

## 4 MITIGATION MONITORING PLAN

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### 4.1 OVERVIEW

PG&E proposes to construct and operate the Santa Cruz 115-kV Reinforcement Project. PG&E proposes to:

- Rebuild approximately 7.1 miles of the existing Green Valley-Camp Evers 115-kilovolt (kV) Power Line (**Northern Alignment**) from a single-circuit line to a double-circuit line by replacing the existing wood power poles with tubular steel poles (TSP) and installing new conductors
- Construct an approximately 1.7-mile long single-circuit 115-kV power line in an existing distribution right-of-way (ROW) (**Cox-Freedom Segment**) from the Northern Alignment to Rob Roy Substation
- Install new components at **Rob Roy Substation** in order to accommodate the new 115-kV circuit and installing TSPs to accommodate the interconnection of the existing Green Valley-Rob Roy 115-kV Power Line and Rob Roy-Paul Sweet 115-kV Power Line into the modified Rob Roy Substation.

An Initial Study was prepared to assess the proposed project's potential environmental effects based on information in the Proponent's Environmental Assessment (PEA), project site visits, responses to CPUC data requests, and supplemental research. The majority of the project's impacts would occur during project construction. In its PEA, PG&E proposed APMs to reduce potentially significant adverse impacts related to project construction and operation. APMs were finalized during preparation of the Initial Study.

The purpose of this Mitigation Monitoring Plan (MMP) is to ensure effective implementation of each APM, as well as the mitigation measures identified in the MND and imposed by the CPUC as part of project approval.

The MMP is presented in Table 4.1-1 and includes:

- APMs and mitigation measures that PG&E must implement as part of the project
- The monitoring requirements
- Timing of implementation for each measure

The CPUC will use this MMP as the framework for a Mitigation Monitoring, Compliance, and Reporting Plan (MMCRP). The CPUC will create the MMCRP to formalize protocols to be followed prior to and during construction by CPUC third-party Environmental Monitors

#### 4: Mitigation Monitoring Plan

(EM) and PG&E staff. The MMCRP will include, but will not be limited to, the following topics:

- Agency jurisdiction
- Roles and responsibilities
- Communication
- Compliance verification and reporting
- Project changes

A CPUC-designated environmental monitor will carry out all construction field monitoring to ensure full implementation of all measures. In all instances where non-compliance occurs, the CPUC's designated environmental monitor will issue a warning to the construction foreman and PG&E's project manager. Continued non-compliance shall be reported to the CPUC's designated project manager. Any decisions to halt work due to non-compliance will be made by the CPUC. The CPUC's designated environmental monitor will keep a record of any incidents of non-compliance with mitigation measures, APMs, or other conditions of project approval. Copies of these documents shall be supplied to PG&E and the CPUC.

The CPUC will finalize the MMCRP in consultation with PG&E. Drafted language for the minor project modification and dispute resolution protocols are provided below.

#### 4.2 MINOR PROJECT MODIFICATIONS

The CPUC Project Manager and the CPUC Monitoring Team will ensure that any process to consider minor project modifications that may be necessary due to final engineering or deviations from the procedures identified under the monitoring program are consistent with CEQA requirements. Project modifications cannot proceed if they would require ground-disturbing activities outside the geographic boundary of the project corridor or would create a new or substantially more severe significant impact. A minor project modification should be strictly limited to minor project changes that will not trigger other permit requirements, unless the appropriate agency has approved the change; that does not increase the severity of an impact or create a new impact without appropriate agency approval; and that complies with the intent of the mitigation measure.

A project modification that has the potential for creating significant environmental effects will be evaluated to determine whether supplemental California Environmental Quality Act (CEQA) review is required. Any proposed deviation from the approved project, adopted mitigation measures, APMs, and correction of such deviation, will be reported immediately to the CPUC Project Manager for their review. The CPUC Monitoring Team will review the minor project modification to ensure that all of the information required to review the minor project modification is included, and then forward the request to the CPUC Project Manager for review and concurrence that no additional CEQA evaluation is necessary. The CPUC Project Manager may request a site visit or may need additional information to verify that additional CEQA evaluation is not needed. Approval by other agencies may also be needed. A minor project

## 4: Mitigation Monitoring Plan

modification request, in general, must include the information listed below:

- Detailed description of the location, including maps, photos, and/or other supporting documents;
- How the minor project modification request deviates from a project requirement;
- Biological resources surveys or verification that no biological resources would be significantly impacted;
- Cultural resource surveys or verification that no cultural resources would be significantly impacted; and
- Agency approval (if necessary)

### 4.4 DISPUTE RESOLUTION

It is expected that the MMP will reduce or eliminate many potential disputes; however, disputes can occur even after the best preparation.

Issues should be first addressed at the field level informally between the CPUC environmental monitors and PG&E's monitors at the regular progress meetings. Questions may be raised to the PG&E Project Environmental Manager or PG&E Project Construction Manager. Should the issue persist or not be resolved at these levels, the following procedures will be used:

1. Disputes unresolved in the field and complaints (including those from the public) should be directed to the CPUC Project Manager for resolution. The Project Manager will attempt to resolve the dispute informally. Should this informal process fail, the CPUC Project Manager will inform PG&E prior to initiating Step 2.
2. Should the informal process in the field fail, the CPUC Project Manager may issue a formal letter requiring corrective actions to address the unresolved or persistent deviations from the proposed project or adopted MMP.
3. If a dispute or complaint regarding implementation or evaluation of the MMCRP or mitigation measures cannot be resolved informally or through a letter request, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC's Executive Director. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants to resolve the dispute. The Executive Director shall issue an Executive Resolution describing the decision and serve it to the filer and other affected participants.
4. If one or more of the affected parties is not satisfied with the decision described in the Executive Resolution, such party/ies may appeal the Executive Resolution to the CPUC via a procedure to be specified by the CPUC.

Parties may also seek CPUC review through procedures specified in the CPUC Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the procedure described in this document.

#### 4: Mitigation Monitoring Plan

Table 4.1-1: Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<b>Aesthetics</b>			
<i>Light and Glare</i>	<b>APM AES-02: Use of Non-Reflective Conductors and Equipment.</b> Non-reflective 115 kV conductor (non-specular conductors) and insulators will be installed along the Northern Alignment and Cox-Freedom Segment to minimize the reflectivity and general visibility of the line.	Verify that conductors and insulators to be used are non-reflective prior to installation.	During construction
<i>Existing Visual Character</i>	<b>APM AES-03: Use of Self-Weathering Poles.</b> New and replacement tubular steel poles to be installed will be manufactured steel that will come pre-weathered with a rust color.	Verify that poles are pre-weathered with a rust color prior to pole installation.	During construction
<i>Light and Glare</i>	<b>APM AES-04: Nighttime Lighting Installation.</b> The new lighting at Rob Roy Substation will use non-glare or hooded fixtures, and will be directed to reduce spillover into areas outside the substation site and minimize the visibility of lighting from off-site locations.	Verify that lighting utilizes non-glare and hooded fixtures. Verify that lighting is directed to reduce spillover and reduce visibility.	During and after construction
<b>Air Quality and Greenhouse Gases</b>			
<i>Construction Phase Air Quality</i>	<b>APM AIR-01: Fugitive Dust Controls.</b> All active construction areas, unpaved access roads, parking areas, and staging areas will be watered or stabilized with non-toxic soil stabilizers at least two times per day or as needed to control fugitive dust.	Verify through on-site observation.	During construction
<b>Biological Resources</b>			
<i>Special Status Species and Habitats</i>	<b>APM BIO-08: On-Site Biological Monitoring.</b> Under the direction of the PG&E Project Biologist, a CPUC-approved biologist will be present at all active construction areas in biologically sensitive areas.	Verify through on-site observation.	During construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Special Status Wildlife</i>	<b>APM BIO-09: Special-status Wildlife in the Project Areas.</b> If a special-status species is observed on site, crews will stop work as quickly as is safe to do so and will contact the CPUC-approved biologist. Crew members will not be permitted to touch, handle, or relocate special-status wildlife. Notification and reporting guidelines established in the MMCRP will be implemented. If there is no CPUC-approved biologist in the immediate area to document the resource observation, crews will contact the Environmental Compliance Manager and the PG&E Project Biologist.	Verify that special status species are avoided.	During construction
<i>Special Status and General Wildlife</i>	<b>APM BIO-10: Construction Site Speed Limits.</b> When safe to do so, a speed limit of 15 miles per hour will be observed on unpaved public access routes, and crews will maintain awareness for wildlife in the roadway. Travel on public roadways will be conducted according to established speed limits or as safety allows.	Verify that speed limits are obeyed in the field.	During construction
<i>Avian Species</i>	<b>APM BIO-13: Raptor Protection Guidelines for New Poles.</b> The majority of the project has been designed to conform to the suggested guidelines in the following documents: <ul style="list-style-type: none"> <li>• Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 – APLIC, 1994</li> <li>• Avian Protection Plan Guidelines – APLIC and USFWS, April 2005</li> <li>• Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 – APLIC, 2006</li> </ul> <p>The project’s final design and installation will reflect these suggested guidelines; however, no 115 kV insulators have been manufactured that meet the recommended 71-inch horizontal phase to ground clearance guideline. As a result, the project will not reflect to this suggested guideline, which is not required to minimize significant effects.</p>	Verify that final designs include the specifications listed.	Prior to construction
<i>Special Status and General Wildlife</i>	<b>APM BIO-18: Inspection of Construction Materials for Wildlife.</b> Before being moved, all poles and similar construction materials stored overnight at the construction site will be thoroughly inspected for animals. If special-status species are observed within poles or similar construction materials, they will be avoided and allowed to leave of their own volition.	Verify that construction materials are covered and that special status species are avoided.	During construction

