Mitigation Monitoring, Compliance, and Reporting Plan

Pacific Gas and Electric Company's

Windsor Substation Project

(Application A.10-04-024)

(Decision D.14-03-031)

Lead Agency:

California Public Utilities Commission

Prepared by:

Aspen Environmental Group

May 2016

1. Introduction

1.1 Project Overview

The Pacific Gas & Electric (PG&E) Windsor Substation Project (Project) (Application No. A.10-04-024) involves the construction, operation, and maintenance of a new three-bank 115/12 kV distribution substation on 2.6 acres of a 4.1-acre property in the Town of Windsor, Sonoma County, California. The Project will be initially energized at 60 kV. The Project will include additional on-site and off-site activities related to development of the substation. These include:

- 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

A detailed project description, including figures, is provided in Attachment A.

1.2 Authority

The California Public Utilities Commission (CPUC) has broad regulatory authority under Article XII of the California Constitution, and Section 702 of the Public Utilities Code (PU Code) mandates that every public utility obey and comply with every order, decision, direction or rule made by the Commission. Public utilities are subject to enforcement action and fines pursuant to PU Code Sections 2102-1015, 2017, 2108, and 2114. In 2013, the CPUC established a CEQA Citation Program authorizing Staff to fine public utilities for non-compliance with Permits to Construct (PTCs) and Certificates of Public Convenience and Necessity (CPCNs). MMRCPs are adopted as part of PTCs and CPCNs and are enforced as such.

Monitoring of mitigation measures to be implemented by a project is required by the California Environmental Quality Act (CEQA). CEQA Guidelines Section 15097 clarifies requirements for mitigation monitoring or reporting. As well, Section 21081.6 of the California Public Resources Code (PRC) requires a public agency to adopt a mitigation monitoring and reporting program when it approves a project that is subject to preparation of an Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND) and where significant adverse environmental effects have been identified.

Mitigation measures to be implemented as part of the Project were identified in the Final MND prepared by CPUC for the Project. The MND was adopted by the California Public Utilities Commission (CPUC) on April 3, 2014 in Decision (D.) 14-03-031 and includes procedures for preparing and implementing a Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) to ensure compliance with the mitigation measures approved in the MND. In addition, Applicant Proposed Measures (APMs) were adopted as part of the MND. Together, the mitigation measures and APMs identified in the MND provide the framework for this MMCRP.

1.3 Mitigation Monitoring Compliance, and Reporting Plan

Within PG&E's application, the utility proposed APMs to reduce potentially significant adverse impacts related to project construction and operation. In addition, mitigation measures are imposed on the Project by the CPUC, and regulatory agencies may impose permit requirements.

The MMCRP provides guidelines and procedures for environmental compliance on the Project. The MMCRP was developed by the CPUC in coordination with PG&E and CPUC's Environmental Monitors (CPUC EMs). The MMCRP defines reporting relationships, provides information regarding the roles and responsibilities of the Project's environmental compliance personnel, sets out compliance reporting procedures, and establishes a communication protocol. The communication information listed in the MMCRP will be updated throughout construction.

The purpose of this MMCRP is to ensure effective implementation of the mitigation measures and APMs identified in the MND and imposed by the CPUC as part of project approval. It describes the logistics of the monitoring process and establishes protocols to be followed by CPUC's third-party Environmental Monitors and PG&E project staff. This MMCRP includes:

- Procedures for approving minor project changes;
- Procedures for dispute resolution;
- 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.

Section 6 lists the APMs and mitigation measures, the timing for completion, and whether CPUC review or approval is required before construction can commence.

A draft version of the MMCRP was distributed to PG&E and CPUC EMs for review and comment. The final language of the MMCRP was established in consultation with PG&E.

1.4 Agencies with Jurisdiction

The CPUC is the Lead Agency for the Project. However, the project route affects resources or requires activities that are under the jurisdiction of or regulated by other agencies. These agencies that may require separate permits or approvals are listed in Table 1. Contact information for individual agencies is provided in Table 2.

All required permits are to be secured by PG&E. CPUC's EM will be provided copies of every permit secured and will include permit compliance as part of general environmental monitoring duties. If the CPUC EM observes activities or conditions believed to be in violation of a permit, the CPUC EM has the authority to communicate these observations to the appropriate agency. Under their own authority and at their discretion, permitting agencies may implement their own monitoring and reporting schemes and undertake whatever enforcement actions they are authorized to pursue.

Important: The status of required permits will be included in any request by PG&E for a Notice to Proceed from the CPUC. Copies of permits, including any permit requirements and stipulations, shall be provided to CPUC.

Table 1. Permits that May Be Required for the Windsor Substation Project

Agency	Jurisdiction	Requirements
FEDERAL/STATE AGENCIES		
State Resources Control Board (SRWQCB) – Division of Water Quality		National Pollution Discharge Elimination System (NPDES) General Permit for Disturbance Associated with Construction and Land Activities
LOCAL/REGIONAL AGENCIES		
Town of Windsor	Public street ROWs; ministerial approval for construction of new facilities	ROW Acquisition and/or reestablish utility franchise area Grading and Building Permit Roadway Encroachment
Sonoma County		Well Demolition Permit

Table 2. Jurisdictional Agencies Associated with the PG&E Windsor Substation Project

Agency	Address	Contact Person	Phone	E-mail Address
LEAD AGENCY				
California Public Utilities Commission	505 Van Ness Avenue, San Francisco, CA 94102	Eric Chiang	415-703-1956	eric.chiang@cpuc.ca.gov
STATE AGENCIES				
California Department of Fish and Wildlife	7329 Silverado Trail Napa CA 94558	Serge Glushkoff	707-944-5571	Serge.Glushkoff@wildlife.ca.gov
LOCAL AND REGIONAL				
State Resources Regional Water Quality Control Board (SRWQCB) –Division of Water Quality	P.O. Box 100 Sacramento, CA 95812-0100		916-341-5455	stormwater@waterboards.ca.gov
Bay Area Air Quality Management District (BAAQMD)	939 Ellis Street San Francisco, CA 94109		415-771-6000	
Town of Windsor	9291 Old Redwood Highway P.O. Box 100 Windsor, CA 95492	Carl L. Euphrat, PE	707-838-1195	ceuphrat@Townofwindsor.com
Sonoma County Permit and Resource Management Department	2550 Ventura Avenue Santa Rosa, CA 95403		707-565-1900	

1.5 Schedule

PG&E expects to energize the new substation by December 2017. Table 3 shows a preliminary construction schedule for key aspects of the Project: substation and associated line construction; rebuilding the Fulton No. 1 60 kV line and reconductoring local 12 kV lines. The schedule is based on initial conceptual engineering. The actual construction schedule may vary based upon many factors, including the timeline for additional agency approvals, materials acquisition, environmental conditions, and any necessary changes to project design due to unexpected physical conditions.

Important: Except for such pre-construction activities as engineering, design, studies, and permitting, Project-related construction activities will not begin until the CPUC's Project Manager has issued one or more Notices to Proceed covering the planned activities.

Table 3. Preliminary Construction Schedule

	Feb 2016	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 2017	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 2018	Feb
SUBSTATION CONSTRUCTION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Permitting	X	X	X	X	X	X																			
Grading and Foundations							X	X	X	X															
Security Wall							X	X	X	X															
Civil						X	X	X	X	X	X	X	X												
Electrical											X	X	X	X	X	X	X	X	X	X	X	X			
Switches and Bus Structures											X	X	X	X	X	X									
Bank and Switchgear											X	X	X	X	X	X	X	X	X	X	X	X	X		
Ring Bus Installation							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Testing and Commissioning																	X	X	X	X	X	X	X		
Cleanup/Landscaping																								X	X
REBUILD FULTON NO. 1 60 kV POWER LINE AND DISTRIBUTION CIRCUITS															X	X	X	X	X	X	X	X	X		
T-Line Interconnection																					X	X	X		
Install TSP																					X				
Civil Construction																					X				
Temporary Shoofly																					X	X	X		
Tap into Fulton Line																						X			
Distribution Circuit and 60 kV Power Line Installation including Pole Replacement															X	X	X	X	X	X	X				
In-Service Date																							X		

1.5.1 Construction Work Packages

The Project has been divided into two construction work packages, as listed in Table 4. Anticipated start dates for the work packages are shown. Depending on how it organizes and executes its work, PG&E may ultimately use fewer or more work packages.

Table 4. Construction Packages

Work Package	Description	Location	Begin Date
1. Windsor Substation	Construction of substation, vaults, circuits	10789 Old Redwood Highway, Windsor, CA	July 2016
2. Fulton No. 1 60 kV Power Line Rebuild and 12 kV Distribution Line Reconductoring	Rebuild 1.5 miles to hold underbuilt double-circuit 12 kV lines	Existing Fulton No. 1 transmission ROW	December 2016
	Reconductor overhead and underground single-circuit distribution lines	Old Redwood Highway and nearby streets	

Important: Before work can proceed on a work package, a request for a Notice to Proceed (NTP) must be made by PG&E and approved by CPUC (see Section 4.1.1). The mitigation measures and APMs listed in Section 6 include the locations where these requirements apply and identifies what must be implemented prior to the commencement of construction. PG&E will work closely with its construction contractor to ensure that site-specific mitigation measures and APMs are clearly identified and implemented. CPUC EMs PG&E's Environmental Compliance Supervisor will verify the implementation of mitigation measures and APMs prior to and during construction.

2. Roles and Responsibilities

2.1 Implementation

PG&E is responsible for implementing and maintaining all mitigation measures and APMs, and for obtaining and complying with all required permits and their requirements. The utility is responsible for ensuring that its agents and contractors comply with the MMRCP. PG&E also is responsible for satisfying requests from jurisdictional agencies and will notify and copy the CPUC on all correspondences related to final approvals and verifications for the project if not otherwise copied on the correspondence.

Standards for successful mitigation are implicit in some mitigation measures, such as obtaining non-discretionary permits or avoiding a specific impact entirely. Additional resource avoidance or impact minimization conditions may be imposed by applicable agencies with jurisdiction through their discretionary permit processes.

Important: PG&E will inform the CPUC Project Manager in writing of mitigation measures or APMs that are not or cannot be successfully implemented. While the CPUC recognizes the need for flexibility post-decision in response to changed circumstances, it believes changes should be the exception, and it intends to ensure that any proposed change is subject to rigorous standards. Consequently, some requested changes may qualify for the process set forth in the MMRCP for minor project changes (see 4.3.3) while others may require the submittal of a Petition for Modification (PFM) pursuant to CPUC Rules of Practice & Procedure, Rule 16.4(a).

The CPUC, as Lead Agency, is responsible for ensuring that all mitigation measures and APMs are implemented in a timely fashion as specified, and that the CPUC EM verifies PG&E's compliance with mitigation measures, APMs, and conditions of permits issued by other agencies. Similarly, PG&E will construct the

project in accordance and in compliance with all mitigation measures. Other jurisdictional agency representatives may visit construction areas at any reasonable and safe time, and may require information regarding the status of compliance with particular mitigation measures or permits. Additional information on communication protocols is presented in Section 3.

2.2 PG&E Roles and Responsibilities

PG&E project personnel and PG&E's contractors are responsible for implementing all project mitigation measures, APMs, permit conditions, and the MMCRP. It is PG&E's responsibility to comply with project requirements, plan construction activities in a manner that meets these requirements, document compliance activities and the results of mitigation, and implement the MMCRP. In addition to this MMCRP, PG&E will implement its own Environmental Compliance and Management Program (ECMP) that will be specifically tailored to the project and designed to work concurrently with this MMCRP.

PG&E Legal Counsel

PG&E legal counsel may participate in the compliance effort as determined by PG&E. PG&E legal counsel may review project compliance documents, notifications, or participate in dispute resolution should the need arise.

PG&E Project Manager

The PG&E Project Manager provides overall direction, management, leadership, and corporate coordination for the project. The PG&E Project Manager's responsibilities include:

- Coordinating construction, engineering, and PG&E environmental personnel
- Integrating environmental responsibilities into all levels of the project organization
- Ensuring compliance with project mitigation measures, APMs, permit conditions, and the MMCRP
- Communicating project activities, schedules, and public relation issues to the project team

PG&E Environmental Compliance Lead

The PG&E Environmental Compliance Lead shall be the lead PG&E representative responsible for implementing environmental requirements and the MMCRP. The PG&E Environmental Compliance Lead's responsibilities include:

- Understanding and planning for project requirements and construction needs
- Coordinating and completing preconstruction requirements included in project mitigation measures, APMs, permit conditions, and the MMCRP
- Communicating environmental requirements to the PG&E Compliance Team and Construction Managers
- Communicating with the CPUC Monitoring Team regarding environmental requirements, construction needs, and construction schedule changes
- Ensuring compliance with project mitigation measures, APMs, permit conditions, and the MMCRP
- Reporting the effectiveness of mitigation and regularly submitting required documentation and notifications to CPUC
- Providing leadership to correct any issues with environmental compliance

PG&E Subject Matter Experts

The PG&E Subject Matter Experts (SMEs) collaborate with the PG&E Environmental Compliance Lead to provide direction, management, and support within their technical discipline. SMEs provide technical oversight during construction and may coordinate with governmental agencies, as appropriate. The SMEs oversee the implementation of mitigation measures and permit conditions relevant to their area of expertise; ensure that the project follows the appropriate protocols for their technical discipline; collaborate with the PG&E Environmental Compliance Lead to provide direction, management, and support to the PG&E EI(s); prevent and resolve compliance issues associated with their technical discipline; and provide technical input related to their discipline. SMEs for this project include a PG&E Project Biologist, PG&E Cultural Resource Specialist, and PG&E Environmental Field Specialist. The PG&E SMEs' responsibilities include:

- Supporting the Environmental Compliance Lead in environmental compliance
- Understanding and planning for technical requirements of the MMRCP and mitigation measures
- Conducting, or overseeing, monitoring activities specified in project mitigation measures, APMs, and permit conditions
- Ensuring projects follow appropriate technical protocols for their technical discipline
- Providing technical input to facilitate resolutions of unanticipated occurrences related to their technical discipline
- Directing lead and specialty monitors working on technical disciplines
- Communicating with the CPUC Monitoring Team regarding technical environmental requirements
- Communicating with resource agencies on technical disciplines

Environmental Compliance Supervisor

The Environmental Compliance Supervisor is a PG&E or contracted position that shall coordinate the activities of the PG&E Environmental Inspector (EI) and specialty monitors, and will coordinate with the Environmental Compliance Lead to communicate with project management and construction personnel to ensure environmental compliance. The PG&E Environmental Compliance Supervisor's responsibilities consist of those that are delegated by the PG&E Project Manager and the PG&E Environmental Compliance Lead.

Environmental Inspector

The EI is a PG&E or contracted position that shall work closely with construction personnel in the field to ensure implementation of mitigation measures and perform, or oversee, required monitoring tasks. The EI shall be the primary field employee responsible for verifying and communicating day-to-day environmental compliance. Multiple EIs may be used by PG&E as needed to effectively monitor compliance during periods of high construction activity or high monitoring demand. The EI's responsibilities include:

- Understanding and communicating environmental project requirements and construction needs to construction personnel
- Taking direction from the PG&E Environmental Compliance Lead, Environmental Compliance Supervisor, and PG&E Subject Matter Experts
- Supporting construction staff to ensure work is conducted in compliance with environmental requirements
- Monitoring activities specified in project mitigation measures, APMs, and permit conditions

- Conducting pre-construction surveys or required activities as specified in the MMRCP
- Implementing the MMCRP
- Determining the effectiveness of the project's mitigation measures in the field and reporting whether to the PG&E Compliance Team any recommendations

The EI has the authority to redirect any construction activities associated with the project, when it is safe to do so, if the activity poses an imminent safety threat or puts a sensitive resource at risk beyond what is already permitted.

Specialty Monitors

Specialty Monitors shall be assigned as needed to perform monitoring tasks when project mitigation measures, APMs and permit conditions require a specifically qualified monitor to protect designated resources. An EI may perform specialty monitoring if he or she has the appropriate qualifications and experience. The Specialty Monitors have the authority to redirect any construction activities associated with the project, when it is safe to do so, if the activity poses an imminent threat or puts a sensitive resource at undue risk beyond that already permitted

Construction Managers

PG&E Construction Managers provide support to the PG&E Project Manager and oversee the activities of construction personnel. The PG&E Construction Managers shall be based out of PG&E's offices, but may also be available in the field on an occasional basis. PG&E Construction Manager responsibilities include:

- Ensuring compliance with PG&E specifications, project mitigation measures, APMs, permit conditions, MMCRP policies, construction contracts, and applicable codes
- Communicating construction needs and schedule changes to the PG&E Compliance Team
- Regularly facilitating field meetings with construction and environmental staff

Construction Leads

At PG&E's discretion, on-site construction leadership may be delegated to Construction Leads, such as crew foremen. PG&E Construction Leads provide support to the PG&E Construction Managers, and shall be responsible for communicating with PG&E Construction Managers and EIs to conduct day-to-day project activities in compliance with mitigation measures and APM requirements, permit conditions, and the MMCRP, as directed by the PG&E Compliance Team. Key roles of PG&E Construction Leads are to plan construction activities around environmental requirements, as well as to identify and report potentially infeasible challenges to construction to the PG&E Compliance Team.

Construction Workers

Construction workers who enter the project site are responsible for following all mitigation measures and APM requirements, permit conditions, and the MMCRP. Construction workers are responsible for attending required environmental training(s) applicable to their position, and directing any questions to the PG&E Construction Managers, PG&E Construction Leads, and/or EIs.

Subcontractors

PG&E may elect to use subcontracted construction crews on the project. Under the direction of PG&E, subcontracted construction crews are responsible for complying with mitigation measures and APM requirements, permit conditions, and the MMCRP.

2.3 California Public Utilities Commission

2.3.1 CPUC Project Manager

The CPUC PM has overall responsibility for ensuring that mitigation measures and APMs are implemented as adopted by the CPUC. The CPUC PM will determine the effectiveness of the MMCRP based on the implementation of the measures included in the mitigation monitoring table in Section 6. The CPUC delegates field monitoring and reporting responsibilities to its third-party EMs during construction and will oversee their work through telephone calls and review of daily and weekly status reports. The CPUC PM will be notified of all noncompliance situations and may suggest measures to help resolve issue(s).

