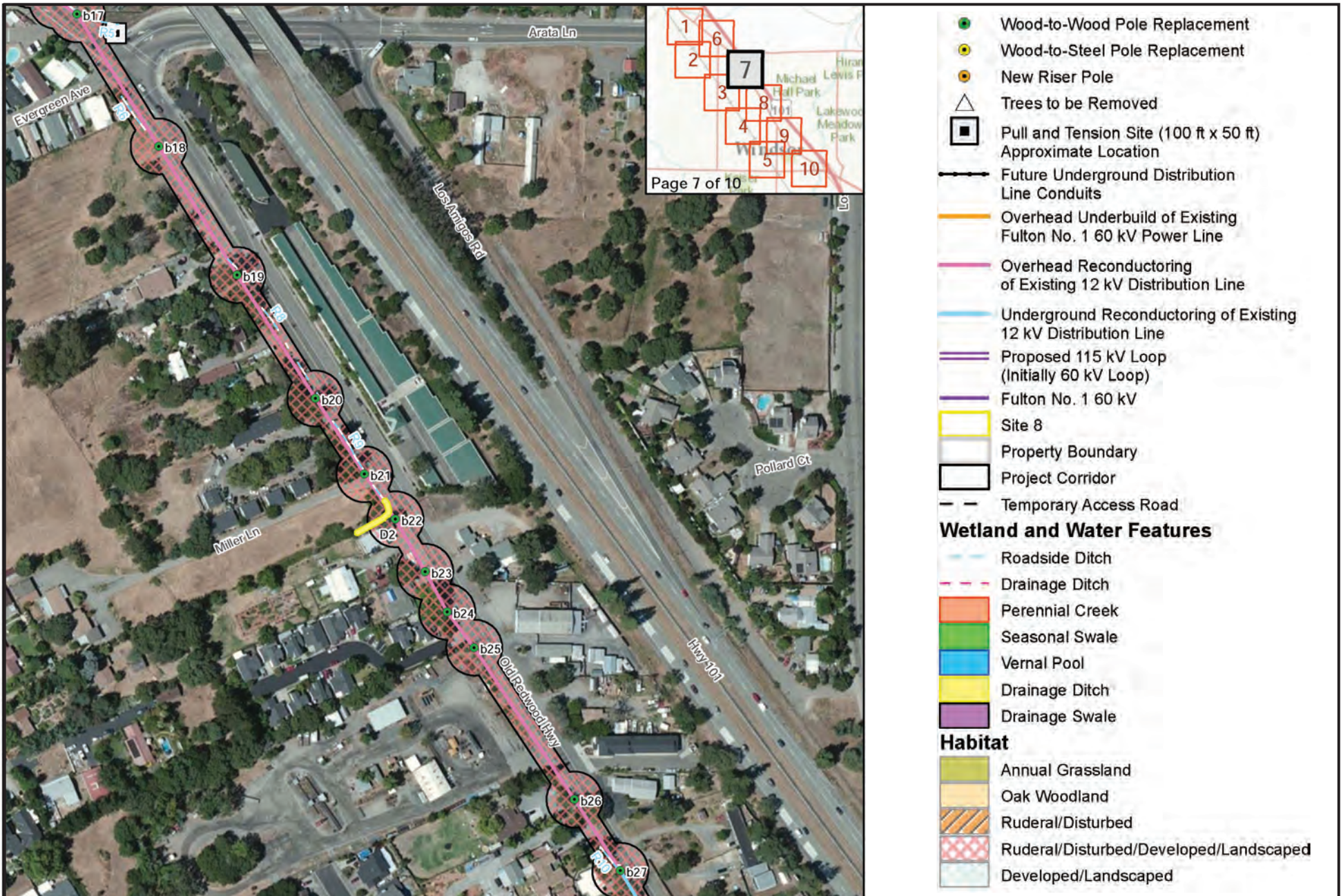


Source: PG&E, 2012.