#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Special Status and General Wildlife</i>	<b>APM BIO-19: No Pets in the Project Area.</b> Crewmembers and project personnel will not be allowed to bring pets to the project area.	Verify that no pets are brought on-site.	During construction
<i>Special Status and General Wildlife</i>	<b>APM BIO-20: No Firearms in the Project Area.</b> Firearms will be prohibited in all work areas, unless carried by authorized security personnel.	Verify that no firearms are brought on-site.	During construction
<i>Special Status and General Wildlife</i>	<b>APM BIO-21: Garbage and Trash Management.</b> Littering will be prohibited. Food-related garbage and trash will be enclosed in covered, secured containers and removed from the project area as necessary, but no less than weekly. Storage yards, contractor yards, and other non-temporary work areas may use centralized areas to aggregate and store wastes.	Verify that garbage and trash is cleaned up.	During construction
<i>Santa Cruz Long-toed Salamander</i>	<b>APM BIO-29: Installation of Surface Barriers on Overland Access Roads.</b> When vehicles and other construction equipment are required to travel on designated overland routes to reach work sites within suitable upland habitat, determined per APM BIO-25, for Santa Cruz long-toed salamander, the CPUC-approved, qualified biologist will survey the route and flag all burrows and/or other potential refugia along the route for avoidance. If travel over burrows is determined unavoidable (e.g. no other route that can support vehicle travel is available due to space or topography constraints), a temporary surface barrier (e.g. plywood, steel plate, or fiberglass matting) will be placed over burrows immediately prior to using the overland access route in areas where practicable (based on topography, soil type, safety, etc.). The temporary surface barrier will be immediately removed at the end of each day (or sooner). If it is not practicable to place a temporary surface barrier or avoid the burrow within the overland route, no access will occur in these areas until the PG&E Project Biologist contacts USFWS, CDFW, and the CPUC for additional instructions and measures to be implemented that ensure no impacts to Santa Cruz long-toed salamanders.	Verify that routes with potential burrows are identified and surveyed prior to work in the areas.  Verify that plates are installed, used, and removed according to the measure specifications.	Prior to and during construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<p><i>Monterey Spineflower</i></p>	<p><b>Mitigation Measure Biology-1: Avoidance and Minimization of Impacts to Monterey Spineflower (Supersedes APM BIO-27).</b> Before construction begins and during the appropriate phenological periods, Monterey spineflower surveys shall be conducted by a CPUC-approved, qualified botanist in areas where they were previously identified or have the potential of occurring in project work areas (as shown in Initial Study Figures 3.4-3 and 3.4-4 and/or in the project GIS database). The surveys shall be limited to the construction right-of-way and publically accessible lands where PG&amp;E has access rights. No work shall occur within areas of Critical Habitat for Monterey Spineflower. Agricultural fields and developed areas shall not be surveyed due to the lack of suitable habitat for supporting rare plant species. The boundaries of Monterey spineflower populations near project work areas, or the limits of project work areas or access roads/routes near Monterey spineflower populations that will be avoided shall be delineated with clearly visible flagging or fencing. The populations that will be impacted shall be recorded using a submeter-accurate global positioning system (“GPS”) unit, and the total acreage of temporary and permanent impacts shall be calculated.</p> <p>In project work areas where Monterey spineflower is present, work shall be conducted in late summer or early fall to avoid impacting these plants before they have set seed, if feasible and only by a biologist appropriately permitted to collect seed. If this is not feasible and it is possible to collect seed prior to the start of construction, seed shall be collected from the Monterey spineflower individuals and shall be used during restoration following the completion of construction activities. If seed collection is not feasible all work areas occupied by the spineflower shall be protected by steel plates or plywood, which shall be removed as soon as construction activity in that area has been completed. Alternatively, a CPUC-approved, qualified biologist can proceed with the relocation of the spineflower to previously identified and approved locations.</p> <p>To mitigate for the anticipated loss of less than 0.1 acre of occupied Monterey spineflower habitat due to project related permanent impacts (such as pole installation), PG&amp;E shall enhance habitat at a 1:1 ratio for Monterey spineflower by removing iceplant (<i>Carpobrotus spp.</i>) and other non-native plants, including European beach grass (<i>Ammophila arenaria</i>) at locations in</p>	<p>Verify that surveys are conducted in the appropriate time period by a qualified biologist.</p> <p>Verify that project plans do not include work within the small section of Critical Habitat within the project corridor.</p> <p>Verify that if seed collection is necessary, it is only collected under an appropriate permit by a qualified biologist</p> <p>Verify that restoration techniques or enhancement effort are implemented and successful, if required.</p>	<p>Prior to, during, and after construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>which Monterey spineflower are present and disturbed by project activities and if property owners authorize the enhancement efforts. These efforts shall reduce non-native species coverage by 85% and invasive species coverage by 90% and shall be maintained for up to 1 year post-construction. Site maintenance activities shall be altered or intensified when necessary to meet performance criteria. Post-construction monitoring of areas previously occupied by spineflower and impacted by construction shall be conducted by a CPUC-approved, qualified biologist to ensure that the spineflower populations have recovered, are stable, and that the sites are not occupied by invasive species. If invasive species are encroaching on the sites, they shall be removed. If spineflower populations are not recovered comparable to pre-construction levels after 1 year, remedial actions shall be taken and may include broadcasting spineflower seed collected from plants in immediately adjacent areas, if available, or obtained from appropriate seed banks, and shallow soil disturbance (e.g., raking) to stimulate spineflower germination and establishment.</p> <p>Alternatively, PG&amp;E shall identify, together with USFWS, Santa Cruz County and the CPUC, appropriate suitable sites where the enhancement efforts can be executed. An appropriate site may include areas within PG&amp;E properties close to existing populations, such as at Rob Roy Substation. After removing invasive plants, the selected restoration area shall be seeded with Monterey spineflower seed collected from impacted plants (if available) or obtained from appropriate seed banks. A monitoring and reporting program shall be developed and approved by the CPUC to ensure compliance, which shall be detailed in the Revegetation, Restoration, and Monitoring Plan. The monitoring program shall include pre- and post-treatment vegetation sample plot surveys to record the percent cover of invasive plants and Monterey spineflower prior to and after treatment. The plots shall be surveyed during the appropriate phenological period for Monterey spineflower to allow for positive identification. Non-native and invasive weed cover shall be no more than 10% in the restoration plots. Monitoring shall be conducted for a period of 2 years. If the restoration is not successful after 2 years, PG&amp;E shall consult with USFWS, Santa Cruz County, and CPUC to define alternative measures. Reporting frequency and content shall be addressed in the Revegetation, Restoration, and Monitoring Program.</p>		