Important: The CPUC PM will issue NTPs for construction of each work package identified by PG&E. However, the CPUC's NTP does not authorize construction to start if additional approvals are required and pending from other agencies and such approvals have not been obtained at the time of issuance of an NTP. *No construction may occur when other agency approvals are pending without specific approval by those agencies.*

2.3.2 CPUC Environmental Monitor (Aspen)

PG&E has primary responsibility for ensuring that construction activities are conducted in accordance with approved Project mitigation measures, APMs, compliance plans, and permit conditions.

The overall monitoring program will be administered under the direction and oversight of the CPUC PM. The CPUC will delegate daily monitoring and reporting responsibilities to a third-party monitor (Aspen). The role of the CPUC third party monitor (Aspen) is to ensure that compliance is being achieved and to document compliance using verbal and written communications. The number of third-party monitors (CPUC EMs) and the frequency of site inspections will depend on the number of concurrent construction activities and their locations with respect to sensitive resources and land uses.

- **Aspen Monitoring Manager.** The Monitoring Manager supervises Aspen's CPUC EMs, determines the appropriate inspection frequency, and is responsible for weekly report preparation. The Monitoring Manager also serves as the main point of contact with the CPUC PM for major compliance matters.
- **Aspen Project Liaison.** The Project Liaison provides a direct line of contact with CPUC management and legal, as well as PG&E, regarding public complaints and other issues. This person facilitates the development of new procedures to address new issues as they arise. The CPUC PM will determine if this position is required.
- **Aspen CPUC Environmental Monitors (CPUC EMs).** CPUC EMs will conduct the day-to-day monitoring and be the primary point of contact with in-field agency and project personnel. CPUC EMs will be an integral part of the project team and will stay apprised of construction activities and schedule changes, and will monitor construction activities for compliance with project mitigation measures, APMs, compliance plans, and permit conditions. The CPUC EMs will document compliance through daily logs and provide input for the weekly reports. The CPUC EMs shall note any issues or problems with implementation of mitigation/APM/permit conditions, notify the appropriate designated project members, and report problems to the CPUC PM. All other issues will be brought to the attention of the PG&E field representative to address appropriately.

Important: The enforcement authority of the CPUC EM in the field is limited to conditions posing imminent safety or resource endangerment concerns at a work location. The CPUC EM is authorized to temporarily stop work under these conditions if it is safe to do so. PG&E will address the identified issues. Only the CPUC PM has authority to shut down the project completely.

3. Communication

Good communication is essential to successful implementation of an environmental mitigation compliance program. To avoid Project delays, CPUC and PG&E environmental and construction representatives will interact regularly and maintain professional, responsive communications at all times. PG&E representatives will coordinate closely with CPUC EMs throughout the monitoring effort to ensure that issues are addressed and resolved in a timely manner. To that end, this section provides a communication protocol for the timely and accurate dissemination of information to all levels of the Project regarding surveys, plans, mitigation measures, construction activities, and planned or upcoming work.

3.1 Communication Protocol

To ensure that the CPUC EMs can get accurate information on ongoing surveys, construction work, and schedules, the following protocols have been established:

- The CPUC EMs' primary point of contact will be the EI. If not available, the Environmental Compliance Supervisor will be the point of contact. If issues arise and cannot be resolved at this level, the issue will be elevated to the CPUC EM Project Manager/Environmental Compliance Lead via e-mail or telephone.
- The EI or Environmental Compliance Supervisor will inform CPUC EMs of all current and planned survey and construction activities, including status of permits and activity locations, in a timely manner. Timely notification must be sufficient to allow response time for CPUC monitors to be present for that activity.
- The CPUC EM and other designated agency representatives or staff may talk to anyone on the construction site to ask questions about their activity, but the construction personnel may opt to refer the CPUC EM to the EI or other designated person. The EIs are the appropriate contacts for obtaining information on construction activity schedules or construction practices.
- PG&E will provide to the CPUC EM a list of all construction monitoring personnel and managers, identified by work package or component, title, and contact information. An updated list will be distributed as needed to keep all parties informed of monitor and staff additions/changes, as well as construction scheduling changes. This list of personnel, subsequent updates, and construction schedule changes will be distributed to all persons on the list throughout the construction process.
- The CPUC EM will continue to report compliance concerns first to the EI and give them time to resolve compliance issues. If this includes discussions with resource agencies, documentation of such communication and any subsequent actions to be undertaken to achieve compliance will be provided to the CPUC EM. If the concern involves a permit, because PG&E is the permit holder with jurisdictional agencies, the Environmental Compliance Lead will consult with the applicable resource agencies. If the CPUC EM has an ongoing unresolved concern about a mitigation measure that could affect a permit condition or could result in resource endangerment, the Environmental Compliance Lead will contact the appropriate resource agency to discuss the issue. The Environmental Compliance Supervisor will take the lead in the coordination effort and in resolving the issue.
- The resource agencies will be notified immediately (within 24 hours) by the Environmental Compliance Lead of any substantive non-compliance issues regarding resources under their jurisdiction and of any actions taken to resolve the issue, consistent with permit requirements. In addition, the CPUC EM will receive immediate notification of these communications if not already aware of the issue and action.
- Prior to or subsequent to agency notification, the Environmental Compliance Lead, assisted by the Environmental Compliance Supervisor and PG&E Subject Matter Experts, will develop a plan to resolve the issue and will follow up with the respective agencies to explain the strategy and receive agency approval.

- PG&E will expeditiously provide verbal notification and/or submit a preliminary electronic notification of a suspected non-compliance event, followed by a timely submittal of a final notification that more fully characterizes the event, actions, and outcomes.
- If a "take" of a biological resource is imminent or if there is a danger/hazard to a special status biological resource, the CPUC EM can request that work be stopped in that area immediately (as long as it can be done safely); this request should be made to the EI or senior PG&E person on site. At any time, anyone can order an activity to be halted temporarily if a take or a hazard is imminent.
- Bi-weekly conference calls will include a discussion of construction and compliance activities between the CPUC EM and Environmental Compliance Supervisor, with additional PG&E environmental staff and agency staff participating as determined appropriate.

3.2 Pre-Construction Compliance Coordination

Prior to construction, PG&E is required by the terms of some project mitigation measures and APMs and in some cases by permitting requirements of other agencies, to prepare various plans and obtain approval of these plans, in addition to performing surveys. During the pre-construction period, PG&E will conduct meetings, conference calls, and site visits with the CPUC, technical representatives of the CPUC third-party monitor, and other agencies. The purpose of the pre-construction compliance coordination process is to:

- Discuss and document the status of all required PG&E's submittals,
- Document the findings of data reviews and jurisdictional agency approvals,
- Review PG&E submittals,
- Document the status of mitigation measures/APMs as they apply to the Project or work packages, and
- Discuss refinements or minor changes to the Project.

The goal of the pre-construction process is to complete all required actions so the CPUC and other agencies, as appropriate, can issue NTP authorizations for each Project work package.

Other pre-construction activities include the following:

- Inclusion of mitigation requirements in contract designs, instructions, and specifications
- Field verification of work locations to confirm any need for siting adjustments based on the presence of sensitive resources
- Field verification of any construction yard sites

A pre-construction meeting is planned with the CPUC, PG&E, and CPUC EMs to review the MMCRP and mutually agree upon the Project's communication protocol.

3.3 Coordination during Construction

Many mitigation measures were derived from specific permit conditions or agency input. If an issue arises during construction that requires resource agency coordination, the EI will immediately contact the CPUC EM, Environmental Compliance Supervisor, PG&E's Environmental Compliance Lead and Subject Matter Expert. PG&E will be responsible for contacting resource agencies and immediately notifying them of noncompliance issues arising with regard to matters under their jurisdiction. CPUC shall be copied on all correspondence (email or letter) and provided copies of documentation that flow between PG&E and resource agencies. If an unresolved issue regarding compliance with a mitigation measure affects a permit requirement under the jurisdiction of a resource agency, the CPUC EM will notify the EI or PG&E's team, and the Environmental Compliance Lead will coordinate with the agency to resolve any issues. Ongoing consultation and results will be included in PG&E's weekly report.

3.4 Daily Communication

Generally, problems encountered during construction can be resolved in the field through regular communication among the EI, construction contractors, and CPUC EMs. Field staff will be equipped with cell phones and will be available to receive phone calls at all times during construction. The Project contact list will be provided and updated as needed by PG&E.

3.4.1 CPUC EMs

The CPUC EM's primary point of contact in the field is the EI. The CPUC EM will contact the EI if an activity is observed that conflicts with one or more of the mitigation measures, APMs, or permit conditions, so that the situation can be corrected by PG&E. If the CPUC EM cannot immediately reach the EI, the Environmental Compliance Supervisor will be contacted to address the issue. Similarly, the CPUC EM will contact the EI for information on where construction crews are working, the status of mitigation measures, and for schedule forecasts. The CPUC EM may discuss construction procedures directly with the construction contractors; however, PG&E may require its construction contractors to defer questions to an onsite PG&E representative. In all cases, the CPUC EM will contact the designated PG&E representative if a problem is noted that requires action from the construction contractor or PG&E.

Important: The CPUC EM will not direct the construction contractor, but will contact the designated PG&E contact person. In the event an activity imposes an imminent threat to a sensitive resource or an undue risk, the CPUC EM will try to contact the EI, who has the authority to stop work; however, if they are not immediately available, the CPUC EM has the authority to stop work at that location if it is safe to do so.

3.4.2 PG&E

PG&E will provide the CPUC and the CPUC monitoring team with a contact list identifying construction monitoring personnel and construction supervisory staff to contact regarding compliance issues. The contact list will include each person's title and responsibility, including the names of PG&E and CPUC EMs, project managers, supervisory staff, and other members of the team. The list shall include phone numbers and e-mail addresses where team members can be reached during construction. The contact list will be updated and redistributed as necessary by PG&E as new personnel are assigned to the Project. This list is confidential and will not be published or put on the CPUC project website.

PG&E and/or its contractors will hold daily onsite meetings that the EI will attend. Prior to beginning the day's work at a job site, a tail-board briefing will be held by PG&E and/or its contractor. Possible subjects include reemphasizing safety and identifying any specific safety concerns associated with that day's operation, potential environmental issues that workers should be aware of, etc.

3.5 Scheduled Communications

3.5.1 PG&E Compliance Report

PG&E will prepare and distribute a weekly environmental compliance status report for distribution to key team members, including the CPUC. The CPUC EM will review the weekly report to ensure that the status of mitigation measures, APMs, and permit conditions is consistent with observations in the field. Questions regarding the status of mitigation measures will be directed to the Environmental Compliance Supervisor**.** The weekly environmental compliance status report also will be a tool to keep all parties informed of construction progress and schedule changes.

3.5.2 Scheduled Progress Meetings

PG&E will conduct weekly field meetings with construction managers, supervisors, PG&E's environmental representatives, and other appropriate staff to discuss work completed, work anticipated for the following period, and the status of mitigation measures. The weekly field meetings also will provide a forum for discussing environmental compliance issues or concerns.

PG&E may request that CPUC EMs (and other agency EMs) participate in the field meetings to help resolve any issues that may have arisen during the previous period and to anticipate potential issues that may arise during upcoming activities. Alternatively, the Environmental Compliance Lead or the CPUC's EMs may recommend a separate meeting to discuss mitigation, project change requests, or other Project-related issues. These meetings may be held at a designated office location or on the Project site.

3.5.3 Scheduled Conference Call

The Environmental Compliance Lead, Environmental Compliance Supervisor, SME, CPUC PM, the CPUC EM, and other parties may participate in a bi-weekly teleconference call. The teleconference calls will be scheduled for an agreed date and time and will be used to identify actual or potential issues and discuss solutions. The conference calls will focus on the Mitigation Monitoring Program and project progress generally.

3.6 As-needed Interagency Conference Calls

From time to time during the pre-construction process or during construction, the CPUC, resource agencies, and/or PG&E may determine that conference calls may be necessary or appropriate to discuss the status of specific mitigation compliance as they relate to permit requirements. These calls will be scheduled in advance, to the extent feasible, by e-mail, and will include the Environmental Compliance Lead and PG&E's Subject Matter Expert, as needed. An agenda will be provided before the call.

4. Environmental Compliance and Field Procedures

4.1 Pre-Construction Compliance Verification

Prior to beginning construction, PG&E is required by the terms of the mitigation measures, APMs, and various permits and approvals for other regulatory agencies, to prepare and obtain approval of various plans and to perform various surveys and studies. Copies of plans, surveys, and studies will be retained by Aspen and provided to the CPUC with all files at the completion of the Project. The plans, surveys, studies, and other documentation required to be completed by PG&E before construction are identified in Section 6.

While these documents are being reviewed by the approving agencies, they also are reviewed by the CPUC and its representatives. Resource agencies also may be involved in the review of applicable plans and reports.

The CPUC EMs, including project management staff and technical experts as needed, will review and provide comments on all mitigation plans and reports. As appropriate, resource agencies also may be involved in the review of applicable plans and reports, and may provide comments. Comments on submitted plans and reports will be provided to PG&E to ensure that they adequately accomplish the intended reduction in impacts. For required local and State agency permitting/consultations, the CPUC EM will track PG&E's progress as it relates to PG&E's construction plans and project mitigation, APMs, and permitting requirements. Based on PG&E's construction plans, CPUC may authorize construction to begin on a phased basis,

and the CPUC EM will handle pre-construction compliance review accordingly. CPUC may issue NTPs for construction of each phase separately, as soon as pre-construction compliance is satisfactorily accomplished for that phase.

Important: Compliance with all pre-construction mitigation measures and APMs will be verified prior to construction, and construction may not start on any work package before PG&E receives a written NTP from the CPUC PM and other necessary approvals, if any. In general, the CPUC will not issue an NTP until all pre-construction requirements have been fulfilled for a given phase. To save time, PG&E should identify all required workspace needs for each phase of construction prior to the start of active construction, so that the locations and their use can be included in the NTP.

4.1.1 Notice to Proceed Procedures

CPUC must issue an NTP before construction can start.

PG&E will submit a formal request for an NTP. If needed, minor project change requests may be submitted by PG&E with the NTP request for incorporation into the NTP (see Section 4.3.3 for minor project change submittal requirements). Where there may be multiple spreads or work sites, PG&E may elect to request separate NTPs. Each separate NTP request will be applicable to a defined segment or aspect of the Project.

CPUC will review the NTP request and the applicable pre-construction requirements to ensure that all information required to process and approve the NTP is included. CPUC may request additional information or clarification as needed. Based on information provided in the request for an NTP and its review, CPUC will issue the NTP.

In general, an NTP request must include the following:

- A description of the work
- Detailed description of the location, including maps, photos, and/or other supporting documents
- Verification that all mitigation measures, permit conditions or requirements, APMs, project parameters, or other project stipulations that apply to the work covered by the NTP request have been met.
- In a case where some outstanding requirements cannot be met prior to issuance of the NTP, an outline of outstanding submittals and how they will be met prior to construction
- Up-to-date resource surveys or a commitment to conduct surveys and submit survey results prior to construction
- Cultural resource surveys or verification that no cultural resources will be significantly impacted
- Copies of permits issued by other agencies, including any requirements
- Date when construction is anticipated to begin and estimated duration of work

Section 6 lists the mitigation measures and APMs, the timing for implementation, and whether CPUC review or approval is required before construction can begin. For reference, each NTP issued by CPUC will reiterate CPUC and other agency conditions or requirements that must be satisfied either before work begins or during construction. The NTP will state whether pre-construction requirements in mitigation measures, APMs, and permits have been met, including the completion of any applicable surveys and studies to be undertaken. If compliance with some requirements cannot be met prior to NTP issuance, the reasons will be identified by PG&E and noted in the NTP. At its discretion, CPUC may issue the NTP subject to specific conditions. In such an event, the NTP will clearly define any limitations that apply and the actions to be taken and documented by PG&E prior to construction.

4.1.2 Compliance Reporting

The CPUC EM will perform compliance inspections throughout construction to ensure compliance with all applicable mitigation measures, APMs, plans, permits, and conditions of approval from CPUC and other agencies. The CPUC EM will document observations in the project area through field notes and digital photography. The photographs will be incorporated in weekly reports and related to a discussion of specific construction or compliance activity. In addition, daily field logs documenting compliance of specific crews, construction activities, or resource protection measures will be maintained. Field logs will be used to prepare weekly reports and to track and update the status of mitigation measures listed in Section 6.

Site visits by CPUC may be coordinated with PG&E or be unannounced. Supplemental information provided by PG&E, including pre-construction submittals, survey reports, weekly reports, meeting notes, and agency correspondence also will be used to verify compliance.

Compliance documents and reports will be posted on the CPUC public website, accessible at:

http://www.cpuc.ca.gov/environment/info/aspen/windsorsub/windsorsub.htm

4.1.3 Compliance and Non-Compliance Levels

Project compliance and non-compliance levels that will be used and the specific actions by the CPUC monitoring team are as follows:

- ***Level A Compliance.*** All mitigation measures and permit conditions are being complied with and there are no violations. No corrective action is necessary.
- ***Level B Non-Compliance.*** One aspect of a mitigation measure is not in compliance, resulting in only partial implementation of a measure or permit condition, but there has been no significant impact as a result.

  Action: A verbal notice shall be given to the Environmental Compliance Lead (or assigned designee) and corrective action shall be required of PG&E within 1 day or other maximum period, as determined by the CPUC EM.

  Follow up: If corrective action is not taken within the stated period, a Project Memorandum (written warning) will be issued. If a Level B Non-Compliance is allowed to continue, the non-compliant activity could result in a significant impact over time. Therefore, the frequency of Level B Non-Compliances will be tracked by the CPUC EM.

  If corrective action is not taken or does not address Level B Non-Compliance trends, a Non-Compliance Report (NCR) will be issued. The NCR will state that failure to resolve the identified condition or situation may lead to a project stop work order and/or action under the CPUC's CEQA Citation Program.