**Figure 5.4-1**  
**Windsor Substation Project**  
**Biological Resources Mapset**  
**Map 6**





Page 7 of 10

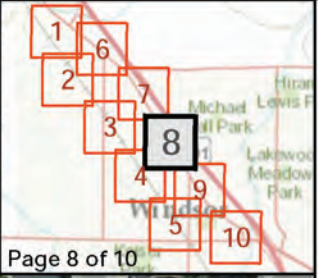
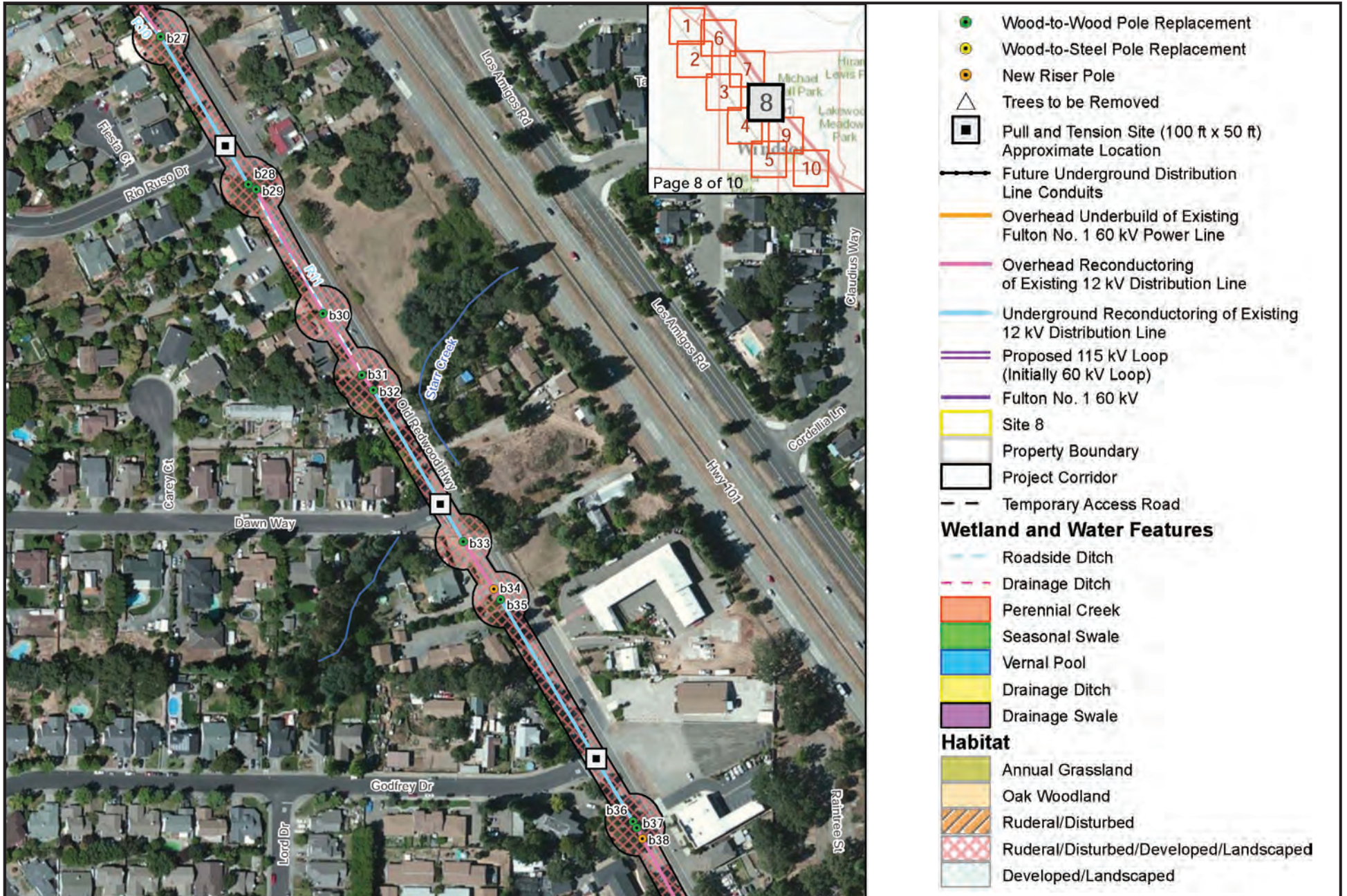


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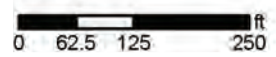


**Figure 5.4-1**  
**Windsor Substation Project**  
**Biological Resources Mapset**  
**Map 7**





Source: PG&E, 2012.