4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Special Status Species Plants</i>	<p><b>Mitigation Measure Biology-2: Site Restoration and Revegetation (Supersedes APM BIO-03).</b> PG&amp;E shall prepare a Revegetation, Restoration, and Monitoring Plan prior to commencement to project construction that shall be submitted to the CPUC for approval. The plan shall include the requirements for</p> <ul style="list-style-type: none"> <li>• Impacts to Monterey spineflower identified in Mitigation Measure Biology-1</li> <li>• Impacts to rare plants identified in Mitigation Measures Biology-5</li> <li>• Tree removal identified in Mitigation Measure Biology-6</li> <li>• Impacts to coastal scrub habitat as identified in Mitigation Measure Biology-17</li> </ul> <p>The plan shall include the species or habitats that could be impacted, the replacement or restoration ratios (as appropriate), the restoration methods and techniques, and the monitoring periods and success criteria as identified in each measure.</p>	<p>Verify that the plan is prepared and includes the provisions of the listed mitigation.</p> <p>Verify that the plan is implemented</p>	<p>Prior to, during, and after construction</p>
<i>Special Status Species and Habitats</i>	<p><b>Mitigation Measure Biology-3: Conduct Environmental Training for All Crewmembers (Supersedes APM BIO-05).</b> Conduct Environmental Training for All Crewmembers. An environmental training program shall be developed and presented to all crew members prior to the beginning of all construction associated with this project. The training shall describe special-status species and sensitive habitats that could occur within the project areas, protection afforded these species, and the avoidance and minimization measures required to avoid and/or minimize impacts on this project. Penalties for violations of environmental laws shall also be incorporated into the training session. Each crewmember shall be provided with an informational training handout and a decal to indicate that he/she has attended the training. The roles and responsibilities of the CPUC-approved biologists and other environmental representatives shall be identified in the Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) and discussed during the training.</p> <p>The environmental training described here shall include information about avoidance measures regarding the Santa Cruz long-toed salamander, its protected status, and the procedures to be followed in the event that the Santa Cruz long-toed salamander is observed during construction. All new</p>	<p>Review the environmental training program.</p> <p>Verify that all crew receive the training.</p>	<p>Prior to and during construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>construction personnel shall receive this training before beginning work on this project.</p> <p>A copy of the training and training materials shall be provided to the CPUC at least 30 days prior to the start of construction. Training logs and sign-in sheets shall be provided to CPUC on a monthly basis. As needed, infield training shall be provided to new on-site construction personnel by the environmental compliance supervisor or a qualified individual who shall be identified by the PG&amp;E's Project Biologist, or initial training shall be recorded and replayed for new personnel.</p>		
<i>Special Status Species and Habitats</i>	<p><b>Mitigation Measure Biology-4: Minimize Noxious Weeds.</b> Precautions shall be taken to minimize the introduction of any invasive weeds. Construction equipment shall be clean before it arrives at work areas in the project corridor. Any landscaping involving vegetation other than trees and/or shrubs shall consist of native seed mix or other ecologically appropriate, non-invasive, plants. Only weed-free straw or mulch shall be used.</p>	<p>Verify that equipment is cleaned and that landscaping does not include non-native species.</p>	<p>During construction</p>
<i>Special Status Plants</i>	<p><b>Mitigation Measure Biology-5: Avoidance and Minimization of Impacts to Special-Status Plant Populations (Supersedes APM BIO-04).</b> If rare plants other than Monterey spineflower (which is addressed in Mitigation Measure Biology-1), but including robust spineflower, Santa Cruz tarplant, Kellogg's horkelia, and Gairdners yampah, are identified within proposed work areas through surveys conducted by a CPUC-approved, qualified botanist, they shall be flagged and avoided, if feasible. If avoidance is not feasible and impacts to the individuals would occur as a result of work activities, the impacts shall be documented and addressed through the implementation of the Revegetation, Restoration, and Monitoring Plan. The plan shall require 1:1 restoration for any impacted rare plants and shall include a 2- year minimum monitoring period to ensure successful regrowth of the rare plant. The plan shall also include success/performance criteria. Measureable, quantitative success/performance criteria to determine the success of mitigation for each rare plant species include: the establishment of self-sustaining populations within naturally functioning and regenerating habitat; size and density of the rare plant populations similar to the reference populations; no more than 15 percent relative cover of non-native species, and no more than 10 percent relative cover of invasive species (e.g., ice</p>	<p>Verify that surveys are conducted in the appropriate time period by a qualified biologist.</p> <p>Verify that restoration techniques or enhancement effort are implemented and successful, if required.</p>	<p>Prior to, during, and after construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	plant, European beach grass, and pampas grass). If success is not reached within two years, PG&E shall consult with appropriate resource agencies (based on status and listing), Santa Cruz County, and CPUC to define alternative measures.		
<i>Special Status Species and Habitats</i>	<p><b>Mitigation Measure Biology-6: Tree Removal and Replacement.</b> The Revegetation, Restoration, and Monitoring Plan (Mitigation Measure Biology-2) shall address removal and compensatory replacement of special status tree species, including oak species and Monterey pine.</p> <p>The Revegetation, Restoration, and Monitoring plan shall include the following minimum elements that address these species:</p> <ul style="list-style-type: none"> <li>• Identification of species, size, and locations of all oak species and Monterey pine to be removed, preferably in a GIS layer</li> <li>• Species, size, and locations of all replacement plantings</li> <li>• Tree planting detail (provisions for adequate drainage, location, and spacing of replanted trees)</li> <li>• Planting schedule</li> <li>• Agreement with proper authority regarding location of replanting (e.g., written permission from jurisdiction to replant on that jurisdiction's land, or landowner)</li> <li>• Monitoring requirements to ensure success of the trees and contingency measures if trees are not successful. Both tree species should be monitored for at least three years</li> </ul> <p>Oaks and Monterey pine shall be replaced as described in the following table.</p>	<p>Verify that the plan includes the listed provisions.</p> <p>Verify that the appropriate number of trees is identified for replacement and that locations are identified or another fund is identified through Santa Cruz County.</p>	<p>Prior to, during and after construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan											
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action								
	<p>If tree replacement on-site is not possible due to constraints such as lack of property owner consent, incompatibility with regulatory clearance requirements, or some other similar constraint, PG&amp;E shall consult with Santa Cruz County to fund appropriate organizations for offsite tree replacement.</p> <table border="1"> <thead> <tr> <th colspan="2">Mitigation for removal of oak trees of any size</th> </tr> </thead> <tbody> <tr> <td>Oak</td> <td>Replacement ranges from 1:1 for saplings to 10:1 for large oaks; replacement should be of the same species of oak as removed. Replacement ratios shall be determined by the CPUC-approved, qualified biologist (or arborist), depending on the size and health of each tree removed.</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Mitigation for removal of Monterey pine</th> </tr> </thead> <tbody> <tr> <td>Monterey Pine</td> <td>Individual specimens of Monterey pine less than 6 inches shall be relocated; specimens over 6 inches and under 24 inches diameter that are proposed for removal shall either be relocated or replanted at a 5:1 ratio  Individual trees greater than 24 inches diameter shall be replaced at 10:1.</td> </tr> </tbody> </table>	Mitigation for removal of oak trees of any size		Oak	Replacement ranges from 1:1 for saplings to 10:1 for large oaks; replacement should be of the same species of oak as removed. Replacement ratios shall be determined by the CPUC-approved, qualified biologist (or arborist), depending on the size and health of each tree removed.	Mitigation for removal of Monterey pine		Monterey Pine	Individual specimens of Monterey pine less than 6 inches shall be relocated; specimens over 6 inches and under 24 inches diameter that are proposed for removal shall either be relocated or replanted at a 5:1 ratio  Individual trees greater than 24 inches diameter shall be replaced at 10:1.		
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<i>Santa Cruz Long-toed Salamander</i>	<p><b>Mitigation Measure Biology-7: Seasonal Ground Disturbance Windows (Supersedes APM BIO-25).</b> Project related ground disturbance activities shall not take place in Santa Cruz long-toed salamander upland habitat or dispersal habitat within 1 mile of a known or potential breeding pond during the local rainy season (typically between October 15 and April 15 or as outlined by the local precipitation data available at NOAA National Weather Service’s website <a href="http://www.weather.gov/">http://www.weather.gov/</a> ) to avoid affecting Santa Cruz long-toed salamander during their breeding migration or during outward-bound dispersal of post-metamorphic juveniles. The seasonal restriction does not apply to locations that are within 1 mile of a known or potential breeding pond but do not support upland habitat or dispersal habitat for the salamander such as paved areas and agricultural fields. The locations for which the seasonal restriction does not apply shall be identified with supporting documentation submitted to the CPUC for approval.</p>	<p>Verify that seasonal construction periods are enforced in Santa Cruz long-toed salamander habitat.</p> <p>Verify that the locations of seasonal restrictions are identified.</p> <p>Verify that fencing is installed and maintained for work in areas of dispersal or upland habitat if work extends into the next migration season.</p>	During construction								

#### 4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p><b>Fencing.</b> If construction is anticipated to extend past the beginning of the local rainy season, non-ground disturbing work within the work areas supporting dispersal and upland habitat for the salamander shall only be allowed if an exclusion fence is in place prior to the first significant rainfall (0.25 inches or greater) and no later than October 15th. Fencing shall remain in place until activities at a particular site are completed. During construction, the CPUC-approved, qualified biologist shall check the fence at each location on at least a weekly basis for presence of wildlife and for integrity of the fence.</p> <p>If a salamander is observed in project work areas, crews shall stop work within the specific work area as quickly as is safe to do so and shall immediately contact the Environmental Compliance Manager and the PG&amp;E Project Biologist. Work shall not commence within the specific location of the siting until the completion of consultation with USFWS and CDFW and all impacts to Santa Cruz long-toed salamander can be avoided.</p>	<p>Verify that work is stopped and agencies consulted if a salamander is found.</p>	
<p><i>Santa Cruz Long-toed Salamander</i></p>	<p><b>Mitigation Measure Biology-8: Limiting Vegetation and Tree Removal (Supersedes APM BIO-26).</b> For all sites west of Corralitos Creek, including those within 1 mile of a known or potential Santa Cruz long-toed salamander breeding ponds, all clearing of vegetation shall occur under the supervision of the CPUC-approved, qualified biologist to ensure that adjacent habitat is not unnecessarily removed and no impacts occur to Santa Cruz long-toed salamander. The CPUC-approved biologist shall conduct a pre-activity survey for special status species, ensure that the access routes are surveyed to avoid crushing wildlife, and limit the vegetation removal to the minimum amount necessary to complete the work. Clearing of vegetation west of Corralitos Creek shall be performed by hand (chain-saws and similar hand equipment are acceptable) without the use of heavy equipment. In addition, clearing of vegetation (including tree removal) in these areas west of Corralitos Creek shall not occur during the rainy season (typically between October 15 and April 15 or as outlined by the local precipitation data available at NOAA National Weather Service's website <a href="http://www.weather.gov/">http://www.weather.gov/</a> ), when Santa Cruz long-toed salamander are more likely to be at or near the surface. The trees removed (number of trees, diameter at breast height, species, and location) shall be documented and addressed in the Revegetation, Restoration, and Monitoring Plan (Mitigation Measure Biology-2).</p>	<p>Verify that a biologist is on-site for work within Santa Cruz long-toed salamander habitat.</p> <p>Verify that pre-activity surveys are completed.</p> <p>Verify that no vegetation clearing or tree removal occurs during the rainy season in Santa Cruz long-toed salamander habitat.</p>	<p>Prior to and during construction.</p>