- ***Level C Non-Compliance.*** One or more of the aspects of a mitigation measure or permit condition are not in compliance, and the implementation of a mitigation measure is deficient or non-existent, resulting in potentially significant impact(s) or an immediate threat of major, irreversible environmental damage or property loss.

  Action: A verbal notice shall be given to the Environmental Compliance Lead (or assigned designee), followed immediately by an NCR sent to PG&E's Environmental Compliance Lead (or assigned designee). Corrective action shall begin immediately.

  Follow up: If corrective action is not taken immediately or the corrective action is insufficient, the CPUC EM shall notify the CPUC PM, Aspen Monitoring Manager, and Aspen Liaison, who will review courses of action available.

- ***Level D Stop Work Order.*** The CPUC has the authority to shut down project construction. Stop Work Orders halt construction and are issued when a compliance violation continues over an extended period of time, is repeated several times, or when a violation could cause harm to a resource.

  Action: Based on the severity of a given infraction or pattern of non-compliant activity, the CPUC Energy Division Director may direct that all or some portion of the work be stopped. This order will be conveyed directly from the Director or through the CPUC PM.

  Follow up: If a shutdown of construction or an activity is ordered, the construction or activity shall not resume until authorized by the Energy Division Director or CPUC PM in writing.

Important: CPUC also may exercise the CEQA Citation Program adopted by the Commission in Resolution E-4550. The program delegates authority to Commission staff to draft and issue citations and levy fines for non-compliance with a PTC or CPCN. The Resolution allows Commission staff to efficiently issue fines when needed to quickly address non-compliance issues that are occurring in the field.

A non-compliant event regarding environmental resources may involve other agencies, in which case:

- The CPUC EM will confirm that PG&E has informed the applicable resource agency when non-compliant actions have the potential to harm an environmental resource or species (outside the reporting process associated with incidental takes as permitted by the resource agency).
- If timely notification is not made by PG&E, the CPUC EM will contact the applicable resource agency.

If permit or resources issues are involved, the CPUC and/or resource agencies may order work stoppages and the development of strategies for successful resource/species protection, consistent with the applicable permit or mitigation measure.

Important: The CPUC EM does not have the authority to shut down or restart construction, nor shall the CPUC EM direct the work of a construction contractor or subcontractor. However, if an imminent threat to safety or an unpermitted risk to a sensitive resource is observed, the CPUC EM has the responsibility to advise the PG&E or contractor site manager to immediately cease the threatening activity until the situation is rectified, as long the activity can be stopped safely. The CPUC EM shall immediately notify the CPUC PM and Aspen Monitoring Manager and report the status. If not action is taken by PG&E in response to the situation, CPUC will determine next steps.

4.1.4 Compliance Reporting and Documentation

All non-compliant activity will be recorded and reported. Based on the severity of the non-compliant event, notice to CPUC will be immediate or in the weekly report.

The CPUC EM will determine whether the observed construction activities are consistent with mitigation measures, APMs, and project parameters as identified in the Final MND and adopted by the CPUC, as well as any applicable permit conditions. All observations and communications will be noted in a logbook. Deviations from mitigation measures, APMs, or permit conditions will be considered non-compliant events and will be documented.

4.1.5 PG&E Reportable Events

Unanticipated events may occur that impact project personnel, public safety, or resources and may not be observed by the CPUC EM. While these events may not result in a deviation from or violation of a mitigation measure or permit condition, it is important that these events be reported to the appropriate agencies and the CPUC so they are in a position to respond to questions or concerns from the public or managers.

Accordingly, PG&E will immediately report these events to the CPUC and other regulatory agencies as appropriate. PG&E will submit to the appropriate agency, if any, and to CPUC a final verbal or electronic notification characterizing the event, actions taken, and outcomes.

Examples of reportable events are:

- any event a mitigation measure failed to address
- a violation of a permit condition
- an occurrence that posed or could have posed a risk to public health and safety
- any event requiring emergency response
- a "near miss" event involving construction equipment and, in PG&E's reasonable judgment, had the potential to result in serious bodily harm or death.

4.2 Dispute Resolution

The MMCRP is intended to reduce or eliminate potential disputes. However, even with the best preparation, differences in mitigation implementation approaches and interpretation may occur. Issues should first be addressed informally at the field level, between the CPUC EM and PG&E's EIs or Environmental Monitors, and at the regular progress meetings. Questions may be raised to the PG&E Environmental Compliance Lead and the PG&E Project Manager for resolution. Should the issue persist or not be resolved at these levels, the following procedures will be used.

Step 1. Differences in mitigation implementation approaches, disputes, and complaints (including those of the public) are directed to the CPUC PM for resolution. The PM will attempt to resolve the dispute with PG&E's Environmental Project Manager.

Step 2. If Step 1 fails to resolve the issue, the CPUC PM may initiate enforcement or compliance action to address deviations from the Project or the adopted MMCRP, if they have occurred without prior authorization. The CPUC Project Manager may issue a formal letter requiring corrective actions to address the unresolved or persistent deviations from the Project or adopted MMCRP.

Step 3. If the differences, dispute, or complaint cannot be resolved informally or through enforcement or compliance action by the CPUC, the 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) will meet or confer with the filer and other affected participants to resolve the dispute. The Executive Director will issue an Executive Resolution describing the decision, and serve the filer and other affected participants.

Step 4. If one or more of the affected parties is not satisfied with the decision as described in the resolution, such parties may appeal it to the Commission via a procedure to be specified by the Commission.

Involved parties may also seek review by the Commission through procedures specified in the Commission's 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.

Separate enforcement steps by the regulatory agencies may follow different steps or procedures. The CPUC PM and the Environmental Compliance Lead will coordinate with other permitting agencies for issues outside CPUC's jurisdiction. Separate dispute resolution or enforcement steps solely involving other regulatory agencies would follow that agency's procedures.

The dispute resolution process could occur concurrently with the communication protocol during construction for non-compliant events.

4.3 Project Refinements

4.3.1 Transition from Preliminary Design to Final Engineering

The MND for the Project was based on preliminary designs. PG&E has been in the process of completing final project design and engineering. Some project component locations may have been refined as engineering progresses in order to comply with mitigation measures, avoid or minimize environmental impacts, and reduce or eliminate feasibility constraints.

Mitigation measure requirements were finalized at the time of project approval, and pre-construction compliance submittals will be reviewed based on the requirements in these measures. The process outlined below allows for changes in the case of unforeseen circumstances, as long as the intent of the mitigation measure is satisfied (i.e., the impact is mitigated as intended, consistent with residual impact determinations in the MND).

4.3.2 Project Changes

At various times throughout project construction (following approval of final design plans), changes to the Project requirements may be needed to facilitate construction or provide more effective protection of resources. When changes are necessary for specific field situations, PG&E and CPUC, in consultation with the applicable resource agencies, will work together to find solutions that avoid conflicts with adopted mitigation measures.

4.3.3 Minor Project Changes

The CPUC PM, 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 is consistent with CEQA requirements.

- No project changes will be approved by the CPUC PM if they
  - would be located outside of the geographic boundary of the project study area,
  - create new or substantially more severe significant impacts, or
  - conflict with any mitigation measure or applicable law or policy.
- Minor project changes are strictly limited to changes that
  - will not trigger other permit requirements unless the appropriate agency has approved the change, and
  - clearly and strictly comply with the intent of the mitigation measure or applicable law or policy.

This determination is ministerial, and shall be made by the CPUC Project Manager. PG&E must seek any other project changes by a Petition for Modification (PFM). Should a project change require a PFM, supplemental environmental review under CEQA would be required.

Requests for staff approval of a minor project change must be made in writing and should include the following:

- A detailed description of the proposed minor changes, including an explanation of why the refinements are necessary, and a reference to the approved documents.
- Photos, maps, and other supporting documentation illustrating the difference between: the existing conditions in the area, the approved project, and the proposed minor changes.

- The potential impacts of the proposed minor changes, including a discussion of each environmental issue area that could be affected by the minor changes with accompanying verification that there will be no substantial increase in the severity of any previously identified significant impacts to resources affected by the project and no new significant impacts, after application of previously adopted mitigation.
- Whether the minor changes conflict with any applicant proposed measures or mitigation measures.
- Whether the minor changes conflict with any applicable guideline, ordinance, code, rule, regulation, order, decision, statute or policy.
- Water/wetland/storm water related resource information if the minor changes would result in any additional land disturbance, road distance or width, changes to jurisdictional delineation of waters, or changes to water protection best management practices.
- Date of expected construction at the minor changes site area.

The CPUC PM may request additional information or a site visit in order to process the request. Examples of changes that may be approved by staff after final engineering include, but are not limited to:

- Adjusting the alignment or position of a project element to avoid unanticipated impacts related to cultural artifacts, buried utility infrastructure, hazardous and toxic substances, and other land use impacts including effects on homeowners.
- Adjusting the alignment or position of a project element to avoid or adapt to conditions on the ground that vary from the conditions that existed at the time of the original environmental analysis.

Important: The changes must be located within the geographic study area used in the original environmental analysis and must not create a new significant impact or a substantial increase in the severity of a previously identified significant impact**.**

To initiate a project minor changes request, PG&E will complete a Project Minor Change Request Form (see Attachment B), prepare the appropriate supporting documentation, and obtain the required signatures. PG&E will submit the completed Project Minor Change Request Form and supporting documentation by email (scanned copy) to the CPUC Project Manager with a copy to Aspen.

The CPUC Monitoring Team will review the 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 EM, or may request additional information to process the request. In some cases, project minor changes may require approval by jurisdictional agencies as well.

All approved minor change requests will be tracked in the weekly reports.

4.3.4 Temporary Extra Work Space Procedures

For the purposes of this MMCRP, Temporary Extra Work Space (TEWS) is defined as an existing workspace (i.e., no site preparation is required) that was not specifically identified and evaluated during the CEQA process but would be used by PG&E during construction for a period of up to 60 days. Any such location required to be utilized for a period longer than 60 days will require a minor project change approval (see Section 4.3.3).

In the event that PG&E determines a need for a construction TEWS, it must submit such a request to the CPUC, consistent with the communication protocol. PG&E will not be permitted to use a TEWS prior to receiving written authorization from the CPUC. If appropriate, PG&E will also send a copy of the TEWS to affected jurisdictional agencies.

PG&E must demonstrate that:

(1) the TEWS is located in a disturbed area with no sensitive resources or land uses onsite or within proximity of the proposed workspace such that they may be significantly impacted by the work,

(2) PG&E has permission of the landowner (e.g., municipality or private) to use the workspace, and

(3) use of the TEWS will not result in any significant environmental impacts.

Following is a list of the specific information that PG&E would be required to submit with its TEWS request:

- Date of request
- Location of the TEWS (detailed description, including maps if required)
- Property owner of TEWS
- An explanation of the need for the TEWS
- An analysis that demonstrates no new significant impacts will result from use of the TEWS including: compaction contributing to runoff rates or other stormwater/watershed effects; observed existing impacts to the site, such as old oil spills or other potentially hazardous or polluting substances; abandoned vehicles, equipment, or other materials; or other sensitive resources
- Biological and botanical surveys, if appropriate
- Cultural resource survey
- Duration and dates of expected use of the TEWS
- Details of the expected condition of the site after use

A sample TEWS form is included as Attachment C.

5. Records Management

Weekly status reports will be filed and used by the CPUC third-party EM to prepare a final environmental compliance report following the completion of construction. The final report will provide an overview of construction and a discussion of environmental compliance and lessons learned.

5.1 Public Access to Records

A publicly accessible website for the Project is maintained by the CPUC to make available current versions of reports and other documents prepared for mitigation compliance.

The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports will be made available by the CPUC for public inspection on request, consistent with critical infrastructure requirements, requirements to protect cultural resources, and General Order (G.O.) 66-C. In order to facilitate the public's awareness, the CPUC will post this MMCRP document, weekly reports, and other pertinent Project documents on the CPUC public website. Other monitoring compliance reports, copies of permits, and documents will be available in their final form on the Project website once they are approved by the CPUC or other permitting agencies. Access to Critical Energy Infrastructure Information (CEII) documentation, the location of protected cultural resources, and other information meeting the standards for non-disclosure set forth in G.O. 66-C will not be available on the public website.

The CPUC public website is accessible at:

http://www.cpuc.ca.gov/environment/info/aspen/windsorsub/windsorsub.htm

6. Mitigation Measures and APMs

The following tables include the mitigation measures and APMs from the adopted MND. The tables indicate the resource of concern, the measure to be implemented, the monitoring requirement, and when the measure is to be implemented.

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	Aesthetics			
Existing Visual Character	**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.	Review landscape plan and ensure establishment of vegetation screening	X	—
	Air Quality			
Operation and Maintenance Phase Air Quality/Greenhouse Gas	**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.	Ensure potential for SF_6 leaks is minimized according to a leak reduction standard that would be consistent with the CARB Climate Change Scoping Plan	X	—
	Biological Resources			
Construction Phase Biological Resource Impacts	**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.	Review environmental training materials, review documentation of environmental training	X	X
Soil and Vegetation	**APM BIO-2.** Soil and vegetation disturbance will be minimized to the greatest extent possible.	Ensure implementation to minimize impacts to biological resources	X	X
Construction Phase Biological Resource Impacts	**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.	Review environmental training materials	X	X
Special Status Species	**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 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.	Ensure implementation to reduce impacts to biological resources (supplemented by MM B-1, MM B-3, MM B-4, and MM B-5)	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
Special Status Plant Species	**APM BIO-7.** If special-status plant species are found during any of the special-status plant surveys, PG&E will modify the project to avoid impacts to special-status plant species. If identified special-status plant species cannot be avoided, PG&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: ■ acquire suitable habitat for identified species within the project site, ■ develop a long-term habitat enhancement plan for identified species, and/or ■ monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan.	Ensure implementation to reduce impacts to special-status plants (supplemented by MM B-2)	X	X
Burrowing Owls	**APM BIO-10:** 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.	Ensure implementation of surveys and monitoring (if necessary) for burrowing owls	X	X
Badgers	**APM BIO-11.** Badger dens will be clearly demarcated with appropriate flagging and signs and avoided if possible.	Ensure badger dens are demarcated	X	X
Badgers	**APM BIO-12.** If a badger den cannot be avoided, CDFW will be consulted to discuss the possible relocation of the badger.	Implement CDFW recommendations if necessary	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
Construction Phase Biological Resources Impacts	**MM 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.	Review training materials, ensure all workers are trained	X	X
Special Status Plants, Wetlands, and Vernal Pools	**MM 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: ■ Design project and construction activities to avoid impacts to wetlands and water features to the extent feasible. ■ 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. ■ 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. ■ 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:	Ensure implementation to minimize impacts on special status plants, vernal pools, and wetlands. Review compensatory mitigation if necessary.	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	– 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 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.			
Nesting Birds	**MM 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,	Ensure implementation to protect northwestern pond turtles	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	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.			
Wetlands	**MM 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.	Ensure implementation of surveys and buffers to protect nesting birds	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	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.			
Special-status bats	**MM 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.	Ensure implementation of surveys and buffers to protect roosting bats	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	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 to 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: ■ 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. ■ 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. ■ 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.			

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	Cultural Resources			
Construction Phase Cultural Resource Impacts	**APM CU-1.** Prior to the initiation of construction or ground-disturbing activities, PG&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.	Avoid unanticipated cultural resources, train project workers	X	X
Construction Phase Cultural Resource Impacts	**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.	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.	X	X
Previously Identified Cultural Resources	**MM 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.	Flag and avoid known cultural resources	X	X
	Hazards and Hazardous Materials			
Construction Phase Hazardous Material Impacts	**APM HM-1.** 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	X	X
Construction Phase Hazardous Material Impacts	**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).	Review worker environmental awareness training program	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
Construction Phase Hazardous Material Impacts	**MM 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 contami-nation 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.	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.	X	X
	Hydrology and Water Quality			
Construction phase water quality impacts	**APM WQ-1.** All BMPs will be on-site and ready for installation before the start of construction activities.	Review and approve BMPs and ensure installation	X	X
Stormwater Pollution	**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: ■ silt fences or other sediment containment methods placed around and/or down slope of disturbed areas prior to construction; ■ protection of drain inlets from receiving polluted stormwater through the use of filters, such as fabrics, gravel bags, or straw wattles; ■ 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; ■ construction of a stabilized construction entrance/exit to prevent tracking onto roadway; ■ establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids. Use of oil pans under stationary vehicles is strongly recommended; and ■ no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or creeks. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of wetlands, culverts, or creeks will be positioned over secondary containment.	Review and approve SWPPP and CSMP. Prevent pollution of stormwater related to the project.	X	X

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
Construction phase water quality impacts	**APM 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.	Review worker environmental awareness training program	X	X
Stormwater pollution	**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.	Review SPCC plan and ensure implementation	X	X
Jurisdictional Waters	**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 within proposed substation site.	Ensure acquisition of required permits	X	—
	Land Use			
Construction Land Use Impacts	**MM LU-1. Provide advance notice of construction.** *Advance Notice.* Prior to construction, the Applicant shall give at least 10 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: ■ Describe where and when construction is planned; ■ 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.	Review and approve notification template prior to posting. Review reported complaints as necessary.	X	X
	Noise			
Construction Phase Noise Impacts	**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.	Review proposed noise-reduction features	X	X
Construction Phase Noise Impacts	**APM NO-4.** Construction crews will use equipment that is specifically designed for low noise emissions.	Review and approve construction equipment	X	X
Construction Phase Noise Impacts	**APM NO-5.** Locate all stationary construction equipment as far as practical from noise sensitive receptors.	Review stationary equipment locations to ensure minimization of noise impacts	X	—