**Figure 5.4-1**  
**Windsor Substation Project**  
**Biological Resources Mapset**  
**Map 8**



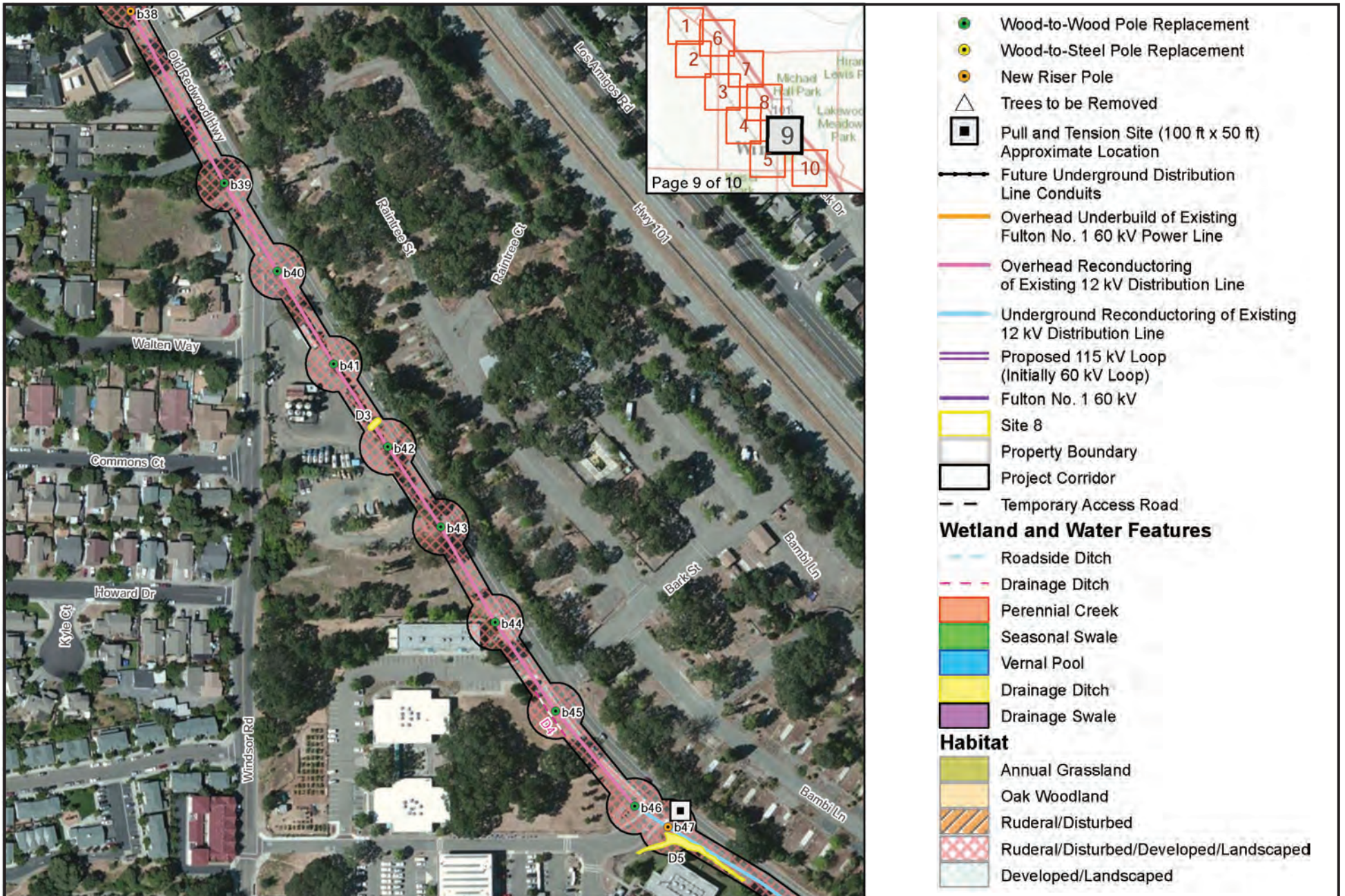
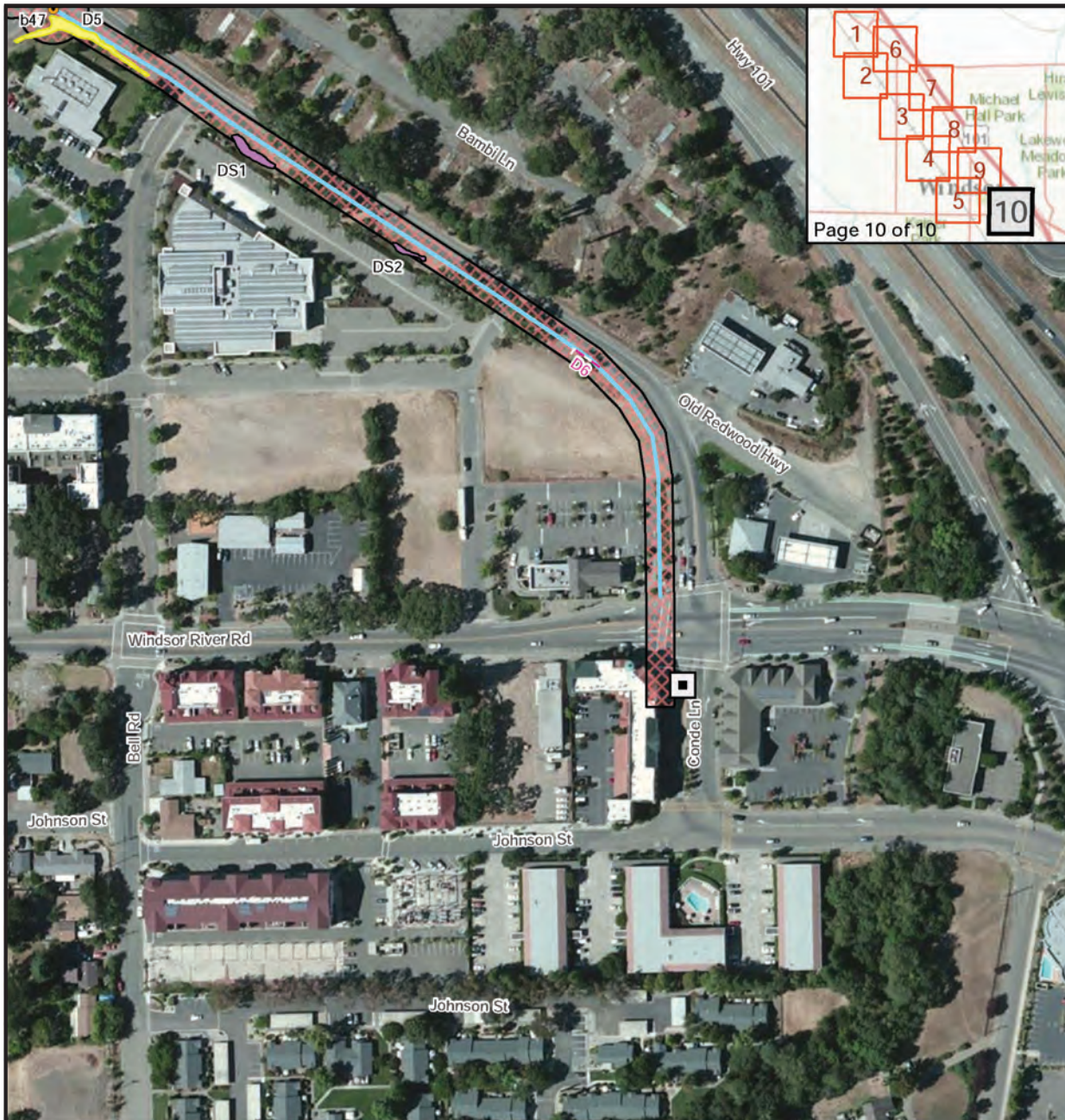