#### 4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<p><i>Santa Cruz Long-toed Salamander</i></p>	<p><b>Mitigation Measure Biology-9: Working in Santa Cruz Long-toed Salamander Habitat (Supersedes APM BIO-07).</b> Construction that could harm Santa Cruz long-toed salamander (e.g., staging of heavy equipment and materials, grading, excavation) within work areas where suitable upland habitat occurs (or any additional suitable upland habitat areas identified prior to construction) as defined in Mitigation Measure Biology-7, shall only be allowed if Santa Cruz long-toed salamanders have been excluded from the area during the rainy/dispersal season prior to construction. If work areas need to be expanded in suitable upland habitat areas where salamander has not been previously excluded, only non-ground disturbing activities (i.e., no excavation) shall be allowed in these areas. The CPUC-approved, qualified biologist shall survey the expansion areas and flag all burrows and/or other potential refugia for avoidance. If burrows are unavoidable (e.g., no other space that can support vehicles or equipment is available due to space or topography constraints), a temporary surface barrier (e.g. plywood, steel plate, or fiberglass matting) shall be placed over burrows immediately prior to using the expanded work area, where practicable (based on topography, soil type, safety, etc.). The temporary surface barrier shall be immediately removed at the end of each day (or sooner). If it is not practicable to place a temporary surface barrier or avoid the burrow within the expanded work area, no work that could harm Santa Cruz long-toed salamander (e.g., staging of heavy equipment and materials, grading, excavation) shall be allowed in these areas until the PG&amp;E Project Biologist contacts USFWS, CDFW, and the CPUC for additional instructions and measures to be implemented that ensure no impacts to Santa Cruz long-toed salamanders. Under no circumstances shall the salamanders be handled. Vegetation and tree removal in Santa Cruz long-toed salamander habitat is addressed in Mitigation Measure Biology-8.</p>	<p>Verify that no work occurs between sunset and sunrise in Santa Cruz long-toed salamander habitat unless the conditions specified in the measure are met.</p>	<p>During construction</p>
<p><i>Santa Cruz Long-toed Salamander</i></p>	<p><b>Mitigation Measure Biology-10: Habitat Restoration of Disturbed Work Areas in Santa Cruz Long-toed Salamander Habitat (Supersedes APM BIO-28).</b> Habitat restoration of disturbed work areas within suitable upland habitat or dispersal habitat for the Santa Cruz long-toed salamander shall be required. Habitat restoration shall include, but not be limited to, reseeding and restoring construction areas to pre-construction conditions with native species. Areas shall be monitored for one year to ensure that invasive species do not overtake native species growth. If invasive species are found, they shall be</p>	<p>Verify that areas requiring habitat restoration are identified in the plan.</p> <p>Verify that areas are restored and enhanced for Santa Cruz long-toed salamander.</p>	<p>Prior to and after construction</p>

#### 4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>removed. Woody debris, leaf litter, and other natural materials used as refugia for migrating salamanders shall be restored or replaced after construction is complete in areas where it was cleared prior to construction. The debris should be stockpiled during clearing for later use. Habitat restoration efforts shall be identified in the Revegetation, Restoration, and Monitoring Plan (Mitigation Measure Biology-2).</p>		
<i>Nesting Birds</i>	<p><b>Mitigation Measure Biology-11: Nesting Birds (Supersedes APM BIO-12).</b> This measure applies to all work areas in which construction related activities are to be conducted during the nesting bird season (generally between February 15th and August 31st but may be earlier or later depending on species, location, and weather conditions).</p> <p>Tree removal activities should be conducted outside of the nesting bird season. If trees are to be removed during the nesting season, the trees and surrounding area shall be surveyed following the provisions listed below.</p> <p><b>Survey Requirements.</b> If work is scheduled to occur during the avian nesting season, nesting bird surveys shall be conducted according to the following provisions:</p> <ul style="list-style-type: none"> <li>• Surveys shall occur within 7 days prior to the start of ground-disturbing construction or vegetation trimming or removal activities. If there is no work in an area for 7 days, it shall be considered a new work area if construction or vegetation trimming or removal begins again.</li> <li>• Surveys shall be conducted with sufficient survey duration and intensity of efforts necessary for the identification of active nests (including nests of protected species) within trees identified for removal and/or pruning , and within a 500 foot buffer; surveys for tree pruning or removal work are to be completed within 48 hours of work beginning</li> <li>• Surveys shall be conducted during locally appropriate dates for nesting seasons; note that generally the season is between February 15th and August 31st but may be earlier or later depending on species, location, and weather conditions</li> <li>• The surveys shall be conducted by a CPUC approved, qualified biologist;</li> <li>• Provisions for addressing nesting bald eagles, including a 0.5-mile survey area to be implemented within areas with suitable habitat for nesting bald eagles</li> <li>• Survey results shall be made available to the CPUC</li> </ul>	<p>Verify that surveys are conducted prior to conducting work in areas with potential for nesting birds.</p> <p>Verify that buffers are established, reduced buffers are approved, and that all buffers are maintained during construction.</p> <p>Review reports to ensure that measure was implemented.</p>	<p>Prior to and during construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<ul style="list-style-type: none"> <li>Work areas within which significant noise is not generated, such as work performed manually, by hand or on foot and/or that would not cause significant disturbances to nesting birds (e.g., operating switches, driving on access roads, normally occurring activities at substations, staging and laydown areas) do not need to be surveyed prior to use. None of these activities shall result in physical contact with a nest.</li> </ul> <p><b>Avoid impacts on nesting birds.</b> During the nesting season (generally between February 15th and August 31st but may be earlier or later depending on species, location, and weather conditions) trees with raptor nests that fall within a 500 feet buffer from a work location, shall be evaluated by a CPUC-approved, qualified biologist to determine, whether the raptor nest is "active". No trees with active raptor nests shall be removed during nesting season.</p> <p>No additional measures shall be implemented if active nests are more than the following distances from the nearest work areas: a) 500 feet for raptors, or (b) 250 feet for passerine birds in rural areas (c) 50 feet for common (non-special status) passerine birds in residential, commercial, and industrial areas. Buffers shall not apply to construction-related traffic using existing roads where the use of such roads is not limited to project-specific use (i.e., county roads, highways, farm or other private roads).</p> <p>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. An example of an exclusion technique is covering equipment with tarps.</p> <p><b>Buffer reduction.</b> The specified buffer sizes for birds may be reduced on a case-by-case basis if, based on compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity, level of pre-existing disturbance on site), it is determined by a CPUC-approved, qualified biologist that implementation of a specified smaller buffer distance shall still avoid project-related "take" (as defined by Fish and Game Code Section 86). Requests to reduce standard buffers must be submitted to the CPUC's independent biologist(s) for review. Requests to reduce buffers must include: species, location, pre-existing conditions present on-site, description</p>		



4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>of the work to be conducted within the reduced buffer, size and expected duration of proposed buffer reduction, reason for the buffer reduction, the name and contact information of the CPUC approved, qualified biologist(s) who request the buffer reduction and shall conduct subsequent monitoring, and the proposed frequency and methods of monitoring necessary for the nest given the type of bird and surrounding conditions. The CPUC's independent biologist shall respond to PG&amp;E's request for a buffer reduction (and buffer reduction terms) within one business day; if a response is not received, PG&amp;E can proceed with the buffer reduction, until the CPUC's independent biologist can review and approve the buffer reduction request.</p> <p>Non-special status species found building nests within the work areas after specific project activities begin, may be tolerant of that specific project activity; however, the CPUC approved, qualified biologist shall implement an appropriate buffer or other appropriate measures to protect the nest, after taking into consideration the position of the nest, the bird species nesting on site, the type of work to be conducted and duration of the construction disturbance. In these cases, the proposed buffer or other measures must be approved by the CPUC's independent biologist through the buffer reduction process outlined in this measure, if buffers are less than those specified in this measure. These nests shall be monitored on a daily basis and only during construction activities (no monitoring required over weekends or periods when no work is conducted) by a CPUC-approved, qualified biologist until the CPUC-approved, qualified biologist has determined that the young have fledged, or construction ends within the work area (whichever occurs first). If the CPUC-approved, qualified biologist determines that the nesting bird(s) are not tolerant of project activity, the buffer outlined above in this measure shall be implemented.</p> <p>If nesting birds show signs of intolerance to construction activities within a reduced buffer zone, the CPUC-approved, qualified biologist shall reinstate the recommended buffers. The recommended buffers may only be reduced again following the same process, as identified above, and after the CPUC-approved, qualified biologist has determined that the nesting birds are no longer exhibiting signs of intolerance to construction activities.</p>		