Table 5A. Mitigation Monitoring Plan – Pre-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Distri-bution**
	Traffic/Transportation			
Construction Traffic	**MM 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.	Review notification of and coordination with emergency service providers	X	X
Public Transportation	**MM 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.	Review SCTD consultation, SMART approval, and, if necessary, bus reroutes to ensure minimization of impacts	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Aesthetics			
Existing Visual Character	**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.	Review landscape plan and ensure establishment of vegetation screening [Also pre-construction]	X	—
	Air Quality			
Particulate Matter Emissions and Dust	**APM AQ-1**. Water all active construction areas at least twice daily during dry conditions.	Monitor watering of construction areas	X	X
Particulate Matter Emissions and Dust	**APM AQ-2**. 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	X	X
Particulate Matter Emissions and Dust	**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.	Monitor appropriate dust suppression	X	—
Particulate Matter Emissions and Dust	**APM AQ-4**. Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites if visible soil material is present.	Monitor sweeping of paved areas and staging areas	X	X
Particulate Matter Emissions and Dust	**APM AQ-5**. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.	Monitor street sweeping as appropriate	X	X
Construction Phase Air Quality	**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.	Review efforts to encourage carpooling	X	X
Construction Phase Air Quality	**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.	Review efforts to use low-emission construction equipment	X	X
Construction Phase Air Quality	**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.	Monitor compliance with idling requirements	X	X
Construction Phase Air Quality/ Greenhouse Gas	**APM AQ-9**. 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	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Construction Phase Air Quality/ Greenhouse Gas	**APM AQ-10**. Minimize welding and cutting by using compression of mechanical applications where practical and within standards.	Ensure emissions from construction equipment exhaust are reduced	X	X
Construction Phase Air Quality/ Greenhouse Gas	**APM AQ-11**. Encourage the recycling of construction waste where feasible.	Review efforts to recycle construction waste	X	X
Construction Phase Air Quality/ Greenhouse Gas	**APM AQ-12**. Comply with California Air Resources Board Early Action Measures as these policies become effective.	Monitor compliance with current and future CARB policies [Also during operations]	X	X
Operation and Maintenance Phase Air Quality/Greenhouse Gas	**APM AQ-13**. Maintain substation breakers in accordance with PG&E's maintenance guidelines.	Ensure that operational emissions and greenhouse gas are minimized [During operations]	X	X
Operation and Maintenance Phase Air Quality/Greenhouse Gas	**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.	Ensure potential for SF_6 leaks is minimized according to a leak reduction standard that would be consistent with the CARB Climate Change Scoping Plan [Also during operations]	X	—
Construction-Phase Air Quality	**MM 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: ■ Limit the speeds of construction vehicles on unpaved surfaces to 15 miles per hour. ■ 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. ■ 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. ■ Construction equipment will be properly maintained. All off road 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).	Ensure implementation so that construction emissions, dust, and greenhouse gas are minimized	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Biological Resources			
Construction Phase Biological Resource Impacts	**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.	Review environmental training materials, review documentation of environmental training [Also prior to construction]	X	X
Soil and Vegetation	**APM BIO-2.** Soil and vegetation disturbance will be minimized to the greatest extent possible.	Ensure implementation to minimize impacts to biological resources [Also prior to construction]	X	X
Construction Phase Biological Resource Impacts	**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.	Review environmental training materials [Also prior to construction]	X	X
Special Status Species	**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 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.	Ensure implementation to reduce impacts to biological resources (supplemented by MM B-1, MM B-3, MM B-4, and MM B-5) [Also prior to construction]	X	X
Construction Phase Biological Resource Impacts	**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 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	X	X
Construction Phase Biological Resource Impacts	**APM BIO-6.** Trash dumping, firearms, and pets will be prohibited in project work areas.	Ensure implementation to reduce impacts to biological resources	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Special Status Plant Species	**APM BIO-7.** If special-status plant species are found during any of the special-status plant surveys, PG&E will modify the project to avoid impacts to special-status plant species. If identified special-status plant species cannot be avoided, PG&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: ■ acquire suitable habitat for identified species within the project site, ■ develop a long-term habitat enhancement plan for identified species, and/or ■ monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan.	Ensure implementation to reduce impacts to special-status plants (supplemented by MM B-2) [Also prior to construction]	X	X
Sensitive Habitat	**APM BIO-8.** 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	X	X
Raptors	**APM BIO-9.** 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	—	X
Burrowing Owls	**APM BIO-10:** 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.	Ensure implementation of surveys and monitoring (if necessary) for burrowing owls [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Badgers	**APM BIO-11.** Badger dens will be clearly demarcated with appropriate flagging and signs and avoided if possible.	Ensure badger dens are demarcated [Also prior to construction]	X	X
Badgers	**APM BIO-12.** If a badger den cannot be avoided, CDFW will be consulted to discuss the possible relocation of the badger.	Implement CDFW recommendations if necessary [Also prior to construction]	X	X
Native and Invasive Species	**APM BIO-13.** 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.	Monitor implementation of this measure to minimize introduction of noxious weeds	X	—
Native and Invasive Species	**APM BIO-14.** Native seed mix will be used when restoring areas of grassland, oak woodland and wetland.	Review use of native seed mix	—	X
Special Status Plant Species	**APM BIO-15:** 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.	Ensure implementation to reduce impacts on oaks	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Construction Phase Biological Resources Impacts	**MM 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.	Review training materials, ensure all workers are trained [Also prior to construction]	X	X
Special Status Plants, Wetlands, and Vernal Pools	**MM 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: ■ Design project and construction activities to avoid impacts to wetlands and water features to the extent feasible. ■ 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. ■ 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. ■ 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:	Ensure implementation to minimize impacts on special status plants, vernal pools, and wetlands. Review compensatory mitigation if necessary. [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	– 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 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.			

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Nesting Birds	**MM 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.	Ensure implementation to protect northwestern pond turtles [Also prior to construction]	X	X
Wetlands	**MM 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	Ensure implementation of surveys and buffers to protect nesting birds [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	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.			
Special-status bats	**MM 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	Ensure implementation of surveys and buffers to protect roosting bats [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Sub-station	Fulton Line and Dis-tribution
	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 to 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: ■ 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. ■ 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. ■ 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.			

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Cultural Resources			
Construction Phase Cultural Resource Impacts	**APM CU-1.** Prior to the initiation of construction or ground-disturbing activities, PG&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.	Avoid unanticipated cultural resources, train project workers [Also prior to construction]	X	X
Construction Phase Cultural Resource Impacts	**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.	Construction personnel sign an environmental training attendance sheet. No damage to archaeological resources results from project construction.	X	X
Construction Phase Cultural Resource Impacts	**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.	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.[Also prior to construction]	X	X
Previously Identified Cultural Resources	**MM 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.	Flag and avoid known cultural resources [Also prior to construction]	X	X
Previously-Unidentified Archaeological Resources	**MM 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.	Any discovered paleontological resources are assessed and treated appropriately	X	X
	Hazards and Hazardous Materials			
Construction Phase Hazardous Material Impacts	**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.	Ensure control of project-related spills and provide spill response information to the regulatory agencies [Also during operations]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Construction Phase Hazardous Material Impacts	**APM HM-4.** If contaminated soils or groundwater due to VOCs, xylene, or other contaminates are encountered, appropriate abatement actions would be implemented in accordance with applicable regulatory requirements.	Prevent contamination of soil or groundwater. Review abatement actions	X	—
Construction Phase Hazardous Material Impacts	**MM 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.	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. [Also prior to construction]	X	X
	Hydrology and Water Quality			
Stormwater Pollution	**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: ■ silt fences or other sediment containment methods placed around and/or down slope of disturbed areas prior to construction; ■ protection of drain inlets from receiving polluted stormwater through the use of filters, such as fabrics, gravel bags, or straw wattles; ■ 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; ■ construction of a stabilized construction entrance/exit to prevent tracking onto roadway; ■ establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids. Use of oil pans under stationary vehicles is strongly recommended; and ■ no overnight parking of mobile equipment within 100 feet of wetlands, culverts, or creeks. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of wetlands, culverts, or creeks will be positioned over secondary containment.	Review and approve SWPPP and CSMP. Prevent pollution of stormwater related to the project. [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
Stormwater pollution	**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.	Weekly BMP inspection, and once-per-24-hours inspection during storm events. Regular maintenance and replacement. Complete required onsite inspection checklists. [Also during operations]	X	X
Stormwater pollution	**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.	Review SPCC plan and ensure implementation [Also prior to construction and during operations]	X	—
Construction phase water quality impacts	**APM WQ-7.** 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	X	X
Construction phase water quality impacts	**APM WQ-8.** 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	X	X
Water Quality	**MM 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.	Monitor dewatering to ensure appropriate implementation	X	X
	Land Use			
Construction Land Use Impacts	**MM LU-1. Provide advance notice of construction.** *Advance Notice.* Prior to construction, the Applicant shall give at least 10 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: ■ Describe where and when construction is planned; ■ 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.	Review and approve notification template prior to posting. Review reported complaints as necessary. [Also prior to construction]	X	X

Table 5B. Mitigation Monitoring Plan – During-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Noise			
Construction Phase Noise Impacts	**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.	Monitor construction to ensure time limits are maintained.	X	X
Construction Phase Noise Impacts	**APM NO-3.** Construction crews will limit unnecessary engine idling. (See Air Quality measures.)	Monitor to ensure idling is limited	X	X
Construction Phase Noise Impacts	**MM 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.	Ensure that routing effectively minimizes impacts to sensitive areas	X	X
	Traffic/Transportation			
Construction Traffic	**MM 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.	Ensure that lane closures and obstructions are appropriately implemented.	—	X
Construction Traffic	**MM 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.	Review notification of and coordination with emergency service providers [Also prior to construction]	—	X
Public Transportation	**MM 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.	Review SCTD consultation, SMART approval, and, if necessary, bus reroutes to ensure minimization of impacts [Also prior to construction]	X	X

Table 5C. Mitigation Monitoring Plan – Post-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Aesthetics			
Existing Visual Character	**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.	Review landscape plan and ensure establishment of vegetation screening [Also prior to and during construction]	X	—
	Air Quality			
Construction Phase Air Quality/ Greenhouse Gas	**APM AQ-12**. Comply with California Air Resources Board Early Action Measures as these policies become effective.	Monitor compliance with current and future CARB policies [Also during construction]	X	—
Operation and Maintenance Phase Air Quality/ Greenhouse Gas	**APM AQ-13**. Maintain substation breakers in accordance with PG&E's maintenance guidelines.	Ensure that operational emissions and greenhouse gas are minimized	X	—
Operation and Maintenance Phase Air Quality/ Greenhouse Gas	**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.	Ensure potential for SF_6 leaks is minimized according to a leak reduction standard that would be consistent with the CARB Climate Change Scoping Plan [Also during construction]	X	—
	Hazards and Hazardous Materials			
Construction Phase Hazardous Material Impacts	**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.	Ensure control of project-related spills and provide spill response information to the regulatory agencies [Also during construction]	X	—

Table 5C. Mitigation Monitoring Plan – Post-Construction Measures			1	2
Impact	**Applicant Proposed Measure (APM) or Mitigation Measure**	**Monitoring Requirement**	**Sub-station**	**Fulton Line and Dis-tribution**
	Hydrology and Water Quality			
Stormwater pollution	**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.	Weekly BMP inspection, and once-per-24-hours inspection during storm events. Regular maintenance and replacement. Complete required onsite inspection checklists. [Also during construction]	X	—
Stormwater pollution	**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.	Review SPCC plan and ensure implementation [Also prior to and during construction]	X	—

Attachment A. Detailed Project Description

The following information is taken from the Mitigated Negative Declaration (MND) for the Project, published in October 2013, and is included here for reference only. Figures cited in the text are found at the end of this attachment; the figures retain their original numbering from Chapters 4 and 5 of the MND.

1. Location

The proposed Windsor Substation will 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 north, Old Redwood Highway on the east, a school bus yard on the south, and the Northwestern Pacific Railroad (NWPRR) on the west.

Windsor Substation is within the Fulton-Fitch Mountain Distribution Planning Area (DPA), which serves northern Santa Rosa, Windsor, and the greater Larkfield-Wikiup area. The existing Fulton and Fitch Mountain Substations that serve this DPA are built out to maximum capacity.

2. Project Description

Pacific Gas & Electric Company's (PG&E's) Windsor Substation will provide a capacity increase of 89.1 megawatts (MWs) at ultimate build-out. The Windsor Substation site on Old Redwood Highway is six miles from the existing Fulton Substation and three miles from the existing Fitch Mountain Substation. The Windsor Substation will step-down power from 60 kV to 12 kV for local distribution. See Figure 4-1 for a Project Overview Map and Figure 4-2 for a Proposed Substation Site Aerial Map. (*Figures are found at the end of this Attachment A; figure numbering is that used in the MND.)*

In addition to constructing and operating the new substation, PG&E will improve its 12 kV distribution system in the project area. In the future, the substation will be upgraded to 115 kV from the initial 60 kV, and the step-down will be from 115 kV to 12kV.

As demand increases for electric power in the future, additional equipment will be installed at the substation and conductors will be installed in the conduits constructed as part of the project. The substation will be designed and built to accommodate the future equipment; therefore, limited construction will 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 will be required to establish the future 115 kV circuit. At the time of the transmission line upgrade, the Windsor Substation 60 kV transformer will be replaced with a 115 kV transformer. PG&E anticipates a new transformer bank will be installed every five to 10 years after the installation of the preceding bank. New distribution circuits will be installed after each new bank is installed and will occur over several years. The locations of the proposed substation and distribution line upgrades are shown in Figure 4-3.

The Windsor Substation will be located on a 4.11-acre 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 will be approximately 2.6 acres. The north, east, and west sides of the substation will be bordered by 10-foot tall prefabricated perimeter walls. The south side will be enclosed by a chain-linked fence. During construction, the entire 4.11-acre site will be used for parking and for lay down and staging of construction materials and equipment during construction; no additional lay down areas will be required outside of the property.

The project will include work outside of the substation footprint:

- Access to the substation property will be from Old Redwood Highway and Herb Road (public section). Pole replacement and line work will occur along Old Redwood Highway, Starr Road, 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 will be replaced with a new tubular-steel pole (TSP).
- Underground distribution lines will connect the substation to existing and future infrastructure.
- Approximately 1.5 miles of the existing Fulton No. 1 60 kV Power Line will be rebuilt. This will require replacing 39 wooden poles (with 38 wood poles and 1 steel pole) and installation of 2 new wood riser poles.
- Approximately 1.8 miles of existing distribution line with 12 kV double-circuit conductor along Old Redwood Highway will be reconductored. This will 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 are approximate because final engineering is not yet complete. Slight changes may be necessary based on final engineering requirements, but any changes will comply with applicable regulations, applicant proposed measures, and mitigation measures.

The replacement TSP will be used to loop[1] 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 will be built between the TSP and the new substation.

Offsite, distribution line undergrounding, pole placement and replacement, and reconductoring will 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 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 will be required over the railroad to install the loop linking the existing 60 kV line and the substation.

2.1 Setting and Surrounding Land Uses

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

[1] 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.

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.

2.2 Project Components

2.2.1 Windsor Substation

The Windsor Substation will 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 will cover approximately 2.6 acres. Site access will 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 will 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 will 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 will be the two 42-feet-tall dead-end structures supporting the looped lines. One switchgear enclosure will be 75 feet long, 18 feet wide, and 12 feet high, and two other switchgear enclosures will be each 28 feet long, 18 feet wide, and 12 feet high. The switchgear enclosures will house sensitive recording and communication equipment that requires weather protection. They also will 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 will be covered in steel sheeting with sloped roofs. All structures and equipment in the substation will be a non-reflective gray color.

Each transformer will contain up to 5,000 gallons of mineral oil, which will be circulated to cool the transformers. The mineral oil will not contain polychlorinated biphenyls (PCBs). A spill prevention control and countermeasure (SPCC) basin will be installed to contain the mineral oil in the event of a release from any one transformer. The SPCC basin will be designed to contain 110 percent of the transformer's coolant (mineral oil) volume. The initial transformer will contain 5,000 gallons of coolant; therefore, the

basins will 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 SPPC basins will be enlarged to accommodate the larger volume.

2.2.2 Site Access

During construction, access to the substation site and the power and distribution lines will 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 will 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.

2.2.3 Perimeter and Landscaping

The substation will have an earth-tone decorative wall and new landscaping on three sides. This 10-foot-tall prefabricated concrete wall will 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 will be enclosed by a chain-linked fence for security. Double swing entry and exit gates on the east side of the substation will 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.

2.2.4 Lighting

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

2.2.5 Drainage

Substation site grading during construction will alter existing onsite drainage patterns so that runoff from the proposed substation pad will 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 will 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 will be used for oil capture and storm water management, the SPCC plan prepared in conjunction with detailed site planning will 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 will be used to remove the oil for offsite disposal at a permitted facility. This collection and retention system will 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 will only be made when no oil or sediment will 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 will 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 will incorporate SPCC Plan design requirements.

2.2.6 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, will be replaced with a new 75-foot–tall TSP. The pole will support a short power line looped to the substation's 42-foot-tall dead-end structures. This pole location will 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).

2.2.7 Distribution Lines

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

Circuit 1 will 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 will be 458 feet long. Circuit 3 will be 538 feet long; it will run in a conduit parallel to Circuit 1, but will 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, will continue south mounted (underbuilt) on the Fulton No. 1 60 kV Power Line poles and will 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 will be rebuilt on taller wooden poles. This rebuild will require 39 new poles (38 wood replacement poles and 1 steel replacement pole) and 2 new risers.

Circuit 2 will 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 will be reconductored along Old Redwood Highway.[2] As part of the reconductoring, 44 existing wood poles will be replaced with new taller wood poles and 3 new riser poles will be installed along Old Redwood Highway. Circuit 2 will be undergrounded along Old Redwood Highway where there is existing undergrounding (320 feet at Rio

[2] 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.

Ruso, 270 feet at Dawn Way, and 480 feet at Godfrey Drive). Circuit 2 will ultimately tie into the existing main feeder line at Windsor River Road.

Initially, the nine future circuits will be stubbed and capped. 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 will prevent future disruption of landscaping at the substation property. Four conduits for future circuits will parallel Circuit 1 and 3, heading west out of the substation (one empty conduit will be within the same trench as 1 and 3 and three empty conduits will be in a separate trench, offset approximately 6 feet). At the Fulton No. 1 60 kV Power Line they will be stubbed and capped within PG&E's existing easement. The other five future circuit conduits will 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 will 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 will likely be installed underground alongside existing overhead lines.