Figure 5.4-1

Windsor Substation Project  
Biological Resources Mapset  
Map 9

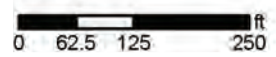




- Wood-to-Wood Pole Replacement
  - Wood-to-Steel Pole Replacement
  - New Riser Pole
  - Trees to be Removed
  - Pull and Tension Site (100 ft x 50 ft) Approximate Location
  - Future Underground Distribution Line Conduits
  - Overhead Underbuild of Existing Fulton No. 1 60 kV Power Line
  - Overhead Reconductoring of Existing 12 kV Distribution Line
  - Underground Reconductoring of Existing 12 kV Distribution Line
  - Proposed 115 kV Loop (Initially 60 kV Loop)
  - Fulton No. 1 60 kV
  - Site 8
  - Property Boundary
  - Project Corridor
  - Temporary Access Road
- Wetland and Water Features**
- Roadside Ditch
  - Drainage Ditch
  - Perennial Creek
  - Seasonal Swale
  - Vernal Pool
  - Drainage Ditch
  - Drainage Swale
- Habitat**
- Annual Grassland
  - Oak Woodland
  - Ruderal/Disturbed
  - Ruderal/Disturbed/Developed/Landscaped
  - Developed/Landscaped

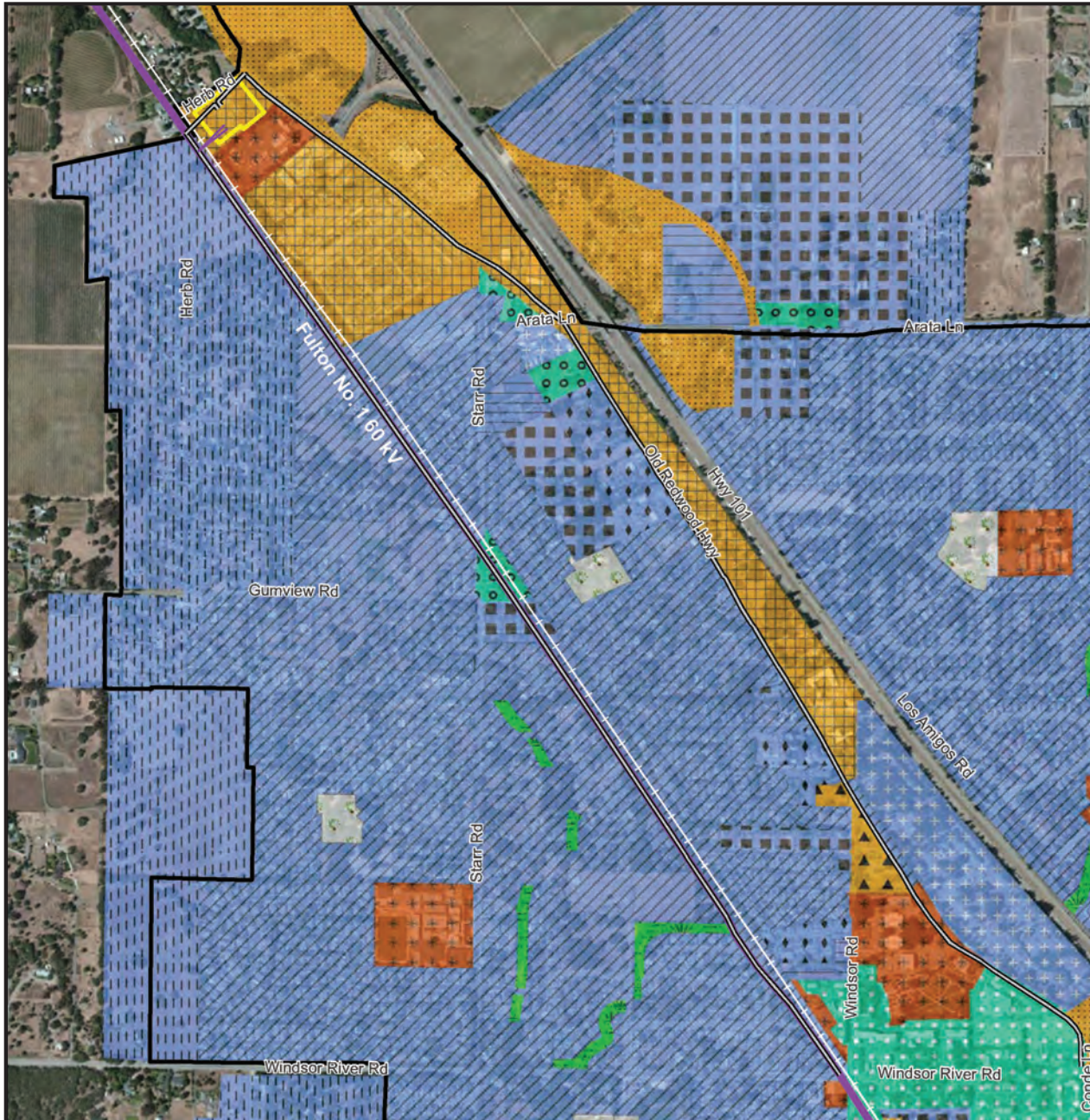


Source: PG&E, 2012.