#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p><b>Monitoring and reporting.</b> All nests with a reduced buffer shall be monitored on a daily basis during construction activities by a CPUC-approved, qualified biologist until the CPUC approved, qualified biologist has determined that the young have fledged, or construction ends within the reduced buffer/work area (whichever occurs first).</p> <p>Nest locations and exclusion buffers shall be mapped (using GIS) for all nests identified. This information shall be maintained in a database and shall be provided to the CPUC. A monthly written report shall be submitted to the CPUC for construction within a reduced buffer and shall include the following: information included in buffer reduction requests, work conducted within the work site, duration of work activities and related buffer reduction, information on nest success (eggs, young and adults). No avian reporting shall be required for construction occurring outside of the nesting season and if construction activities do not occur within a reduced buffer during any calendar month. A final report shall be submitted to the CPUC at the end of each nesting season summarizing all avian related monitoring results and outcomes for the duration of project construction. Nests located in areas of existing human presence and disturbance, such as in yards of private residences, or within commercial and or industrial properties are likely acclimated to disturbance and do not need to be monitored, as determined by the CPUC approved, qualified biologist and approved by the CPUC’s independent biologist.</p>		
<b><i>Nesting Bald and Golden Eagles</i></b>	<p><b>Mitigation Measure Biology-12: Nesting Bald and Golden Eagles (Supersedes APMs BIO-12 and 12A).</b> Construction activities are anticipated to occur during the nesting season for bald and golden eagles (eagles) (generally from January 15 through August 31). A CPUC approved, qualified biologist shall conduct nesting bird preconstruction surveys, as defined in Mitigation Measure Biology-12, for all construction activities that shall occur during the nesting season and within 0.5 mile of known eagle nest locations. Surveys shall be conducted for a distance of 0.5 mile from all project work areas (including staging areas, pull sites, and areas where access road improvements and/or ground disturbance is required). The frequency of the surveys and monitoring shall follow USFWS and CDFW recommendations and protocols (e.g. USFWS Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations [Pagel et al. 2010] and CDFW Bald Eagle breeding and nesting survey instructions) and shall take into consideration landscape</p>	<p>Verify that surveys are conducted prior to conducting work in areas with potential for bald and golden eagle nesting.</p> <p>Verify that buffers are established, reduced buffers are approved, and that all buffers are maintained during construction.</p> <p>Verify that helicopter use does not occur within 0.5 miles of active nests.</p>	Prior to and during construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>characteristics, nest location and visibility, and status of the nest. Helicopters may be used to conduct aerial surveys to document nests up to 0.5 mile from project work areas; otherwise, surveys can be conducted from observation points within construction right-of-ways and publicly accessible lands where PG&amp;E has access rights. Where physical access to an area is unavailable, alternate, appropriate survey techniques should be used to compensate for limited physical access. Helicopter surveys, if needed, shall be appropriately scheduled to occur during different phases of the eagle nesting season and follow-up terrestrial surveys shall be conducted of nests observed by aerial survey, if needed, where accessible and in accordance with the instructions provided by USFWS/CDFW published guidance documents and instructions. Subsequent follow up surveys shall be conducted (if needed) to check on the status of each nest.</p> <p>If no active eagle nests are detected, no additional measures are required. If active bald or golden eagle nests are detected in areas exposed to urban-related disturbances (e.g. air, vehicle, and pedestrian traffic, loud community events, parks, agricultural or farm lands in which farm equipment is generally operated, industrial settings), a 0.25 mile buffer shall be established around the nest. At the discretion of the CPUC-approved qualified biologist, the buffer area may be increased around active eagle nests detected in more rural or undisturbed environments.</p> <p>Buffer reductions for work within 0.25 miles of a bald or golden eagle nest shall follow the requirements identified in Mitigation Measure Biology-12; however, buffer reductions for bald and golden eagles must also be approved by CDFW and/or USFWS. If construction activities are approved by CPUC, CDFW and USFWS to be conducted within a reduced buffer, monitoring of active eagle nests shall take into considerations aspects such as landscape characteristics, nest location, and visibility of the nest and shall follow guidance and instructions provided by USFWS/CDFW published guidance documents and instructions. Per Mitigation Measure Biology-12, monitoring requirements shall be submitted with the buffer reduction request.</p> <p>Use of helicopters shall be limited, to the extent practicable, to trips necessary to deliver, install and/or remove towers, poles, conductor, and tower/pole related equipment. Helicopter flight paths shall be developed to minimize and avoid impacts to eagle nests identified during project preconstruction surveys</p>		

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	and shall not occur within 0.5 miles of an active eagle nests unless the nest occurs within less than 0.5 miles from planned and regularly occurring helicopter flight paths from the existing airport. If the active nest occurs within 0.5 miles of a planned and regularly used flight path from the existing airport, PG&E shall coordinate with local air traffic controllers to either use existing flight paths and/or adjust flight paths to a route that is consistent with all project requirements and avoids impacts to the nesting bald eagles; the CPUC shall be notified when this occurs.		
<i>White-tailed Kite</i>	<b>Mitigation Measure Biology-13: White Tailed Kite.</b> A qualified biologist shall conduct pre-construction surveys for white tailed kite within ¼ mile of project construction activities, within 7 days of the start of construction. Surveys can be conducted from observation points within construction right-of-ways and publically accessible lands where PG&E has access rights. Where physical access to the entire survey area is unavailable, alternate, appropriate survey techniques shall be used to compensate for limited physical access. If any construction activities are planned during the nesting season (for this species approximately February 1 through August 31), avoidance measures shall include a no-construction buffer zone of a minimum distance of ¼ mile. If occupied nests are closer than this distance to the nearest work site, consultation with CPUC and CDFW shall be required to discuss how to implement the project and species avoidance measures to avoid “take.”	Verify that surveys are conducted prior to conducting work in areas with potential for nesting birds.  Verify that buffers are established and maintained during construction or else CDFW and CPUC are contacted.	Prior to and during construction
<i>Bats</i>	<b>Mitigation Measure Biology-14. Avoidance of Roosting Bats (Supersedes APM BIO-15). Work Areas.</b> Suitable bat habitat shall be assessed by a CPUC-approved, qualified biologist, in trees within a 50-foot buffer of active work areas, and in structures with suitable bat habitat within a 100-foot buffer of active work areas. If roosting habitat is found in a tree or structure, the CPUC-approved, qualified biologist shall define an appropriate limited or no work exclusion area surrounding the roosting habitat based on the bat species, numbers, and roost type (i.e., individuals, small group, potential maternal colony) as well as in consideration of the habitat quality and duration of work related disturbance. The limited work or exclusion areas shall be approved by the CPUC’s independent biologist who shall respond to PG&E’s request for approval within one business day; if a response is not received, PG&E can proceed with the implementation of the proposed limited work or exclusion	Verify that appropriate surveys by a qualified biologist are conducted for bat roosting habitat near work areas and trees for removal.  Verify that limited work or exclusion areas are established and maintained.  Verify that tree trimming occurs in accordance with the provisions of the measure in areas of potential bat roosting habitat.	Prior to and during construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>area, until the CPUC’s independent biologist can review and approve the buffer reduction request.</p> <p>The limited work or exclusion area shall not apply to construction-related traffic using existing roads where the use of such roads is not limited to project-specific use (i.e., county roads, highways, farm or other private roads, etc.) and does not apply if the roost(s) is/are located in a residential, commercial or industrial area</p> <p>The boundaries of the limited or no work area shall be clearly marked by the CPUC approved, qualified biologist to ensure that no vehicles or equipment physically disturb the roost. The CPUC approved, qualified biologist shall inspect roost sites when construction is occurring at the specific work site, to ensure integrity of the limited or no work area, and ensure that the size of the area is adequate based on site conditions and construction generated noise.</p> <p><b>Tree Pruning and Removal.</b> Pre-construction habitat assessments shall be conducted by a CPUC-approved, qualified biologist on all trees to be removed that are 10 inches or above in diameter at breast height (dbh) to identify suitable roosting habitat, within seven (7) days of the tree removal date.</p> <p>For trees to be removed that provide suitable roosting habitat features, follow-up emergence surveys and acoustic monitoring shall be conducted for one half hour prior to sunset and one hour after sunset. If bats are not detected emerging from trees and acoustic activity indicates that no roosting bats are present, no additional measures are required.</p> <p>If bats are detected emerging from trees or acoustic activity indicates that roosting bats are present, the potential presence of a maternal colony shall be assessed. If a maternal colony is found in a tree, no work shall occur within 50 feet of the tree.</p> <p>Suitable roost trees shall be removed, to the extent practicable, outside of April to September to avoid impacts to reproductive bats. If vegetation-removal activities shall be conducted during the bat reproductive season the</p>	<p>Review reports to ensure that measure was implemented.</p>	