Table 4-1. Distribution Circuits from Proposed Substation

	Approximate Lengths and Locations of Circuit Installation (feet)		
Circuit	**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
Total for Initial Circuits	**4,186**	**22,650**	**26,836**
Future:[1] 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)
Total for Future Circuits	**4,700**	**None**	**4,700**
Total for Initial and Future Circuits	**8,886**	**22,650**	**31,536**

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

2.2.8 Right-of-Way Acquisition

Prior to construction PG&E will have purchased the proposed substation site and acquired 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 will take place in the street and public utility easement. PG&E will obtain ministerial encroachment permits to conduct work in public rights-of-way in accordance with the Town of Windsor requirements.

2.3 Substation Construction

2.3.1 Construction

During construction, PG&E will 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 will be provided by an existing adjacent distribution line on Old Redwood Highway. A temporary overhead construction service tap and meter set will be installed just inside the substation property.

Site preparation will 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) will 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 will likely need to be removed during construction. Approximately 1,300 cubic yards of soil and aggregate will 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 will be excavated and reused on-site, and 300 cubic yards will be imported. As part of site preparation, approximately 1,420 cubic yards of material will 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 will begin after site grading is complete. Up to 250 cubic yards of excess soil will 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 will 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

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
Total Current			**2,868**	**288**
Future Installation	425		425	43
Total Current + Future			**3,293**	**331**

Source: PG&E 2010-2012.

Construction of the subsurface ground grid will 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 will be installed, and aggregate will be placed throughout the remainder of the enclosed site. With the site secured, excavation for subsurface footings for all the aboveground structures will begin. Reinforced concrete footings and slabs will 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, will be installed.

Structures will 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 will be fabricated from low profile tubular steel components. Structures within the substation will be grounded to the station-grounding grid. Equipment will be bolted or welded securely to slabs and footings to exceed Uniform Building Code seismic requirements. Additional equipment that will 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 will 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 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 will drink bottled water.

2.3.2 Cleanup

PG&E will ensure that the substation site is kept clean during the construction period. Trash will be picked up daily and either removed from the work site or properly contained. All disturbed areas and temporary work locations will 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)
Access Road and Substation					
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

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 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
Transmission Line Substation Interconnection					
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
TSP Replacement and Installation					
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
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
Distribution Line Installation (Overhead)					
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

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)
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
Distribution Line Installation (Underground)					
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.

2.3.3 Construction Workforce and Schedule

PG&E has targeted construction to begin in July 1016 to meet an in-service date of February 2018. The size and composition of the workforce will vary, depending on the phase of construction. Substation work (civil construction) will occur over eighteen months. During substation grading, a maximum workforce of approximately 15 workers will be needed over a three to four week period. The security wall and fencing, buswork structure, new TSP, and substation foundation work will require approximately eight workers. Installation of the switchgear enclosure and overhead work will also require approximately eight workers. As phases of the work are completed, the workforce at the substation site will gradually decline. A small workforce will remain at the substation site to complete required project cleanup and landscaping.

Distribution line work will require approximately 16 workers and will take nine months (beginning April 2017). Construction crews will work during weekday daylight hours unless otherwise required for project safety or to take advantage of necessary line clearances. The tasks will be conducted in stages, so personnel and equipment will not be working on all tasks simultaneously at a given location.

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

2.4 Power Line Interconnection Construction

The construction for the power line interconnection work will 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.

2.4.1 Pole Installation and Replacement

The existing wooden pole on the Fulton No. 1 60 kV power line that will 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 will be made of weathered steel tapering upward from a ground-level diameter of approximately 30 inches. A concrete foundation for the TSP will have a diameter of approximately 5.5 feet. The TSP will reach a height of 75 feet; two cross arms will extend 4-feet laterally on each side of the pole.

To erect the pole, a semi-truck and trailer will deliver the TSP to the pole site in sections. A crane will offload TSP sections in preparation for assembly. An area approximately 50 feet square will be required temporarily for the installation of the TSP. This will require a brief temporary lane closure on Old Redwood Highway that will 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” will 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 will be offset 10 feet east and west of the pole and the 12 kV distribution circuits will be transferred to the two shoo-fly poles. If necessary, a brace support will 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 will excavate the TSP’s foundation. The rig will 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 will be tested and disposed of in accordance with applicable regulations or reused. The completed hole will be temporarily covered until installation of the new foundation. A reinforcing bar cage will be lowered into the hole and foundation bolts will be attached to the cage. Wood forms will then be constructed around the foundation and concrete poured into these forms. Excavating the foundation hole and pouring the concrete will require approximately three days. Once the concrete has cured, the bottom section of the TSP will be delivered to the site and lowered onto the foundation by a crane. The remaining sections will be installed later as described below.

The existing wood pole and, later, the temporary shoo-fly poles will be loosened for removal by a hydraulic jack mounted on a line truck. Once these wooden poles have been removed, the resulting holes will be backfilled with the soil from the TSP foundation auguring. Some unused soil will be used to backfill around the concrete foundation of the TSP and will be feathered around the new pole site. Wooden poles and any sawdust will 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 will be scheduled. At that time, a crane or bucket truck will lift the existing 60 kV transmission conductors from their current position and shift them out of the way. A second crane will lower the remaining sections of the new TSP into place. Line crews will 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.

2.4.2 Stringing 60 kV Conductor

Stringing the conductor looping between the Fulton No. 1 60 kV power line and the substation will 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," will be pulled from structure to structure by ground equipment. The conductor will 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 will be adjusted to a pre-calculated level. Finally, the conductor will be clamped to the end of each insulator, and the sheaves will be removed. Vibration dampers and other accessories will complete the installation.

2.5 Reconductoring of Distribution Line and Power Line Underbuild

Distribution of the increased capacity provided by the new substation will 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.

2.5.1 Pole Replacement

Proposed reconductoring and rebuilding of power lines for the proposed project will 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 will be approximately 20 feet higher, or about 65 feet tall. The new wood poles will employ an avian-safe design to protect raptors and other birds from electrocution.

Pole replacement will 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 will be installed within three to six feet of the existing pole they are replacing. Wood poles will be delivered to each pole site on a line truck with trailer. The line truck will auger a hole to the appropriate depth. The replacement wood pole will 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 will be covered with plastic tarps and will be used for filling holes, feathered around the pole base, or will be removed.

Whenever possible, work will take place within previously disturbed areas around the base of the existing poles. At most pole locations, crews will 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 will be detached from the existing poles and attached to the replacement poles.

Bucket trucks will be used to remove cross arms and wires from poles. A boom mounted on the line truck will 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 will be removed and disposed of properly.

2.5.2 Reconductoring

During reconductoring of overhead distribution lines, the existing conductor will be replaced with heavier-duty 1,100 thousand circular mil (kcmil) [3] all-aluminum conductor, increasing the capacity of the line. Approximately nine pull and tension locations along public streets will be required for the project. These pull and tension sites will be located around dead end or angle poles and will require an area of approximately 400 to 500 square feet (40 to 50 feet long by 10 feet wide) for operations. Insulators will be installed or replaced as part of the reconductoring work.

The exact locations of pull and tension sites will 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 will 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 will 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 will 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 will be attached to a puller-truck cable. The new conductor will 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 will be detached from the rollers and clipped into the end of each insulator. At maximum sag, the conductor will be 25 feet or more above ground level. The rollers will be removed and vibration dampers and other accessories will be installed. A line truck will take the old conductor from the site to the PG&E construction storage yard located at 101 Airport Boulevard in Santa Rosa.

2.5.3 Underground Installation

Underground installation of distribution lines will 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 will need to be removed (see Table 4-2). For underground segments, the 12 kV underground distribution line will be installed pursuant to PG&E's established franchise agreements with the Town of Windsor. Underground installation will include installing three 1,100 kcmil all-aluminum conductor cables in a single conduit. Each conductor will be approximately two inches in diameter and will fit in a 6-inch diameter conduit.

PG&E will coordinate with the Town of Windsor regarding construction techniques; however, PG&E anticipates that it will 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 will be completed using open trenching. Jack-and-bore techniques will be employed for crossing under the NWPRR tracks. Three underground segments that will extend south on Old Redwood Highway at Rio Ruso Drive, Dawn Way, and Godfrey Drive will be installed using horizontal directional drilling. Underground vaults, approximately 4.5 feet long by 8.5 feet wide by 6 feet deep, will 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 reconductored along Old Redwood Highway from Joe

[3] 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.

Redota Road to Windsor River Road will 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 will 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 will 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 will restore all paved surfaces, and restore landscaping or vegetation, as necessary and in compliance with the road encroachment permit.

To ensure no contamination will occur to nearby storm drains and water sources, PG&E construction crews will implement best management practices (BMPs) outlined in PG&E's *Water Quality Construction Best Management Practices Manual*, a copy of which will 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 will obtain a Town of Windsor road encroachment permit and comply with its conditions and requirements. Where used, trenches will measure approximately 48 to 56 inches deep and 18 to 24 inches wide. A backhoe will be used to dig the trenches; trenching in paved locations will require first saw-cutting and/or breaking the pavement. Cable conduit will be installed in the open trench using reinforcement bar, ground wire, and concrete conduit encasement. To complete the work, thermal select or controlled backfill will be added and compacted in the trench. A road base backfill or slurry concrete cap will then be installed. Soils excavated during trenching will 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 will be disposed of in accordance with all federal, state, and local regulations.

Approximately 19 vaults will be installed at various locations along the open trenches. Vaults will be approximately 4.5 feet long by 8.5 feet wide by 6 feet deep and will require excavation of approximately 10.6 cubic yards of soil each. Excavation and disposal of soils from vaults will be conducted as addressed above for trenching. Comcast® will require installation of additional underground vaults along the trenches to access its collocated cable television line, which will 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 will 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 will be determined by PG&E engineering design and a Town of Windsor encroachment permit, and/or consultation with SMART, as appropriate. Boring will 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 will not require shoring. After shoring, bore equipment will be installed in the bore pit. Steel casing will be welded in sections and jacked into the bore. Finally, assembled conduits will be pulled through the steel casing.

Approximately 200 cubic yards of material will be excavated to create the pits. Approximately 20 truck trips will be needed to haul soils removed from the pits. The soil will 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 will 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 will 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, will 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 will 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) will first be created. Relief holes (approximately 4 feet long by 2 feet wide) will be added at approximately 100 foot intervals, determined by local ground conditions. Concurrently with boring, sections of steel casings will be welded together. Assembled PVC conduit bundles will then be pulled through these casings. Casings with conduit bundles will be pulled completely through the finished bore hole. Shoring will not be required in the entry and exit pits.

Exact locations for entry and exit pits have 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 will be immediately halted. The HDD contractor will be responsible for minimizing the potential for frac-outs by maintaining the drilling fluid pressure at a reasonable level. A PG&E inspector with the authority to shut down HDD operations at any time will 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 will 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 will be disposed of at a landfill in accordance with all federal, state, and local regulations.

During construction, PG&E will implement the best management practices outlined in the *PG&E Horizontal Directional Drilling Manual.* A copy of this manual will 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, 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, 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, 18 to 24 inches wide	60	Circuit 3
Trench #2 (east from the substation crossing Old Redwood Highway)	620	48 to 56 inches deep, 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, 12 inches wide	32	Circuit 1
Bore #2 (Rio Drive)	320	Minimum 24 inches deep, 12 inches wide	30	Circuit 2
Bore #3 (Dawn Way)	270	Minimum 24 inches deep, 12 inches wide	25	Circuit 2
Bore #4 (Godfrey Street)	480	Minimum 24 inches deep, 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, 12 inches wide	139	Circuit 2, 8-12

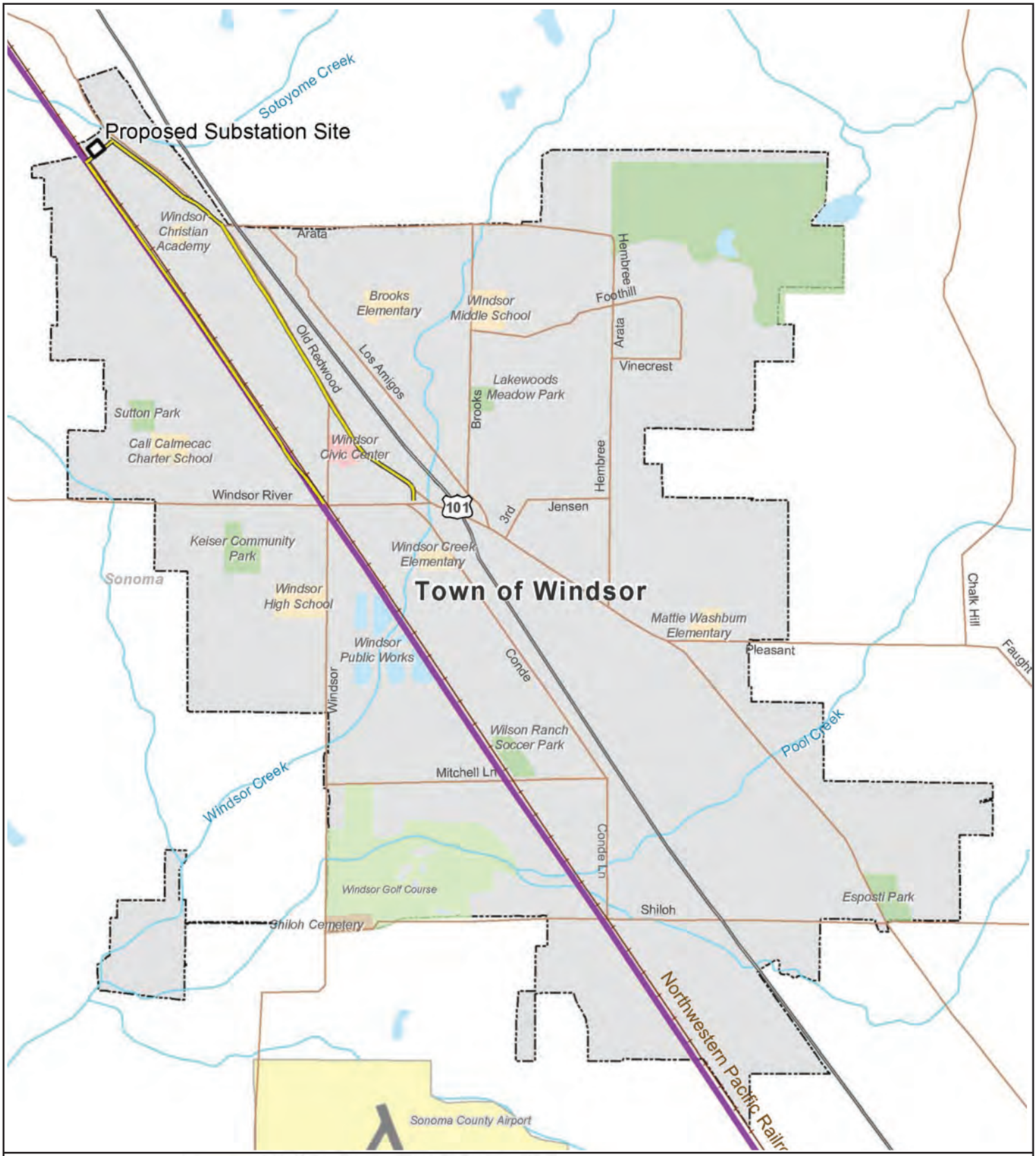
Source: PG&E 2010, 2011, 2012
* The above cubic yard quantities are estimates based upon currently-available information and include a fluff factor of 25% applied to the in-situ quantities.

2.6 Operations and Maintenance

2.6.1 Substation Operations, Maintenance, and Inspection

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

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



Source: PG&E, 2012.

Aspen Environmental Group

Figure 4-1

Project Overview Map

Source: PG&E, 2012.