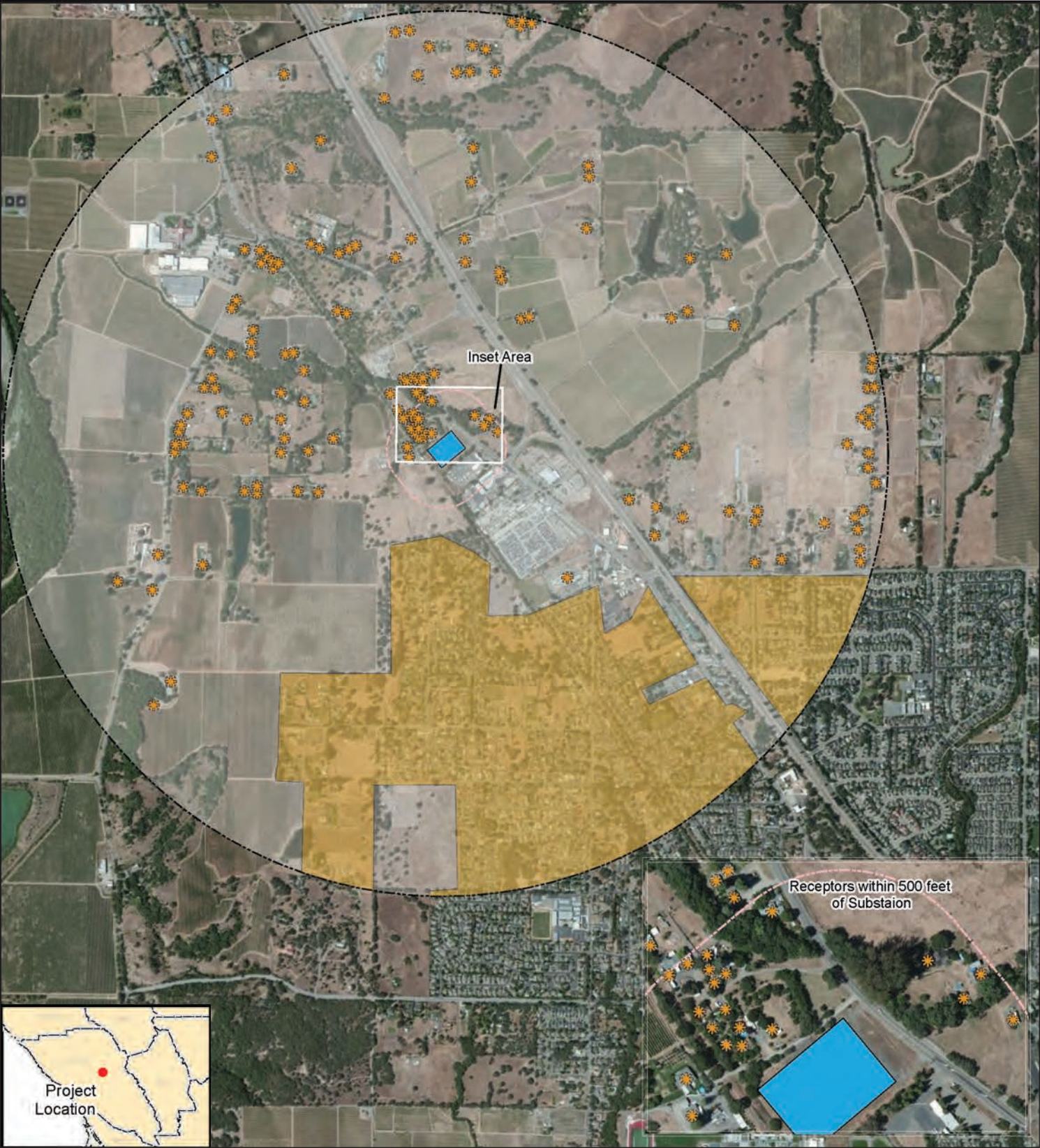
**Figure 5.4-1**  
**Windsor Substation Project**  
**Biological Resources Mapset**  
**Map 10**