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>following techniques shall be implemented to passively vacate bats from roosts:</p> <ul style="list-style-type: none"> <li>• Trim off all limbs without roost features to alter the air flow and temperature around the roost feature thus encouraging bats to vacate roost features on their own. The tree shall then be left for about 24 hours to allow for the bats to move to another roost site.</li> <li>• Create noise and vibration disturbance on the tree (e.g., concussive hitting with equipment and/or chainsaw cutting) for at least 15 minutes before carefully opening up potential crevices and cavities for inspection and clearance.</li> <li>• If bats may be in a tree bole or heavy branch cavity, attempt to expose them and allow escape. For example, if the cavity cannot be investigated by the CPUC approved, qualified biologist, then carefully cut successive sections above the cavity to open it, waiting up to 10 minutes in between each cut, and determine if it is empty or allow any bats inside to crawl or fly out.</li> </ul> <p><b>Reporting.</b> All bat roosts in trees will be documented and reported through the Mitigation Monitoring, Compliance and Reporting Program (MMCRP).</p>		
<i>Dusky-footed Woodrat</i>	<p><b>Mitigation Measure Biology-15: Avoidance and Minimization of Impacts to San Francisco Dusky-footed Woodrat (Supersedes APM BIO-16).</b> A CPUC approved, qualified biologist shall conduct a pre-construction survey to identify potential San Francisco dusky-footed woodrat houses within the proposed project work areas and within 5 feet of the edge of the work areas in order to avoid direct take of woodrats. Woodrat houses found within the work site or within 5 feet from a work site shall be flagged or fenced for avoidance. If impacts to a woodrat house located within a work site are unavoidable, a CPUC-approved, qualified biologist, prior to construction and outside of breeding season (April through June), shall dismantle the house by hand, removing the materials layer by layer to allow for adult woodrats to escape. If young are present and found during the disassembling process, a CPUC-approved, qualified biologist shall leave the site for at least 24 hours to allow for the rats to relocate their young on their own. This step shall be repeated as needed until the young have been relocated by the parent woodrats. Once the nest is vacant, the disassembly process shall be</p>	<p>Verify that appropriate surveys by a qualified biologist are conducted for dusky-footed woodrat houses.</p> <p>Verify that houses identified are flagged and avoided if possible, or else dismantled in accordance with the provisions of the measure.</p>	<p>Prior to and during construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	completed and the nest sticks shall be collected and moved to another suitable close-by location to allow for nest reconstruction. Piles of cut vegetation/slash shall be retained near the work site prior to nest dismantling, to provide refuge for woodrats that may become displaced (Lee and Tietje 2005).		
<i>Coastal Scrub</i>	<p><b>Mitigation Measure Biology-16: Avoidance and Minimization of Impacts to Coastal Scrub (Supersedes APM BIO-22).</b> Before construction begins, the boundaries of coastal scrub located within work areas shall be delineated with clearly visible flagging or fencing, or otherwise marked for avoidance. The flagging, fencing, and/or other marking shall be maintained in place for the duration of construction at each location until work is completed at that site, and these areas shall be avoided. If any coastal scrub habitat cannot be avoided, the CPUC-approved, qualified biologist shall conduct a pre-activity survey to ensure no listed or protected species are present and shall then provide guidance to the crew concerning additional measures that may be required to conduct the work. Impacts and disturbance to coastal scrub occurring as a result of work activities shall be documented and addressed through the implementation of the Revegetation, Restoration, and Monitoring Plan.</p> <p>Coastal scrub habitat areas that are permanently disturbed by the project shall be replaced off-site with new habitat at a 2:1 ratio by funding one or more recognized and County approved re-vegetation/restoration organizations. Alternatively, the losses of Coastal scrub shall be compensated for by enhancement of existing habitat (e.g., through removal of non-native species from existing coastal scrub habitat) at a 3:1 ratio within suitable habitat on properties for which PG&amp;E can obtain property owner consent and within suitable habitat on PG&amp;E's properties in the area(e.g. Rob Roy Substation). PG&amp;E shall begin the removal of non-native and invasive species from PG&amp;E suitable habitat in the 1 or 2 years prior to construction commencement to initiate the enhancement efforts. These efforts shall then continue together with regular monitoring until non-native and invasive species have been reduced by 70% from initial conditions, up to a maximum period of 2 years following the end of construction activities. If non-native and invasive species removal efforts have not met the success criteria of 70%</p>	<p>Verify that the boundaries of impacted coastal scrub are identified and delineated.</p> <p>Verify that the areas are avoided or else surveyed for special status species and impacts addressed in the Revegetation, Restoration, and Monitoring Plan.</p> <p>Verify that restoration is implemented and monitored in accordance with the provisions of the measure.</p>	<p>Prior to, during, and after construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	reduction by the end of the two year monitoring period, PG&E shall coordinate with CPUC and the County to determine alternative measures (e.g., development of educational materials/programs, signage, etc.). Coastal scrub areas within suitable upland habitat for the Santa Cruz long-toed salamander that support burrows and are located outside of a previously identified and fenced work area shall not be disturbed during construction activities.		
<i>Special Status and General Wildlife</i>	<p><b>Mitigation Measure Biology-17: Protection and Inspection of Open Excavations for Entrapped Wildlife (Supersedes APM BIO-17).</b> Excavations that may act as pitfall traps (i.e., those exceeding 6 inches in depth) shall be secured in one of the following ways to ensure that animals do not become entrapped:</p> <ul style="list-style-type: none"> <li>• Covers may be used to completely cover exposed holes; Covers shall be strong enough to prevent wildlife from falling into the excavations and shall be secured to prevent burrowing underneath the covers.</li> <li>• Fencing may be used; in biologically sensitive areas, the fences around excavations shall provide one way passage for small animals to exit the immediate work area</li> <li>• Escape ramps may be used for excavations greater than 6 inches in depth</li> <li>• Existing pole excavations shall be inspected before they are filled to ensure the absence of wildlife.</li> </ul> <p>If a special-status species is located in the excavation and cannot escape, the CPUC approved, qualified biologist shall safely stop all construction activities in the immediate work area. The PG&amp;E Project Biologist shall contact CDFW and/or USFWS (as appropriate, depending on the species' listing status) and PG&amp;E shall comply with the recommendations provided by the resource agencies. If guidance from the resource agency cannot be obtained immediately, the CPUC approved, qualified biologist shall ensure that the species does not suffer any distress by implementing measures such as:</p> <ul style="list-style-type: none"> <li>• Provide appropriate shade coverage</li> <li>• Protect from/avoid sun and heat exposure</li> <li>• Avoid the generation of human related disturbance within proximity to the species location</li> </ul>	<p>Verify that construction excavations are covered daily, fenced, or a ramp is installed to avoid entrapment of wildlife</p> <p>Verify that special status species are not harmed and that the CDFW or USFWS is contacted, as appropriate.</p>	During construction



#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<ul style="list-style-type: none"> <li>• Protect from possible predation</li> <li>• For amphibians - provide a moist environment through the use of wet sponges or locally found wet moss</li> </ul>		
<b>Cultural Resources</b>			
<i>Known and Previously Undiscovered Cultural Resources</i>	<b>APM CUL-01: Personnel Training.</b> Prior to construction, all PG&E, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and mitigation measures and to comply with the applicable environmental laws and regulations, including the potential for exposing subsurface cultural resources and paleontological resources and how to recognize possible buried resources. This training will include a presentation of the procedures to be followed upon discovery or suspected discovery of archaeological materials, including Native American remains and their treatment, as well as of paleontological resources.	Verify training through inspection of training log.  Spot check workers on site for sticker showing completion of training.	Prior to and during construction
<i>Known Cultural Resources</i>	<b>Mitigation Measure Cultural Resources-1:</b> Prior to commencement of construction, the limits of the project work areas within 165 feet (50 meters) of any known potentially eligible resources (sites HR-3 [Kliewer barns], HR-5 [1909 single-family home], HR-12 [Corralitos Road Italianate home], HR-14 [Apple barn], and HR-15 [Day Valley Cemetery]) shall be marked with visible flagging tape or equivalent. 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.	Review cultural resources report to identify listed resources.  Verify that sensitive resource areas have been flagged prior to activities beginning near resources	Prior to and during construction
<i>Previously Undiscovered Cultural Resources</i>	<b>Mitigation Measure Cultural Resources-2:</b> Prior to commencement of construction within any project area, the appropriate PG&E personnel shall compare areas of proposed ground disturbance with the project GIS layers that show cultural resource survey areas. PG&E shall verify that proposed ground disturbance areas have been surveyed for cultural resources. If the areas of proposed ground disturbance have been surveyed (and no known resources are located in the area), then no additional measures are required and the work may commence.	Review cultural resources maps against planned areas of activities to ensure that area has been surveyed for cultural resources. Verify that cultural resource specialist/ archaeologist/historian has evaluated any found resources	Prior to construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>If the areas have not been surveyed, no ground disturbance shall be permitted prior to completion of surveys by a CPUC-approved, qualified cultural resource specialist/archaeologist or historian. If a resource is found, it shall be evaluated by the qualified cultural resource specialist/archaeologist or historian to determine whether it is (1) eligible for the CRHR (and thus an historical resource for purposes of CEQA); or (2) a unique archaeological resource as defined by CEQA. If the resource is determined to be neither a unique archaeological nor an historical resource, work may commence in the area. If the resource meets the criteria for either an historical or unique archaeological resource, or both, work shall remain halted, and the cultural resource specialist/archaeologist or historian shall consult with CPUC staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). Preservation in place, i.e. avoidance, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. If any found resources can be completely avoided, then evaluation of the resource is not required, subject to approval by CPUC. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the CPUC-approved, qualified cultural resource specialist/archaeologist or historian. The methods and results of evaluation or data recovery work at an archaeological or historic find shall be documented in a professional level technical report to be filed with CHRIS. Work may commence upon completion of treatment, as approved by the CPUC.</p>	<p>and that his/her recommendations have been followed for preventing a substantial adverse change to the significance of the resource. Verify that a report has been prepared and filed with CHRIS if a resource is found.</p>	
<p><i>Previously Undiscovered Cultural Resources</i></p>	<p><b>Mitigation Measure Cultural Resources-3:</b> In the unlikely event that a previously unidentified buried archaeological resource is uncovered during implementation of the project, all work within 165 feet (50 meters) of the discovery shall be halted. A CPUC-approved, qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, the CPUC-approved cultural resource</p>	<p>Verify halt of construction activities and appropriate notification of agencies through documentation and on-site observations. Verify submittal of paperwork to California State Department of Parks if resource can be avoided. Verify evaluation of resource if resource cannot be avoided.</p>	<p>During construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>specialist/archaeologist shall evaluate the resource and determine whether it is (1) eligible for the CRHR (and thus a historical resource for purposes of CEQA); or (2) a unique archaeological resource as defined by CEQA. If the resource is determined to be neither a unique archaeological nor an historical resource, work may commence in the area. If the resource is meets the criteria for either an historical or unique archaeological resource, or both, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with CPUC staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). Preservation in place, i.e. avoidance, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Work Management Plan prepared by the CPUC approved qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with CHRIS. Work may commence upon completion of treatment, as approved by the CPUC.</p>	<p>Verify preparation of Cultural Resource Management Plan through inspection of documentation, and verify with cultural resource specialist/archaeologist that the plan was carried out and that the technical report was prepared and filed with CHRIS.</p>	
<p><i>Previously Undiscovered Paleontological Resources</i></p>	<p><b>Mitigation Measure Paleontology-1:</b> In the unlikely event that a previously unidentified paleontological resource is uncovered during implementation of the project, all ground disturbing work within 165 feet (50 meters) of the discovery shall be halted. A CPUC-approved, qualified paleontologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified, CPUC-approved paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA, Appendix G, part V. If the resource is determined to not be unique, work may commence in the area. If the resource is determined to be a unique paleontological resource, work shall remain halted, and the paleontologist shall consult with the property owner and CPUC staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation in place, i.e. avoidance, is the preferred method of mitigation for impacts to paleontological resources and</p>	<p>Verify that construction activities have stopped if a resource is uncovered. If the resource cannot be avoided, verify with the paleontologist that the protocol has been followed.</p>	<p>During construction</p>