Aspen Environmental Group

Proposed 115 kV Loop (Initially 60 kV Loop)
Site 8
Fulton No. 1 60 kV

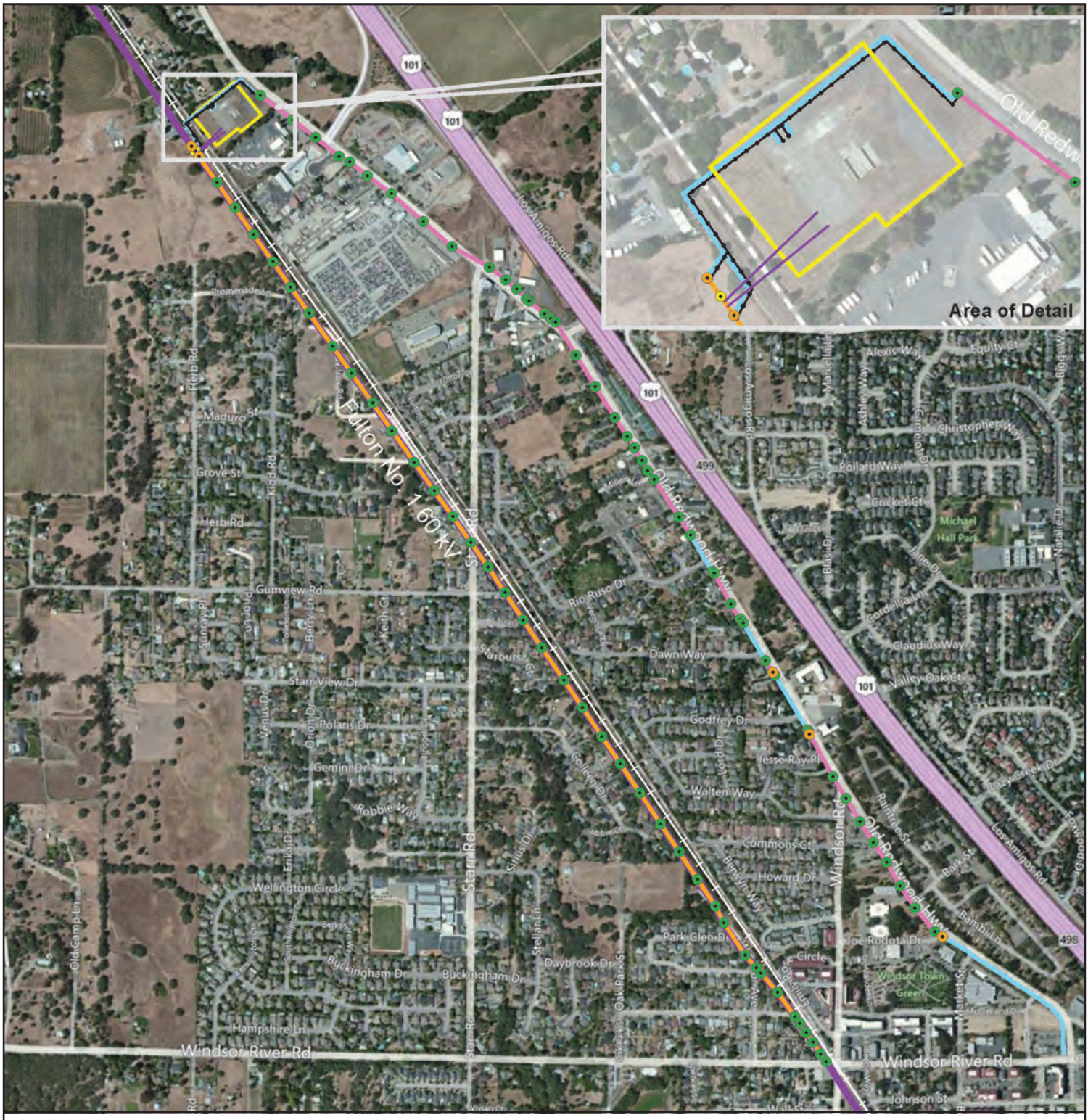
N

0 95 190 380 ft

photo: April 2009

Figure 4-2

Windsor Substation Site - Aerial Map



N

0 250 500 1,000 ft

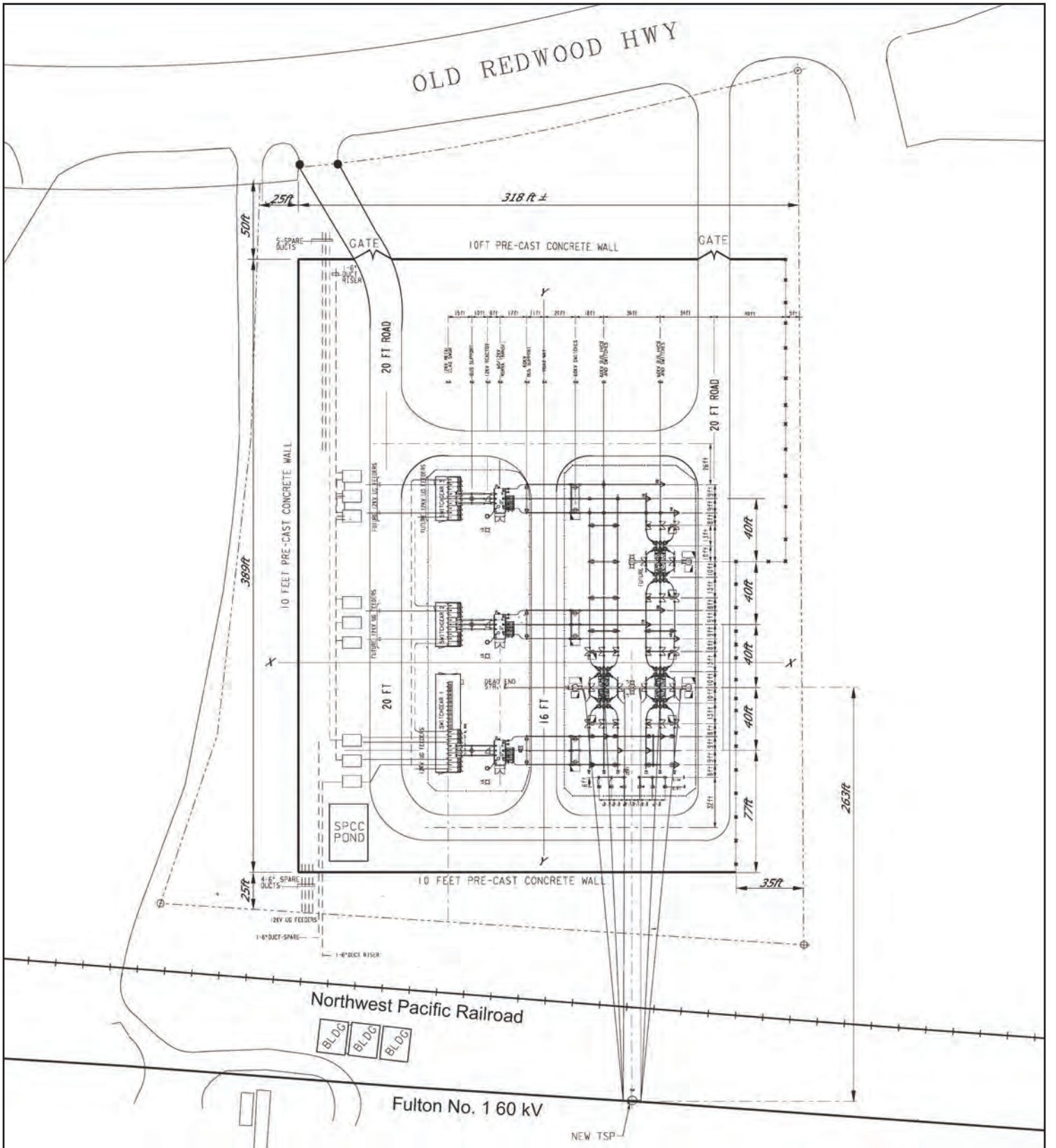
Source: PG&E, 2012.

Aspen Environmental Group

- 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



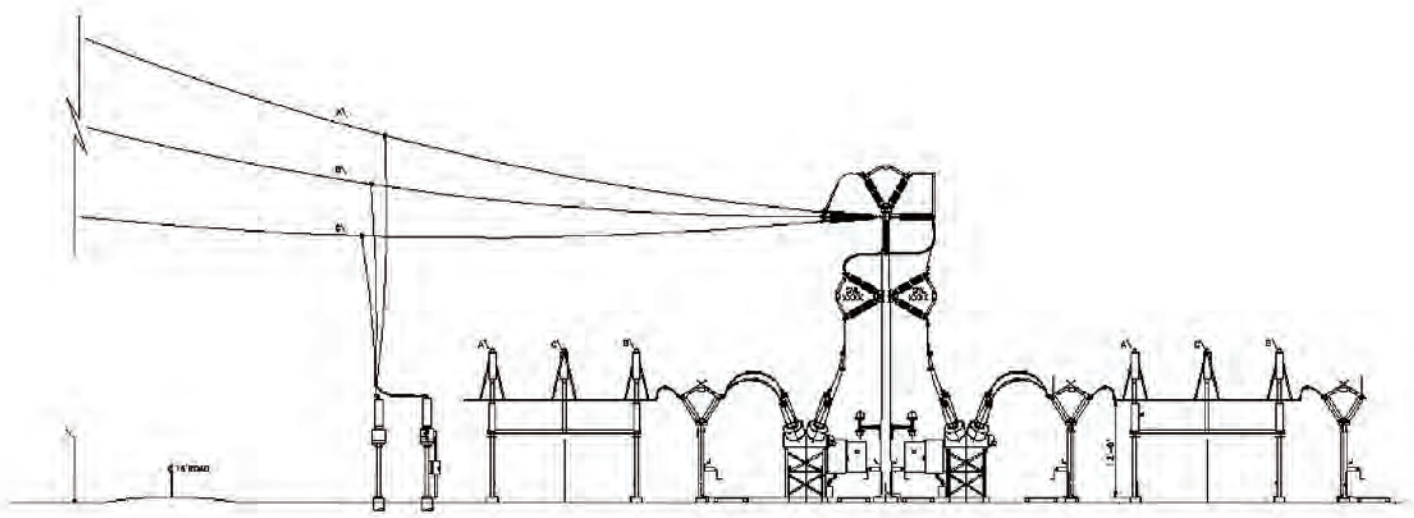
Source: PG&E, 2013

Aspen Environmental Group

N

Figure 4-4

Typical Three Bank Substation

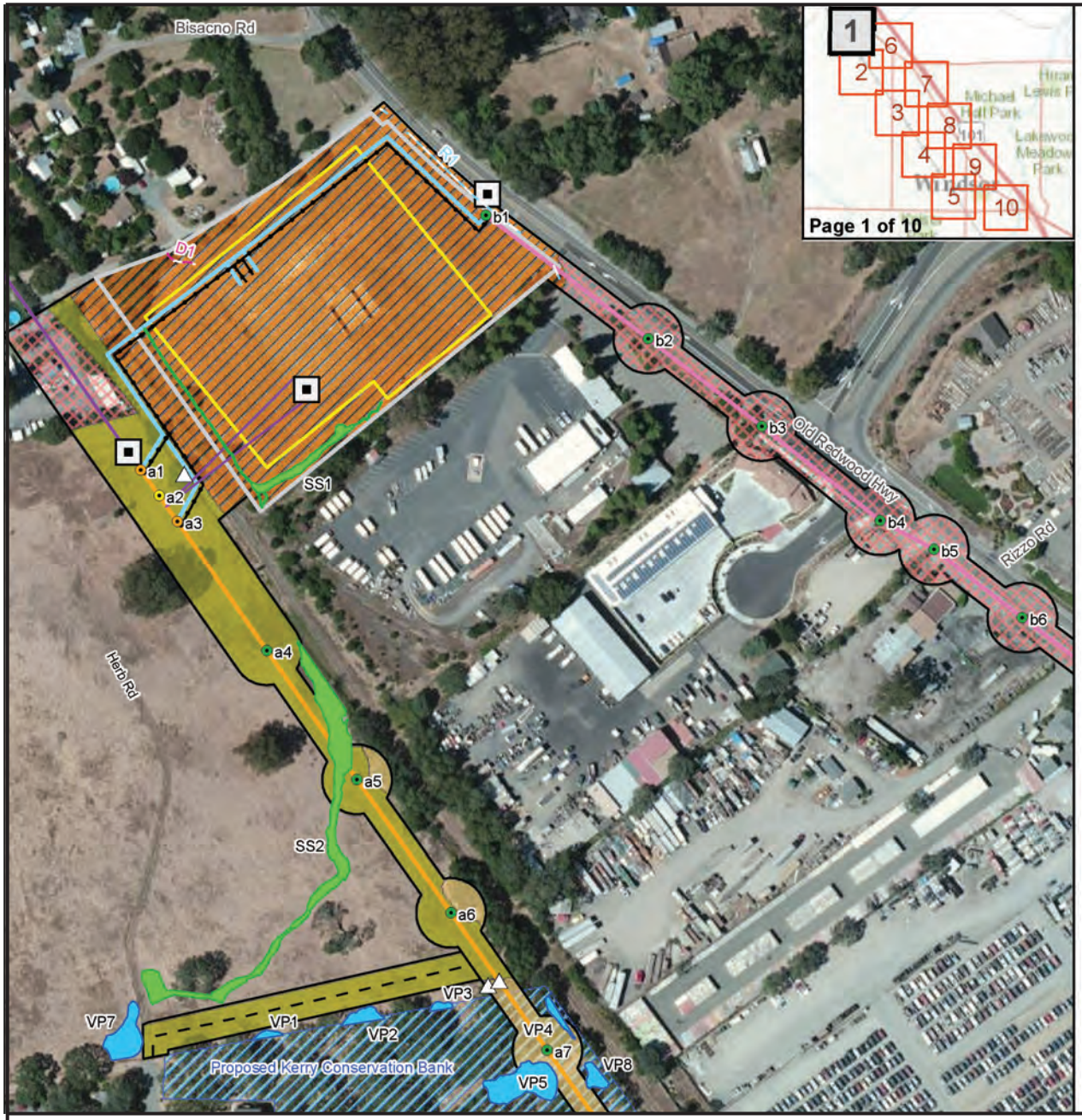


Source: PG&E, 2010.

Aspen Environmental Group

Figure 4-5

Typical Three Bank Substation Profile



- 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

Aspen Environmental Group

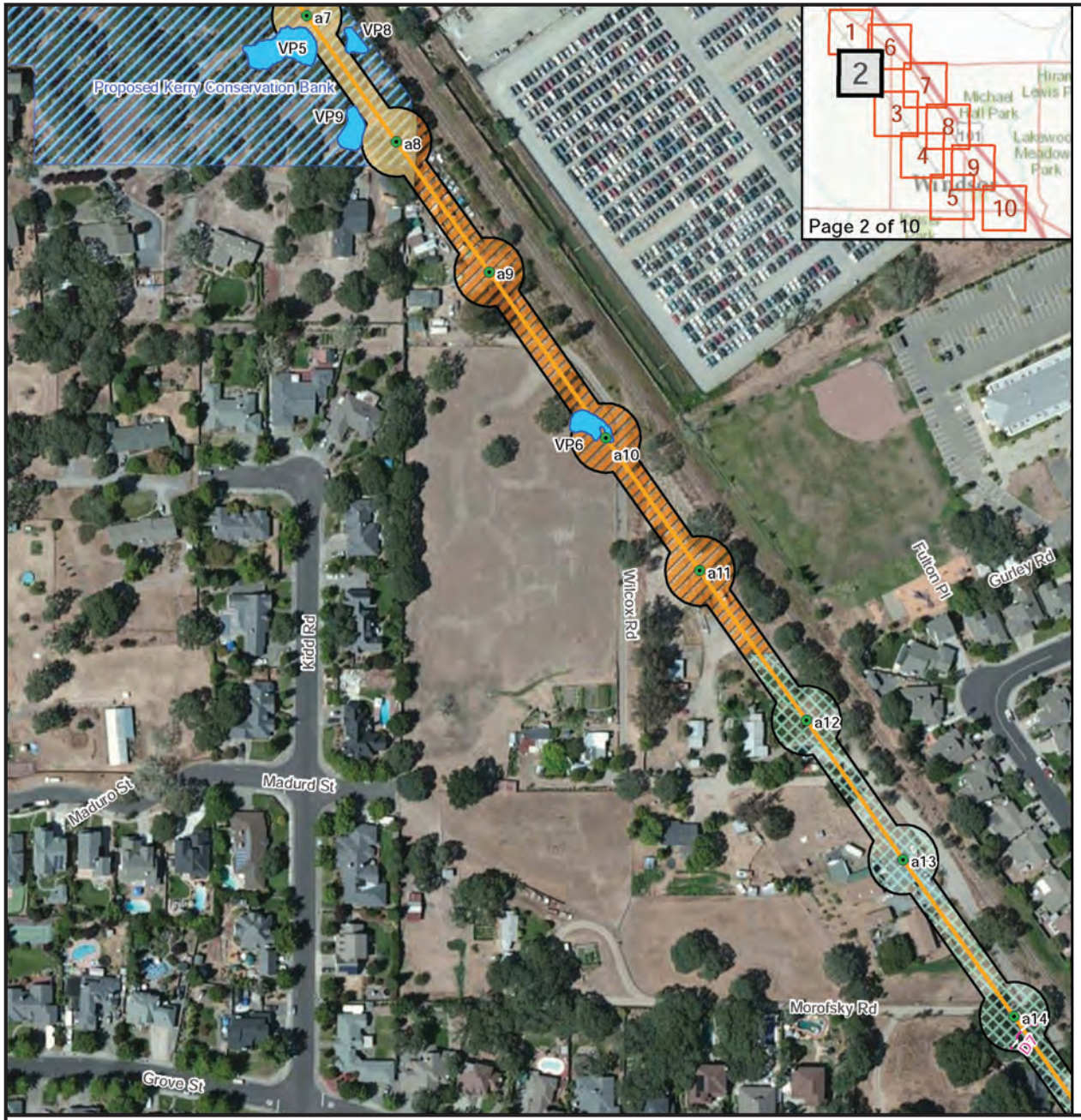
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 1



- 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

Aspen Environmental Group

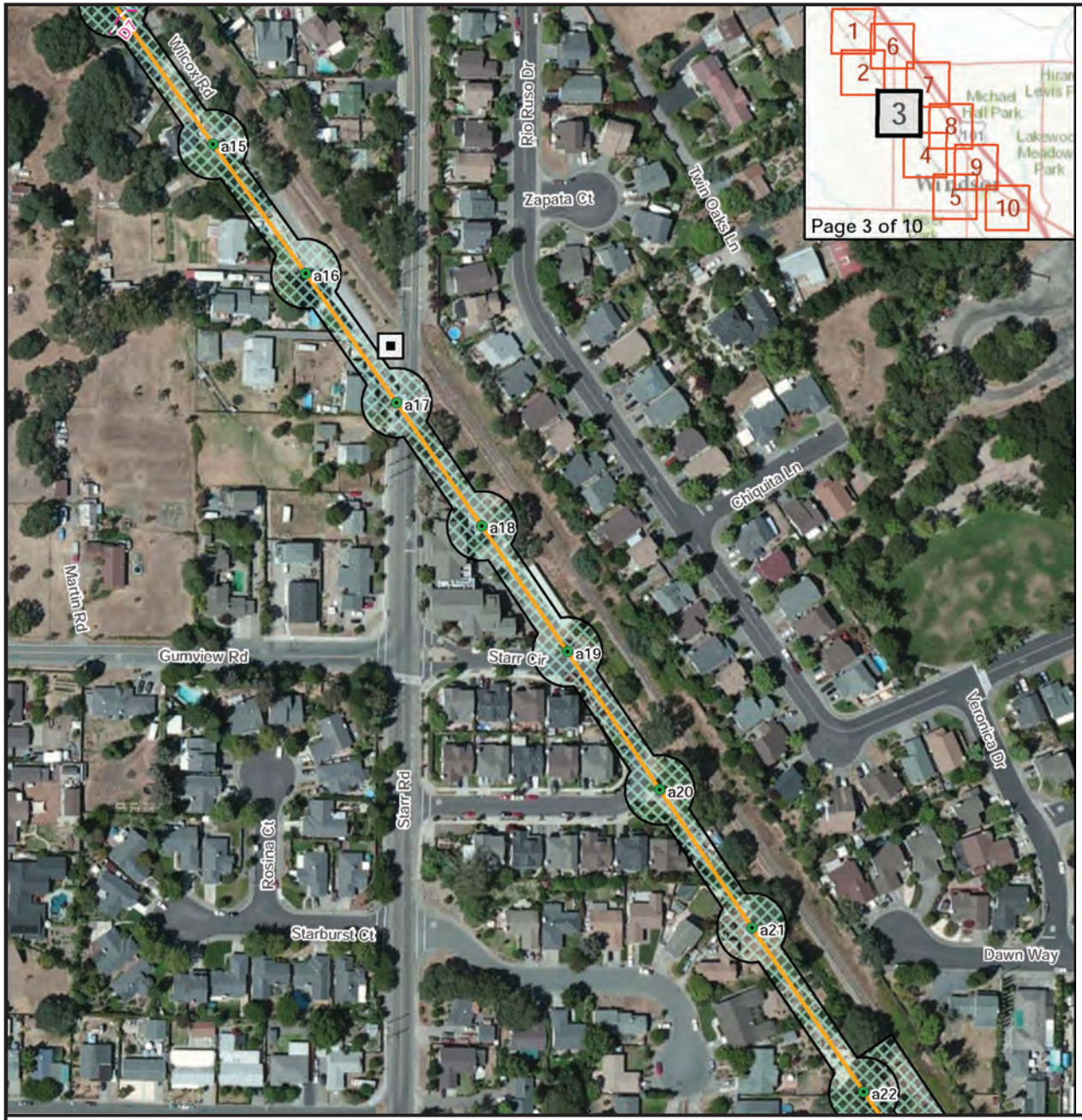
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 2