- 12 kV Distribution Reconductoring
  - Proposed 115 kV Loop  
(Initially 60 kV Loop)
  - Fulton No. 1 60 kV
  - Site 8
  - Town Boundary
- Town of Windsor Land Use Categories**
- RESIDENTIAL**
- High Density Residential
  - Medium-High Density Residential
  - Mobile Home Park
  - Village Residential
  - Surrounding Residential
  - Estate Residential
- MIXED USE**
- Town Center/Mixed Use
  - Neighborhood Center/Mixed Use
- COMMERCIAL/INDUSTRIAL**
- Retail Commercial
  - Service Commercial
  - Gateway Commercial
  - Light Industrial
- PARKS/OPEN SPACE**
- Parks
  - Open Space
- PUBLIC/QUASI-PUBLIC/INSTITUTIONAL**
- Cemetary/School/Wastewater-Treatment Plant





Source: PG&E, 2012.








-  Windsor Substation Footprint
-  Sensitive Receptors
-  Residential Developments
-  1-mile buffer
-  500-foot buffer

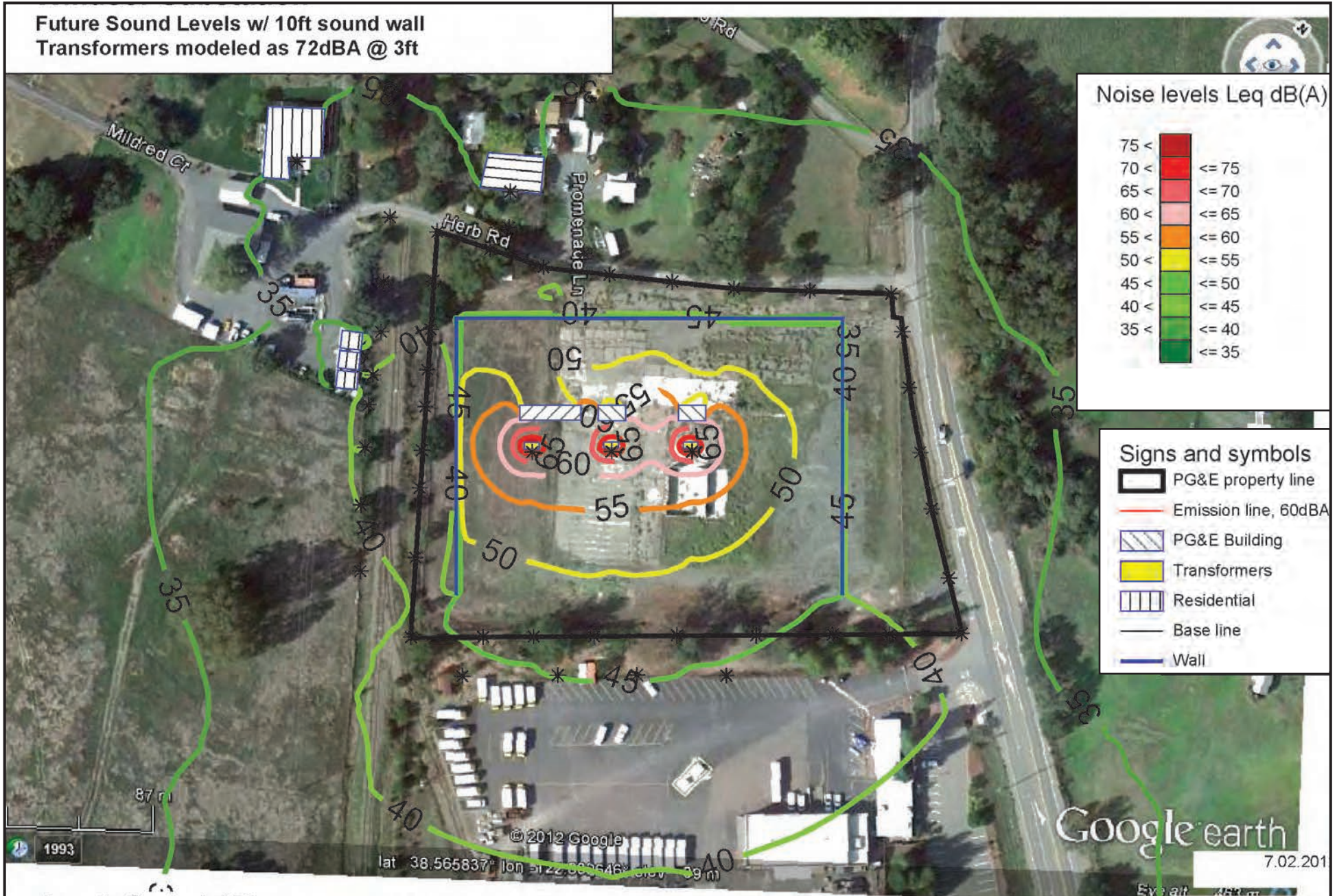


Figure 5.12-1

Existing Sensitive Receptors



Future Sound Levels w/ 10ft sound wall  
Transformers modeled as 72dBA @ 3ft



# **Appendix D**

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## Notice of Intent

## NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

**TO:** All Interested Parties

Pursuant to the California Public Utilities Commission's (CPUC) General Order 131-D, Pacific Gas and Electric Company (PG&E) has filed an application with the CPUC for a Permit to Construct the PG&E Windsor Substation Project (Application No. A.10-04-024).

**Project Background:** PG&E is proposing to construct the Windsor Substation Project to improve transmission system reliability for customers in Sonoma County, California. The project consists of constructing a new distribution substation at 10789 Old Redwood Highway, within the northern limits of the Town of Windsor, and installing and upgrading distribution and related facilities. The Project is needed to meet projected electric demand in the Fulton-Fitch Mountain Distribution Planning Area. As proposed by PG&E, the project includes:

- Constructing a new three-bank 115/12 kV distribution substation (initially energized at 60 kV) on 2.6 acres of a 4.1 acre property in the Town of Windsor, California;