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	shall be required unless there are other equally effective methods. Other methods, with the permission of the property owner, include ensuring that the fossils are recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. All recovered fossils shall be curated at an accredited and permanent scientific institution according to Society of Vertebrate Paleontology standard guidelines (SVP [1991, 1995, 2005]) standards; typically the Natural History Museum of Los Angeles County and UC Berkeley accept paleontological collections at no cost to the donor. Work may commence upon completion of treatment, as approved by the CPUC.		
<b>Geology and Soils</b>			
<i>Slope Failure</i>	<p><b>Mitigation Measure Geology-1:</b> PG&amp;E shall have a professional geotechnical engineer conduct a geotechnical investigation in areas that are suspected to have unstable soils or landslide susceptibility, be underlain by a fault, or that could be subject to strong ground shaking and ground failure. PG&amp;E shall implement the recommendations and findings in the geotechnical report in the project's final design to minimize the effects of expansive soils, differential settling, fault rupture, strong ground shaking, ground failure, and loose and unstable soils.</p> <p>Where slope failure could occur, design features, such as engineered subgrades and reinforced foundations, over-excavating soft or loose soils and replacing them with engineered backfill materials, increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction, treating soft or loose soils in place with binding or cementing agents, and avoiding areas of unstable soils shall be incorporated into the project's design. PG&amp;E shall comply with all applicable codes and seismic standards.</p>	Verify that geotechnical report has been prepared through inspection of documentation. Verify that geotechnical report contains recommendations related to the geologic hazards if such hazards have been identified.	Prior to construction

#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Slope Failure</i>	<b>Mitigation Measure Geology-2:</b> During pole installation activities on hilly terrain, construction slopes and existing natural slopes impacted by construction operations shall be evaluated for stability. In developing grading plans and construction procedures for re-establishing and widening access roads and replacing power poles, slope stability shall be analyzed. Construction slopes and grading plans shall be designed to limit the potential for slope instability and erosion during construction. Construction activities likely to result in slope instability shall be suspended, as necessary, during and immediately following periods of heavy precipitation when unstable slopes are more susceptible to failure unless adequate best management practices can be implemented, as detailed in the SWPPP.	Verify that grading plans take into account slope stability through inspection of documentation.  Verify that construction activities with the potential to disturb slopes do not take place during or immediately after heavy precipitation unless SWPPP measures are implemented.	Prior to and during construction
<b>Hazards and Hazardous Materials</b>			
<i>Accidental Spill</i>	<b>APM HAZ-02: Spill Prevention Control and Countermeasure Plan Update.</b> PG&E will update the existing SPCC Plan for Rob Roy Substation and ensure compliance with applicable standards by incorporating the design, control, training, containment, and response requirements for the increased amounts of hydrocarbon and oil storage that will be located at the modified substation, so that hazardous materials will not encounter the soil.	Verify through inspection of Rob Roy Substation SPCC plan to verify that it has been updated.  Verify through field inspection the implementation of SPCC measures.	Prior to and during construction
<i>Fire Hazards</i>	<b>APM HAZ-03: Smoking and Fire Rules.</b> Smoking will not be permitted during fire season, except in a barren area that is cleared to mineral soil at least 10 feet in diameter or within vehicles or enclosed equipment cabs. Under no circumstances will smoking be permitted during fire season while employees are operating light or heavy equipment, or while walking or working in grass and woodlands.	Verify through field checks that smoking occurs only in designated areas.	During construction
<i>Fire Hazards</i>	<b>APM HAZ-04: Carry Emergency Fire Suppression Equipment.</b> PG&E construction crew trucks and equipment will have at a minimum a standard round point shovel and a fire extinguisher. If construction activities likely to cause sparks—(e.g., welding, grinding, or grading in rocky terrain—) are conducted, emergency fire tool boxes will be readily available to crews. The tool boxes will contain fire-fighting firefighting items such as shovels, axes, and water.	Verify through spot field checks that crew trucks and equipment are outfitted with fire suppression equipment.	During construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Accidental Spill</i>	<p><b>Mitigation Measure Hazards-1:</b> An Environmental Training and Monitoring Program (ETMP) shall be established to communicate to all field personnel any environmental concerns and appropriate work practices, including spill prevention and response measures and Best Management Practices (BMP). The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest water bodies) and shall include a review of all site-specific plans.</p> <p>A PG&amp;E-designated representative shall be identified to ensure that the plans are followed throughout the construction period. BMPs identified in the project SWPPP shall be implemented during project construction to minimize the risk of an accidental release and to provide the necessary information for emergency response. A copy of the ETMP shall be submitted to the California Public Utilities Commission (CPUC) at least 30 days prior to construction. Training attendance sheet(s) shall be submitted to the CPUC on a monthly basis</p>	<p>Verify that the ETMP has been developed at least 30 days prior to construction.</p> <p>Verify monthly the training attendance sheets. Spot check in the field that workers have taken the training</p>	Prior to and during construction
<i>Hazardous Material Exposure</i>	<p><b>Mitigation Measure Hazards-2:</b> PG&amp;E shall prepare and incorporate methods and techniques to minimize the exposure of the public to potentially hazardous materials during all phases of project construction through operation into a Hazardous Substance Control and Emergency Response Plan (HSCERP) as part of the project-specific SWPPP and submit the SWPPP to CPUC for recordkeeping at least 30 days prior to project construction. The HSCERP measures shall require implementation of appropriate control methods and approved containment and spill control practices for construction and on-site material storage. All hazardous materials and hazardous wastes shall be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. With the exception of wood poles, the plan shall specify that all hazardous materials shall be collected in project-specific containers and transported to a PG&amp;E service center designated as a PG&amp;E consolidation site. Wood poles shall be transported off site once removed from the ground and temporarily stored in project-specific containers at a PG&amp;E facility. As containers are filled, poles shall be transported to an appropriate licensed Class I landfill or the composite-lined portion of a solid waste landfill.</p>	<p>Verify that HSCERP has been prepared at least 30 days prior to project construction.</p> <p>Spot check through field inspection that HSCERP measures are being implemented.</p>	Prior to and during construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>The HSCERP measures shall also include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>• Proper disposal of potentially contaminated soils</li> <li>• Vehicles and equipment parking near sensitive resource areas during construction</li> <li>• Emergency response and reporting procedures to address hazardous material releases</li> </ul> <p>The measures shall specify that emergency spill supplies and equipment shall be available to respond in a timely manner if an incident should occur. Response materials such as oil-absorbent material, tarps, and storage drums shall be used as needed to contain and control any minor releases.</p>		
<b>Hazardous Material Exposure</b>	<p><b>Mitigation Measure Hazards-3:</b> PG&amp;E shall provide a Health and Safety Plan (HSP) to ensure that potential safety hazards are minimized. The HSP shall include elements that establish worker training and emergency response procedures relevant to project activities. The plan shall be submitted to CPUC at least 30 days prior to construction for CPUC recordkeeping</p>	Verify that the HSP has been prepared at least 30 days prior to construction.	Prior to construction
<b>Hydrology and Water Quality</b>			
<b>Erosion and Sedimentation</b>	<p><b>APM HYD-0: Implementation of a SWPPP.</b> PG&amp;E will file a Notice of Intent with the State Water Resources Control Board for coverage under the General Construction Storm Water Permit and will prepare and implement a SWPPP in accordance with General Order No. 2009-0009-DWQ. Implementation of the SWPPP will help stabilize graded areas and waterways and reduce erosion and sedimentation. The following measures are generally drawn from that permit and PG&amp;E's standard practices, and will be included in the SWPPP prepared for the construction of the project:</p> <ol style="list-style-type: none"> <li>1. All Best Management Practices (BMPs) will be on-site and ready for installation before the start of construction activities.</li> </ol>	<p>Verify through document inspection that PG&amp;E has submitted the NOI.</p> <p>Verify implementation of measures through field spot checks.</p>	Prior to and during construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
	<p>2. BMPs will be developed to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction. All materials shall be certified weed-free; Examples of BMPs include, but are not limited to, the following measures. The appropriate measures will be applied depending on specific site conditions.</p> <ul style="list-style-type: none"> <li>• Straw wattles, water bars, covers, silt fences, coir logs, sensitive area access restrictions (e.g., flagging), or other sediment containment methods placed around and/or down slope of work areas prior to earth disturbing activities and before the onset of winter rains or any anticipated storm events.</li> <li>• Mulching, seeding, or other suitable measures to protect exposed areas during construction activities as necessary;</li> <li>• Installation of additional silt fencing prior to construction to address unforeseen runoff into nearby wetlands and drainages;</li> <li>• Use of brooms and shovels (as opposed to water) when possible to maintain a clean site;</li> <li>• Construction of a stabilized construction entrance/exit to prevent tracking of dirt onto public roadways;</li> <li>• Establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids;</li> <li>• No overnight parking of mobile equipment within 100 feet of wetlands, culverts, or drainages; and</li> <li>• Positioning stationary equipment (e.g., pumps, generators, etc.) used or stored within 100 feet of wetlands, culverts, or drainages within secondary containment.</li> </ul> <p>3. All BMPs will be inspected before and after each storm event. BMPs will be maintained on a regular basis, and replaced as necessary throughout the course of construction.</p> <p>A Qualified SWPPP Practitioner will supervise placement of silt fencing to limit the area of disturbance. The silt fence will be monitored regularly to ensure effectiveness.</p>		