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

Aspen Environmental Group

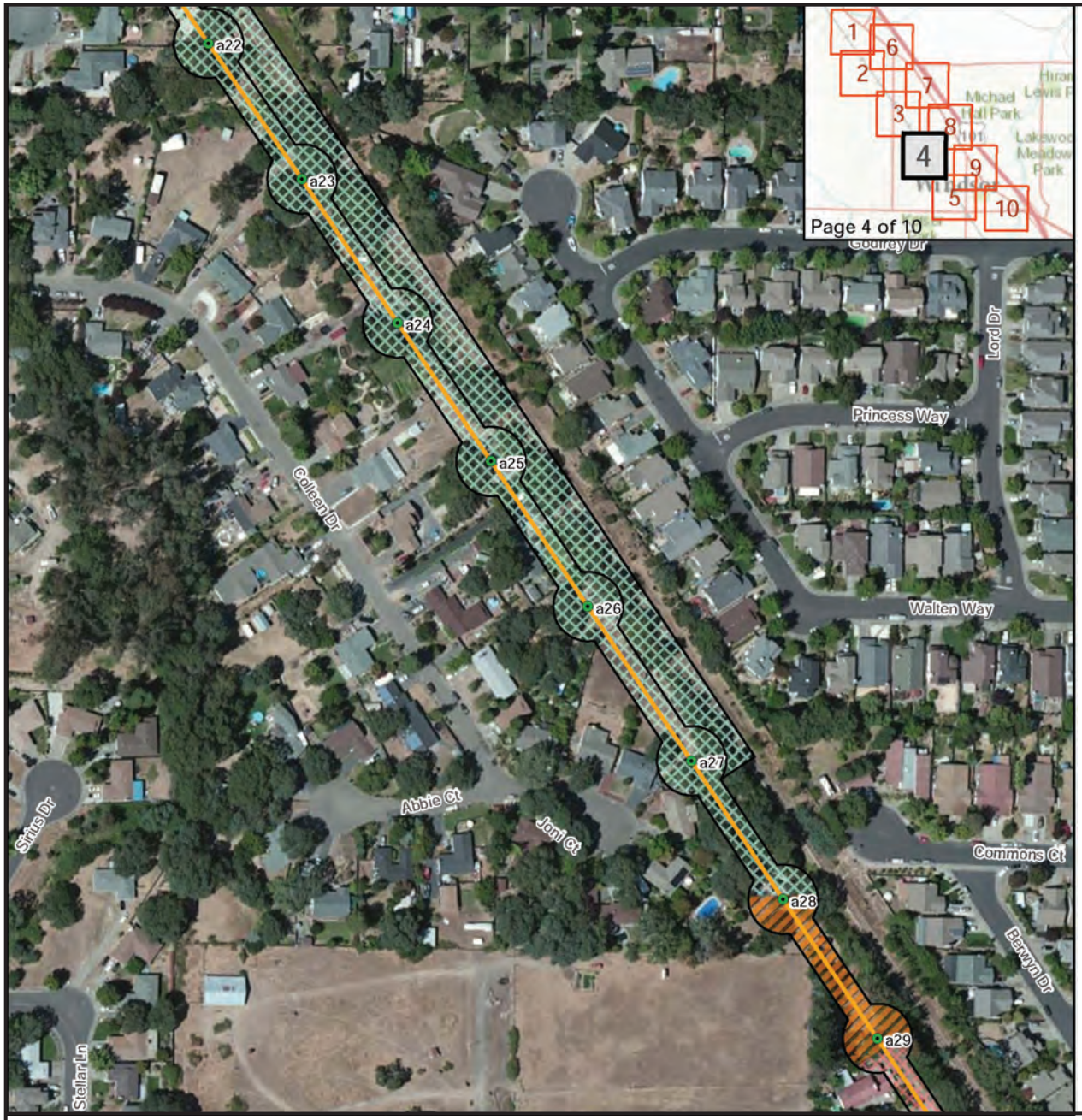
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

**Windsor Substation Project
Biological Resources Mapset
Map 3**



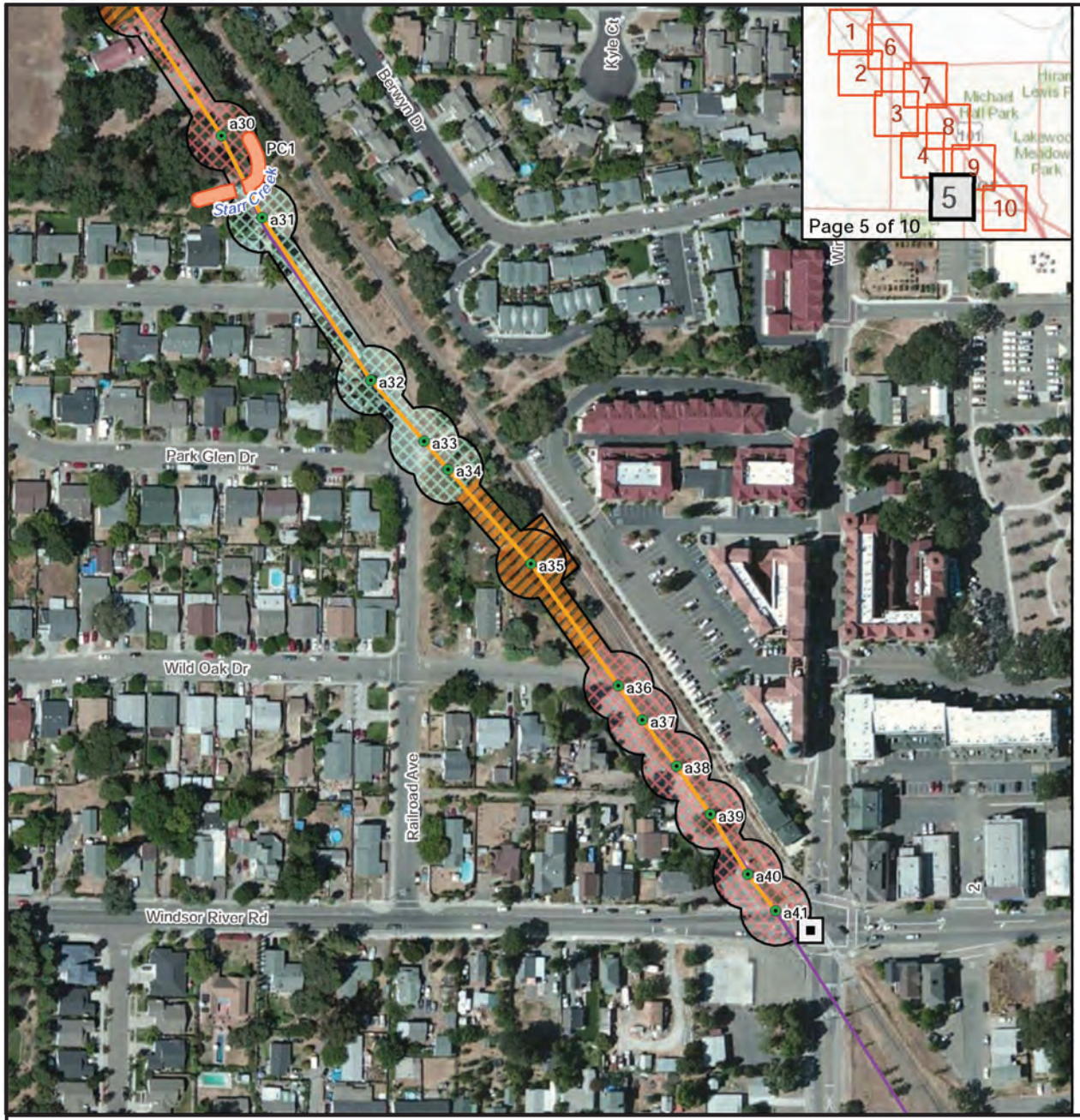
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 4



- 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

Aspen Environmental Group

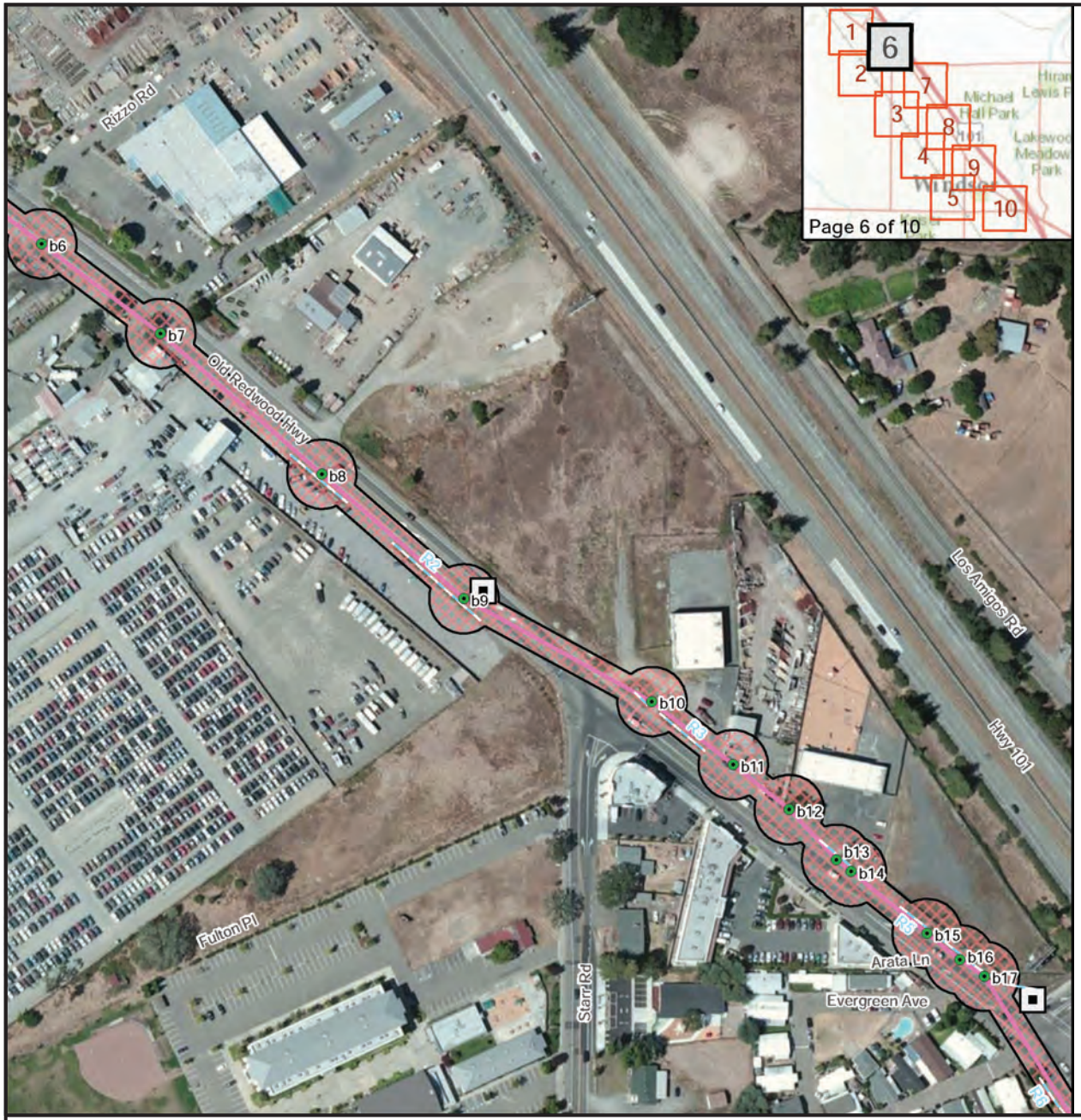
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 5



- 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

Aspen Environmental Group

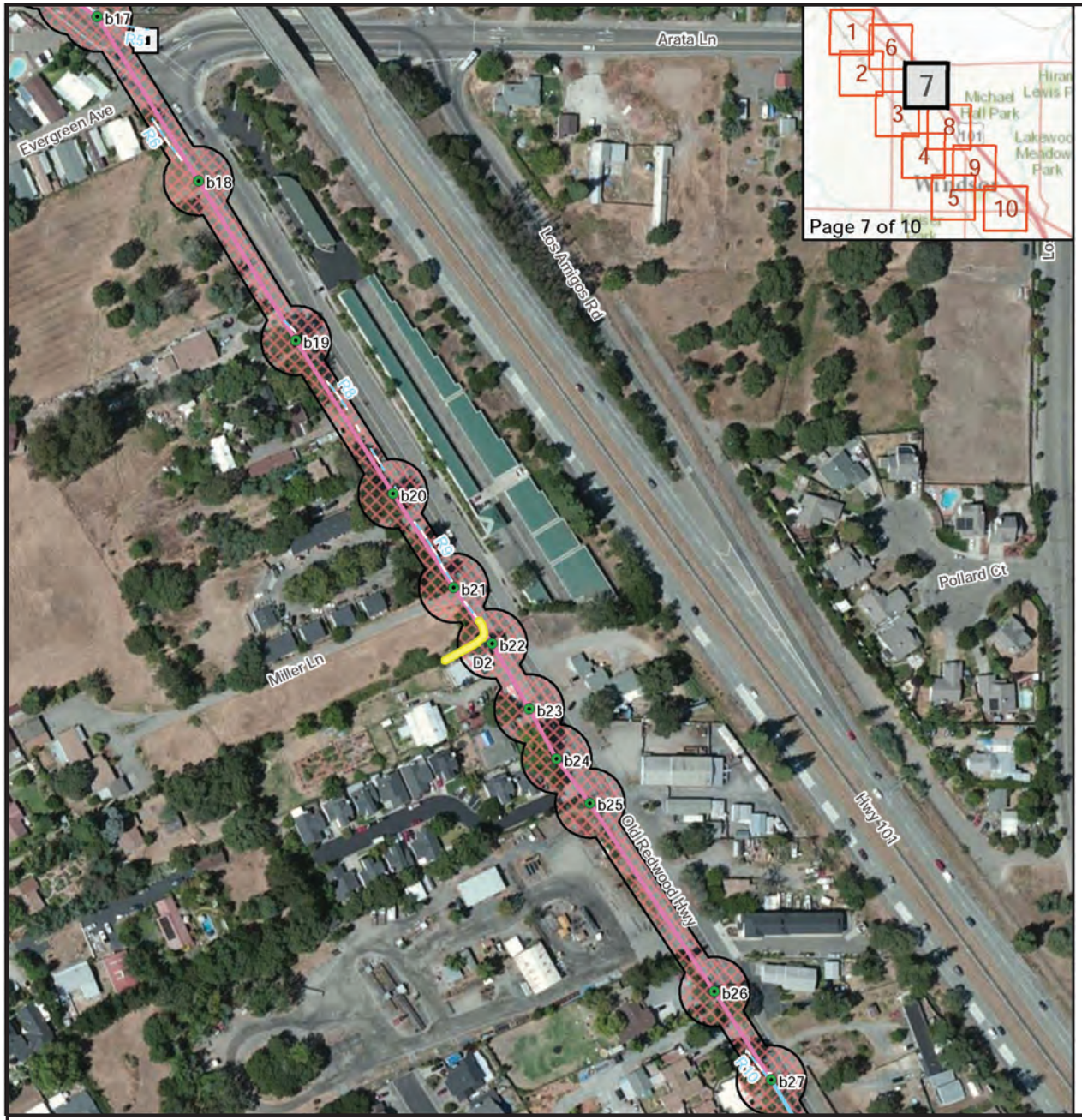
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 6



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- Temporary Access Road

Wetland and Water Features

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- Drainage Ditch
- Perennial Creek
- Seasonal Swale
- Vernal Pool
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- Drainage Swale

Habitat

- Annual Grassland
- Oak Woodland
- Ruderal/Disturbed
- Ruderal/Disturbed/Developed/Landscaped
- Developed/Landscaped