- Connecting the new substation to the existing nearby Fulton No. 1 60 kV transmission line (via a 270-foot 60 kV power line loop);
- Installing underground distribution line vaults and conduits for current and future use;
- Installing 3 underground 12 kV circuits initially, with up to 9 additional circuits to be installed in the future as needed;
- Installing 700 feet (0.1 mile) of new underground distribution line;
- Rebuilding approximately 7,900 feet (1.5 miles) of the existing Fulton No. 1 60 kV Power Line to hold a new double-circuit 12kV distribution line underneath existing higher voltage lines (underbuild); and
- Replacing conductors (reconductoring) on approximately 9,420 feet (1.8 miles) of existing overhead and underground single-circuit distribution line with 12 kV double-circuit conductor along Old Redwood Highway

Depending on CPUC approval, construction is planned to start in February 2014 with an in-service date of May 2015.

**Information Available:** The CPUC Energy Division has prepared a Mitigated Negative Declaration and supporting Initial Study (IS/MND) describing the project and its potential environmental effects. Based on this document, it has been determined that the proposed project, as modified, will not have any significant effects on the environment. The CPUC's environmental document may be reviewed at the following locations:

CPUC Energy Division  
505 Van Ness Avenue, 4th Floor  
San Francisco, CA 94102

Windsor Regional Library  
9291 Old Redwood Highway, Building 100  
Windsor, CA 95492

For electronic access to the MND and other project information/reports, please visit the CPUC's website at:

<http://www.cpuc.ca.gov/Environment/info/aspen/windsorsub/windsorsub.htm>

**Time for Review:** This IS/MND will undergo a public review period from July 15 through August 14, 2013. Comments must be received in writing by 5:00 p.m. on August 14, 2013, at the following address:

Eric Chiang  
California Public Utilities Commission  
c/o Aspen Environmental Group  
235 Montgomery Street, Suite 935  
San Francisco, CA 94104-3002

You may fax your comments to (707) 657-0316 or e-mail them to: [windsorsubstation@aspeneq.com](mailto:windsorsubstation@aspeneq.com).