#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<b>Noise</b>			
<i>Sensitive Noise Receptors</i>	<p><b>Mitigation Measure Noise-1:</b> When construction activities are located within 50 feet of residences, a temporary noise barrier shall be placed between the residences and any noise-generating equipment that cannot move under its own power while in use. The barrier shall be installed within 3 feet of the noise source and shall be approximately 3 feet taller than the piece(s) of equipment. The distance between the barrier and the equipment may be adjusted to ensure safe equipment operation. The type of barrier used shall depend on the noise source, but should be installed without cracks or gaps in the face or large or continuous gaps at the base and have a minimum surface weight of 1.0 lb. per sq. ft. The barriers may be constructed using one or more of the following:</p> <ol style="list-style-type: none"> <li>1. Stacked hay bales</li> <li>2. Standing 0.75-inch-thick plywood or other solid sheet materials with equivalent surface mass.</li> <li>3. Noise-attenuating construction blanket type barrier materials secured to a cyclone fence or hung off of guy wires or other frame.</li> </ol> <p>Barriers shall be removed at the end of noise-generating activities at each location.</p>	Verify use of noise barriers when construction activities are located within 50 feet of residences.	During construction
<i>Sensitive Noise Receptors</i>	<p><b>APM NOI-01: Equipment Location and Orientation.</b> Equipment will be positioned to maximize the distance from residences and to maintain safe and effective operation.</p>	Verify that construction equipment is not positioned near residences.	During construction
<i>Sensitive Noise Receptors</i>	<p><b>APM NOI-02: Equipment Maintenance and Mufflers.</b> All internal combustion engine-driven equipment will be equipped with exhaust mufflers that are in good condition and that meet or exceed the manufacturers' specifications. All equipment will be maintained and tuned according to manufacturers' recommendations.</p>	Verify with spot checks in the field that equipment is kept in good working order.	During construction
<i>Sensitive Noise Receptors</i>	<p><b>APM NOI-05: Restrict Helicopter Flight Paths.</b> Helicopters will maintain a height of at least 500 feet when passing above residential areas, except when they are at temporary construction areas or actively assisting with the stringing of conductor or other project activities. Helicopters will maintain a lateral distance of at least 500 feet from schools when in session.</p>	Verify that helicopter flight paths comply with distance requirements.	During construction

#### 4: Mitigation Monitoring Plan

Table 4.1-1 ( <i>Continued</i> ): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Sensitive Noise Receptors</i>	<b>Mitigation Measure Cumulative-1:</b> PG&E shall coordinate with any other construction projects being constructed within a 1,500 foot radius if noise impacts at sensitive receptors in the area would exceed an 8-hour $L_{eq}$ of 80 dBA. Noise shall be calculated by PG&E staff based on standard equipment noise generation tables as presented in the IS/MND and the calculations approved by CPUC. For work to proceed as approved by CPUC it must be demonstrated that cumulative noise levels are less than 80 dBA.	If other projects are occurring within 1,500 feet of the proposed project, check noise readings from PG&E staff to verify that noise is below an 8-hour $L_{eq}$ of 80 dBA at the nearest sensitive receptor.	During construction
<b>Public Services</b>			
<i>Emergency Service</i>	<b>APM PS-01: Coordinate Road Closures with Emergency Service Providers.</b> At least 24 hours prior to implementing any road or lane closure, PG&E will coordinate with applicable emergency service providers in the project vicinity, including, but not limited to, the Santa Cruz County Fire Department, Aptos/La Selva Fire Protection District, Santa Cruz County Sheriff's Office, and Watsonville Police Department. PG&E will provide emergency service providers with information regarding the road or lanes to be closed; the anticipated date, time, and duration of closures; and a contact telephone number.	Verify through inspection of documentation that PG&E has coordinated with the ESPs.	During construction
<b>Recreation</b>			
<i>Park Usage</i>	<b>Mitigation Measure Recreation-1:</b> PG&E shall coordinate with Santa Cruz County Parks Department staff at least 4 weeks in advance of construction within Pinto Lake County Park to ensure no pre-scheduled special events shall be interrupted by construction activities.	Verify that PG&E has contacted and coordinated with Santa Cruz County Parks Department four weeks prior to scheduled construction in the park.	During construction
<b>Transportation and Traffic</b>			
<i>Transportation Hazards</i>	<b>APM TRA-01: Install Reflective Bollards.</b> Reflective bollards will be installed around the base of TSP foundations to increase vehicle safety along Dalton Lane and at the corner of McDonald Road and Freedom Boulevard.	Verify installation of bollards after construction has been completed at the listed locations.	After construction

4: Mitigation Monitoring Plan

Table 4.1-1 (Continued): Mitigation Monitoring Plan			
Impact	APMs/Mitigation Measures	Monitoring Requirement	Timing of Action
<i>Alternative Transportation</i>	<p><b>APM TRA-02: Coordinate Work Within Vicinity of Bus Stop with Bus Service Providers.</b> At least 2 weeks prior to work within 1,000 feet of any Santa Cruz Metropolitan Transit District (METRO) bus stop, PG&amp;E will coordinate with the METRO to inform them of the project's potential to impact the bus stop. PG&amp;E will provide the METRO with information regarding the location of the bus stop; the anticipated date, time, and duration of construction activities; and a telephone contact number.</p>	<p>Verify through inspection of documentation that PG&amp;E has coordinated with the METRO prior to work within 1,000 feet of a METRO bus stop.</p>	<p>During construction</p>
<i>Transportation Hazards</i>	<p><b>Mitigation Measure Traffic-1:</b> PG&amp;E shall develop a project-specific Transportation Management Plan (TMP) to be implemented during construction, which shall be submitted to the CPUC for review at least 30 days prior to construction. The TMP shall conform to the California Joint Utility Traffic Control Committee's <i>Work Area Protection and Traffic Control Manual</i>. The TMP shall include the following:</p> <ul style="list-style-type: none"> <li>• Standard safety practices, including installation of appropriate barriers between work zones and transportation facilities, placement of appropriate signage, and use of traffic control devices.</li> <li>• Flaggers and/or signage shall be used to guide vehicles through or around construction zones using proper construction techniques.</li> <li>• Provision that all equipment and materials shall be stored in designated work areas in a manner that minimizes traffic obstructions and maximizes sign visibility.</li> <li>• Acceptable vehicle speeds on project roadways. Vehicle speeds shall be limited to safe levels as appropriate for all roads, including access roads and overland routes without posted speed limits.</li> <li>• Routing of trucks to avoid minor roads, where possible, to reduce congestion and potential asphalt damage.</li> <li>• No lane or road closures that would lower vehicle capacity of a road already at LOS D or lower (e.g. Airport Boulevard and Freedom Boulevard) during peak-hour traffic, or as determined through consultation with Santa Cruz County.</li> </ul> <p>Note that if encroachment permits include all of the information required in the TMP as identified in this measure, a copy of these permits may be substituted for a TMP. Encroachment permits must be provided to the CPUC 30 days prior to work in the area of the permit.</p>	<p>Verify that TMP has been prepared at least 30 days prior to construction.</p> <p>Verify through field spot checks that measures are being implemented</p>	<p>Prior to and during construction</p>

#### 4: Mitigation Monitoring Plan

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