Aspen Environmental Group

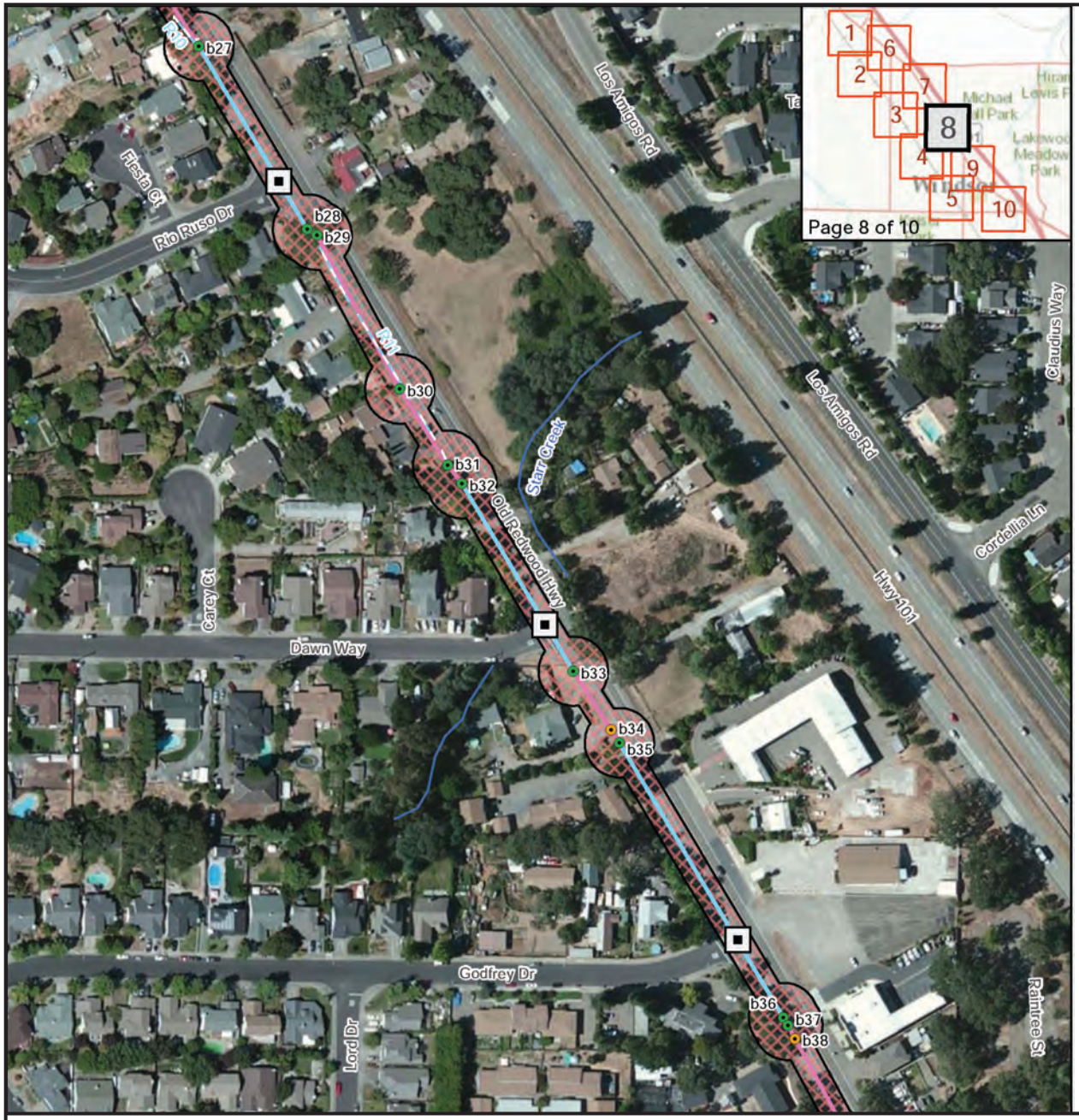
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 7



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- Temporary Access Road

Wetland and Water Features

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- Drainage Ditch
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Habitat

- Annual Grassland
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- Ruderal/Disturbed
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- Developed/Landscaped

Aspen Environmental Group

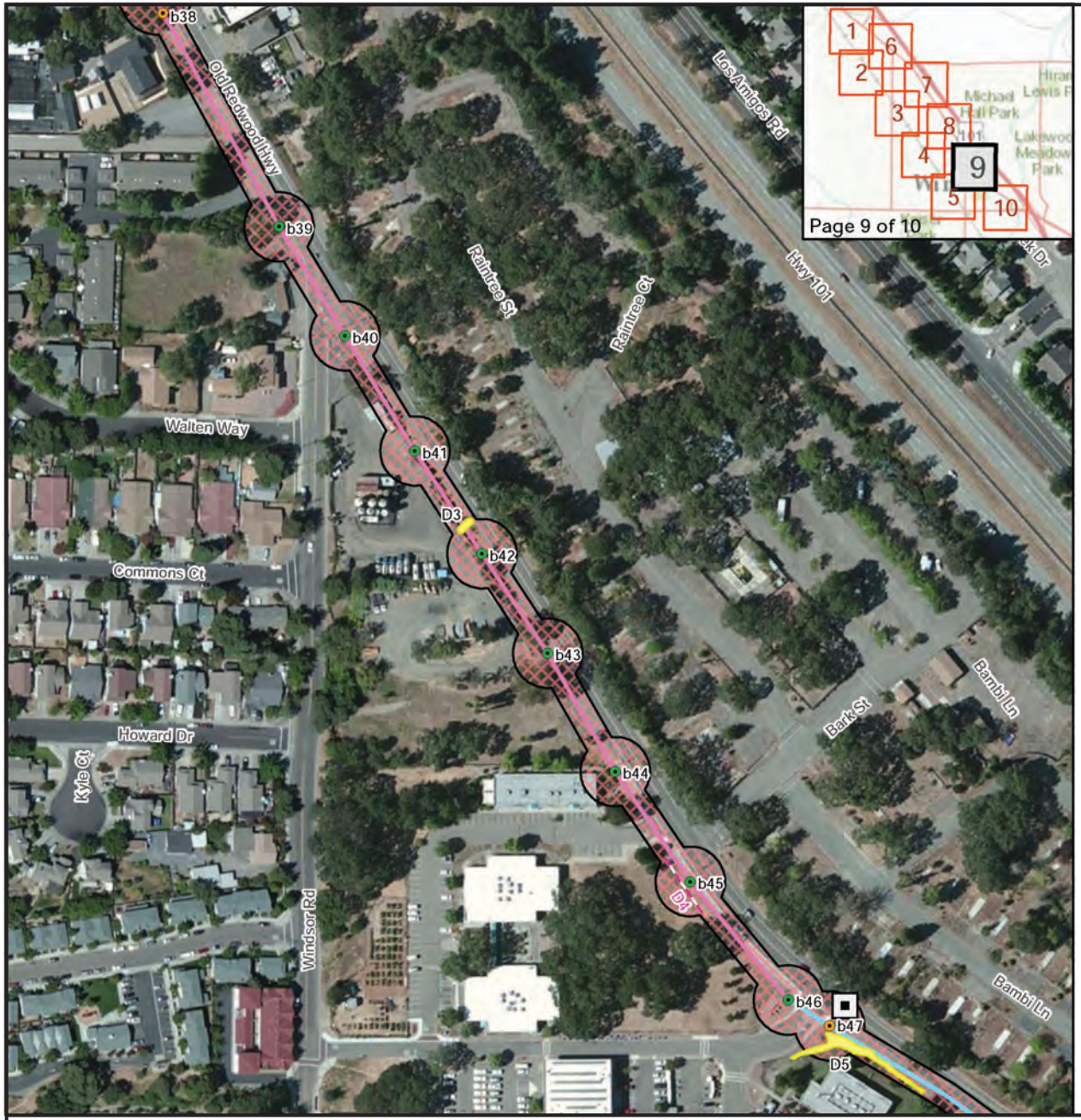
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 8



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- Temporary Access Road

Wetland and Water Features

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Habitat

- Annual Grassland
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Aspen Environmental Group

Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 9

- Wood-to-Wood Pole Replacement
- Wood-to-Steel Pole Replacement
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Aspen Environmental Group

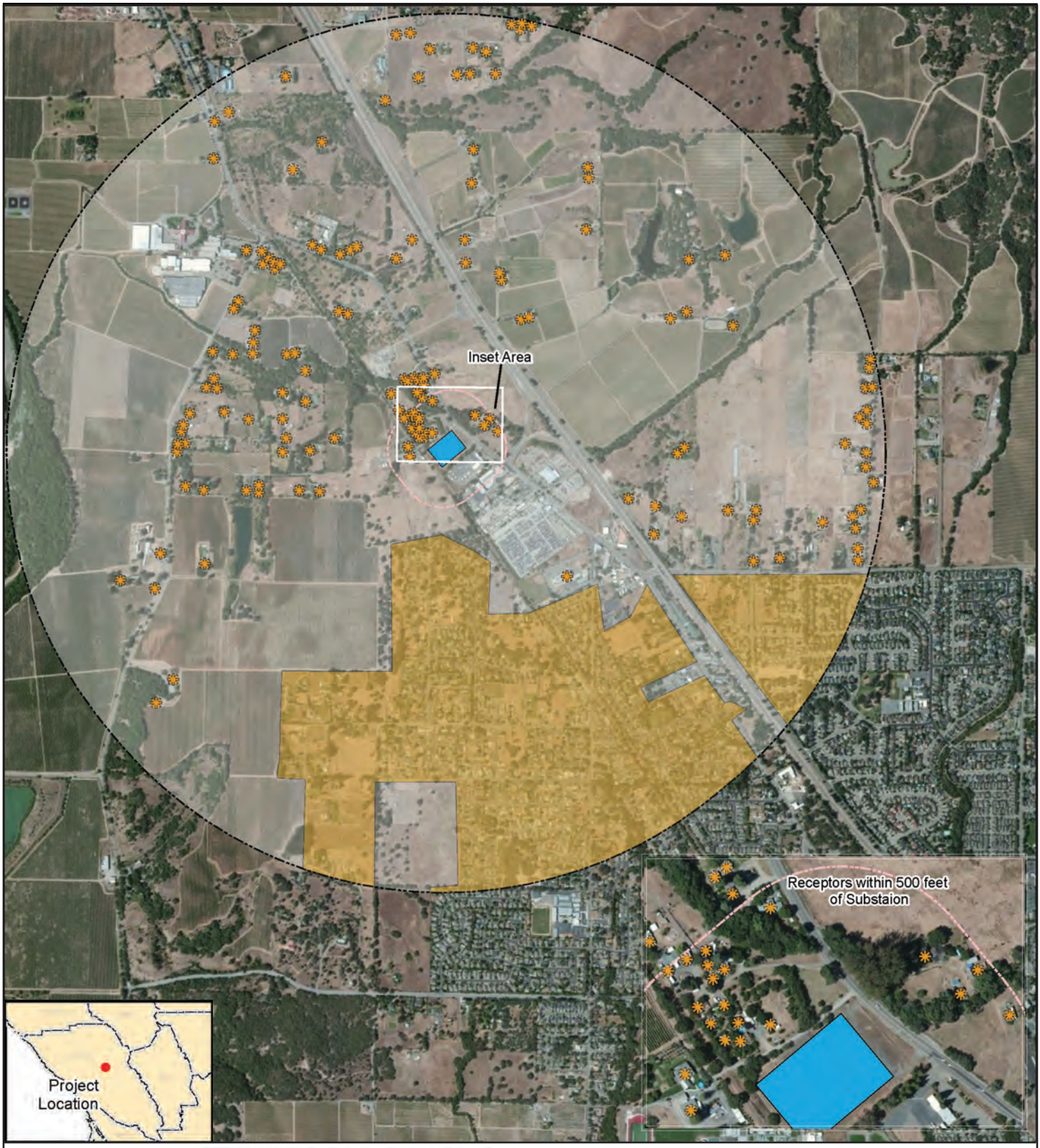
Source: PG&E, 2012.

0 62.5 125 250 ft

N

Figure 5.4-1

Windsor Substation Project
Biological Resources Mapset
Map 10



Source: PG&E, 2012.

Aspen Environmental Group

Figure 5.12-1

Existing Sensitive Receptors

ENVIRONMENTAL MINOR PROJECT CHANGE FORM

Project Name: _____ Request Prepared By: _____

Date Approval Required: _____ Variance Request No: _____

Date Submitted: _____ Location: _____

Landowner: _____ Landowner Parcel Number: _____

Current Vegetative Cover/Land Use: _____

Existing Sensitive Resource? ☐ NO ☐ YES Specify: _____

Modifying (Check as many as apply): ☐ MITIGATION MEASURE ☐ PLAN /PROCEDURE ☐ SPECIFICATION ☐ DRAWING ☐ PERMIT CONDITION ☐ OTHER

Specify Source (e.g., Mitigation Measure B.5): _____

Description of Change and Justification: (Attach additional sheets if needed.)

Attachments: ☐ PHOTO ☐ CONSTRUCTION DRAWING ☐ ADDITIONAL ENVIRONMENTAL ANALYSIS ☐ CORRESPONDENCE ☐ OTHER : _____

Resources:

Biological ☐ NO SENSITIVE RESOURCES PRESENT ☐ SENSITIVE RESOURCES PRESENT ☐ N/A

New Survey Report Attached: ☐ YES ☐ NO

If No, Previous Biological Survey Reference: _____

Cultural ☐ NO RESOURCES PRESENT ☐ RESOURCES PRESENT WITHIN PROJECT APE : ☐ YES ☐ NO ☐ N/A (PAVED /GRAVEL AREA AND NO GROUND DISTURBANCE)

If in APE, Previous Cultural Survey Report Reference:_____

If not in APE, attach new survey report.

Other Potential Impacts: (Check any potential changes to permitted impacts and provide details below. Attach additional sheets if needed.)

- ☐ AIR QUALITY
- ☐ BIOLOGICAL RESOURCES
- ☐ CONTAMINATED SOILS
- ☐ CULTURAL RESOURCES
- ☐ HAZARDOUS MATERIALS
- ☐ LAND USE
- ☐ NOISE
- ☐ PALEO RESOURCES
- ☐ SOCIOECONOMIC
- ☐ STORM WATER (SWPPP)
- ☐ TRAFFIC
- ☐ VISUAL
- ☐ WATER RESOURCES
- ☐ WETLANDS

CEQA and Permitting: (Provide details for any "Yes" answer and attach additional information if needed.)

1. Will modification involve substantial changes that will require major changes to the CEQA document? ☐ YES ☐ NO

2. Will modification result in new significant environmental effects or a substantial increase in the severity of previously identified impacts? ☐ YES ☐ NO

3. Additional agency notifications and/or permit modifications required? ☐ YES ☐ NO

Conditions of Approval or Reasons for Denial: (Attach additional information if needed.)

PG&E Required Signatures: (Attached email approvals may be used in lieu of signatures.)

PG&E Chief Construction Inspector or PG&E Foreman: ☐ MODIFICATION NEEDED FOR SAFE AND EFFICIENT CONSTRUCTION

Name: _____ Signature: _____ Date: _____

Environmental Inspector: ☐ FIELD REVIEW COMPLETE

Name: _____ Signature: _____ Date: _____

PG&E Land Agent: ☐ CONSISTENT WITH EXISTING RIGHTS ☐ NEW RIGHTS OBTAINED

Name: _____ Signature: _____ Date: _____

PG&E Environmental Compliance Lead: ☐ APPROVED ☐ APPROVED WITH CONDITIONS (SEE CONDITIONS ABOVE) ☐ DENIED

Name: _____ Signature: _____ Date: _____

ATTACHMENT C

TEMPORARY EXTRA WORK SPACE (TEWS) REQUEST

Project Name

TEWS Location/Address City/County

Proposed Use of Site

Proposed Date(s) of Use Proposed Hours of Use

Adjacent Land Uses

PG&E Permit Coordinator (Prepared by) Date

Biological, Cultural and Paleontological reconnaissance surveys are mandatory for use of any areas containing vegetation, or exposed earth that have not been previously surveyed and fully described in project documents. Biological surveys are mandatory for all temporary extra work sites. Attach a diagram of the proposed area that identifies the location of the site and proximity to sensitive resources or receptors.

Complete the environmental checklist below. Note: **Yes** answers require additional clarification and should be submitted as an attachment to this form.

ATTACHMENT C

TEMPORARY EXTRA WORK SPACE (TEWS) REQUEST

Environmental Checklist	Yes*	No	CPUC Verified
Air Quality: Would equipment be on site or idled for more than 10 minutes? Would there be dust-producing activities?			
Biological Resources: Would use of the site result in potential impacts to sensitive biological resources? Would use of the site result in potential for the spread of noxious weeds?			
Cultural/Paleontological Resources: Would clearing or grading be required?			
Water Resources: Would runoff from the site flow into storm drains or a waterway? Would equipment refueling or maintenance be performed? Would materials block/impact storm drains or gutters?			
Land Use and Recreation: Would use of site block access to local land uses and recreational areas?			
Noise: Are noise-sensitive receptors adjacent to the site? (e.g., homes, schools, care facilities, hospitals, churches convalescent homes, parks, recreational areas)			
Socioeconomics: Would access to business be blocked? Would there be disruption of business operations?			
Traffic: Would parking be eliminated? Would increased construction traffic result in impacts? Is the site a residential area?			
Visual: Would lights at site create glare for adjacent land uses (including roadways)?			

Standard Conditions of Approval

- The CPUC, via its designated Environmental Monitor, will review and approve/deny the Temporary Extra Workspace Request (TEWS) request within four business days of receiving this completed form.
- Use of TEWS is limited to 60 days. First proposed date of use: _____
- Use of TEWS shall be in compliance with local ordinances (including traffic/noise) and mitigation measures.
- If any signs of cultural resources are identified, work shall cease immediately and the site shall be reevaluated.
- The proposed site shall not be used for storage of fuel or hazardous materials.
- All drips, leaks, and/or spills from vehicles and/or equipment shall be cleaned-up immediately and disposed of in appropriate, labeled containers.
- Adjacent streets shall be swept or cleaned with water at the end of each workday if visible soil material is carried on them.
- No parking or storage of vehicles (including personnel vehicles), equipment, pipe, or any other project-related item shall be allowed on adjacent roadways.
- If a complaint is received, it shall be forwarded to the PG&E Permit Coordinator and the CPUC Environmental Monitor for review.

The following signatures indicate that the proposed site is approved for TEWS. On a random basis, a CPUC Environmental Monitor will verify that use of the proposed site is in accordance with the conditions noted. This approval may be revoked at any time by any one of the approval team. Failure to comply with all conditions will result in immediate revocation of this TEWS approval.

Property Owner Date

PG&E Construction Date

PG&E Permit Coordinator Date

The above TEWS request and attached documentation have been reviewed and this request is ____ approved or ____denied (*X one*).

CPUC Environmental Monitor Date

Additional CPUC Conditions of Approval

(CPUC Monitor Initial _____)

REASON(S) FOR DENIAL: