

APPENDIX B

Table B-1 Final APMs and MMs

Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
Agriculture and Forestry Resources			
<p>MM Agriculture-1: Minimize Impacts on Active Agricultural Areas</p> <p>PG&E shall minimize disruptions to existing agriculture operations and avoid impacts on agricultural infrastructure (i.e., irrigation lines, wells, pumps, ditches, and drains). Work areas and overland access routes shall avoid active agricultural areas (i.e., farms, orchards, vineyards) and agriculture infrastructure where feasible. If necessary, and upon agreement with farmers, agricultural infrastructure shall be protected with temporary materials (i.e., steel plates, blankets, etc.) to prevent inadvertent damage during construction.</p> <p>Crop removal shall be avoided to the greatest extent feasible. If crops cannot be avoided, impacts shall be limited to the minimum necessary to construct the project, and PG&E shall provide the owner with fair market compensation to replace the crops and any damaged infrastructure.</p> <p>If grading occurs in active agricultural areas, topsoil shall be salvaged and replaced once construction is complete.</p>	Access roads and work areas within agricultural properties	<ul style="list-style-type: none"> • Before Construction: Design access roads and work areas to avoid trees and crops where feasible • During Construction: Protect irrigation lines and avoid impacts to agricultural productions where feasible • After Construction: Replace any damaged crops 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
Air Quality			
<p>APM AIR-1: Fugitive Dust Emissions</p> <p>Per BAAQMD CEQA guidelines, PG&E will implement the following fugitive dust control measures:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions. • All haul trucks transporting soil, sand, or other loose material off site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour. • Post a publicly visible sign at work areas where grading/blading and helicopter activities occur near public and residential areas with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD’s dust complaint phone number shall also be visible to ensure compliance with applicable regulations. • Helicopter LZs shall be watered prior to takeoff and landings as needed in unvegetated areas in dry conditions. 	All project areas	<ul style="list-style-type: none"> • Before Construction: Dust complaint signs are posted adequately • During Construction: (1) Exposed surfaces are watered two times a day during dry conditions, (2) Haul trucks are adequately covered, (3) Soil track out is adequately managed, (4) Vehicle speeds limits are maintained, and (5) Helicopter LZs are watered as needed prior to takeoff and landings • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM AIR-2: Exhaust Emissions</p> <p>Per BAAQMD CEQA guidelines, PG&E will implement the following exhaust emission control measures:</p> <ul style="list-style-type: none"> • Minimize unnecessary construction vehicle and equipment idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a “common sense” approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a “common sense” approach to use of diesel-powered vehicles and equipment. Clear signage shall be provided for construction workers at all access points. • Construction equipment will be properly maintained by a certified mechanic. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program will meet at a minimum the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in CCR Title 13, Chapter 9, Sec. 2423(b)(1). 	All project areas	<ul style="list-style-type: none"> • Before Construction: Brief crews regarding idling limitations • During Construction: (1) Idling of construction vehicle and equipment limited to 5 consecutive minutes to the greatest extent possible, and (2) A certified mechanic maintains construction equipment • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
Biological Resources			
<p>APM BIO-1a: Environmental Awareness Training</p>	N/A	<ul style="list-style-type: none"> • Before Construction: A copy of the training materials is provided to the CPUC at least 30 days before construction • During Construction: (1) All project personnel are trained prior to 	<ul style="list-style-type: none"> • Plans (Table C-2) – ETP Material • Worker Training (Table 2.2-1) • General Reporting (Tables 2.2-6 and 2.2-7)

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<p>PG&E will prepare and implement a Worker Environmental Awareness Program (WEAP) that includes conducting training for all construction and on-site personnel prior to working on the project site. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources (e.g., APM and MM requirements), as well as the terms and conditions of any Biological Opinion or other permits that apply to the project. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers shall be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to be affected within the project area. Training will also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project.</p> <p>A copy of the training materials shall be provided to CPUC for review and approval no less than 30 days before construction. Training logs and sign-in sheets shall be provided to CPUC monthly.</p>		<p>working on the site, and (2) The CPUC is provided with training logs and sign-in sheets monthly</p> <ul style="list-style-type: none"> • After Construction: N/A 	
<p>APM BIO-1f: Litter and Trash Management</p> <p>All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in trash containers with an adequate lid or cover to contain trash. All food waste shall be placed in a securely-covered bin and removed from the site on a weekly basis to avoid attracting animals.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Litter and trash is contained and disposed of adequately • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-1g: Parking</p> <p>Vehicles and equipment will be parked on pavement, existing roads or paved road shoulders, developed areas, or approved work areas.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Vehicle and equipment parking is limited to appropriate areas • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-1h: Access Route and Work Area Limitations</p> <p>Vehicles will be confined to public roadways and pre-approved access routes (e.g., private paved and unpaved roads, and overland routes), previously disturbed and unvegetated roadsides, and work areas. Access routes and construction work areas will be limited to the minimum necessary to achieve the project goals.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Vehicle and equipment access is limited to approved areas and access routes • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-1j: Pets and Firearms</p> <p>No pets or firearms will be permitted at the project site.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: No pets and firearms are brought to the site • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-1k: Cover Excavations</p> <p>Pole excavations shall be thoroughly covered at the end of each work day to prevent people, wildlife, or livestock from falling in. Trench excavations greater than 2 feet deep will be sloped, or have escape ramps installed that are suitable for the escape of wildlife, or be thoroughly covered at the end of the day.</p> <p>All excavations in active work areas will be inspected for wildlife at the beginning of the work day and prior to backfilling.</p> <p>If a special-status species is discovered in an excavation area, work in the area will be redirected and the special-status species shall first be allowed to leave the area of its own accord. In the event that a special-status species is trapped in an excavation and is unable to leave on its own accord, removal will be performed or overseen by a biological monitor with the applicable permits for handling of the species.</p>	All project areas where qualifying excavation occurs	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Excavations are covered, sloped, ramped, and marked appropriately, (2) Excavations are inspected for wildlife, (3) Any trapped wildlife is relocated, and (4) Any trapped special-status wildlife is relocated according to applicable USFWS and CDFW authorizations • After Construction: N/A 	<ul style="list-style-type: none"> • General Field Monitoring (Table 2.2-4) • *Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<p>APM BIO-7: California Tiger Salamander</p> <p>Unless otherwise authorized by USFWS and/or CDFW, PG&E shall implement the following procedures to protect CTS that may be present in designated critical habitat for CTS and in areas identified in the Santa Rosa Plain Conservation Strategy (SRPCS) as locations where CTS could be adversely affected:</p> <ul style="list-style-type: none"> • A qualified biologist, who is approved by USFWS and/or CDFW if required¹, shall conduct a pre-construction clearance survey of the work areas no more than 24 hours in advance of work activities that could adversely affect CTS. • If construction activities must occur during the wet season (October 15 through April 15), a qualified biologist, who is approved by USFWS and/or CDFW if required, will determine if it is appropriate to fence the perimeter of work areas located in areas. Amphibian exclusion fencing will be used. Installation of exclusion fencing will occur under the supervision of a qualified biologist. The amphibian exclusion fencing will remain in place for the duration of construction in that area during the wet season, and will be monitored regularly by environmental inspectors or biologists. Where access is necessary, gates will be installed within the exclusion fence. • Grading and vegetation clearing shall not occur where CTS could be adversely affected during the wet season. • During wet weather or the rainy season, all open holes, pits, and trenches will be protected to ensure that CTS do not become entrapped. Qualified personnel will install protective fencing, coverings, or ramps to either prevent CTS from falling into excavations or to allow for escape. At the end of each work day, trenches will be covered and/or fenced. Excavation sites will be inspected each morning, prior to the start of construction activities, to ensure that no CTS are trapped. • During the wet season or after a rain event (with greater than 0.1 inches of rainfall), construction personnel will check underneath all vehicles (i.e., tires, tracks, etc.) for the presence of CTS. • Best management practices (BMPs) shall be implemented to minimize erosion and prevent sediment from leaving work areas and entering any aquatic habitat. Monofilament netting that could entrap CTS shall not be used for any erosion-control materials. <p>PG&E may consult with USFWS and/or CDFW before beginning work in designated critical habitat for CTS and in areas identified in the SRPCS as locations where CTS could be adversely affected to determine the necessity of implementing the requirements listed above based on the habitat characteristics in the project area. Such considerations may include adjacent land uses and lack of connectivity to suitable habitat where project work areas are located.</p> <p>Any discovered CTS will be reported to the on-site biologist or to PG&E environmental staff. If a CTS is found during work activities, PG&E shall redirect work that poses a risk to the animal, as determined by a qualified biologist, and consult with USFWS and/or CDFW before resuming work in the area. CTS handling and relocation may only occur after consultation with the permitting agencies, and must be conducted by individuals with proper qualifications and agency approval.</p> <p>PG&E shall provide CPUC with any agency permits and determinations regarding CTS for the project.</p>	<p>Work areas located in designated critical habitat for CTS and in areas identified in the SRPCS as locations where CTS could be adversely affected</p>	<ul style="list-style-type: none"> • Before Construction: (1) PG&E provides CPUC with any agency permits or determinations, (2) A pre-construction clearance survey is performed, and (3) CTS exclusion fencing is installed, if and where appropriate • During Construction: PG&E implements CTS protection measures in designated habitat for CTS or areas identified in the SRPCS as locations where CTS could be adversely affected, unless otherwise authorized by USFWS and/or CDFW • After Construction: N/A 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - *USFWS and CDFW Incidental Take Permit • Surveys (Table 2.2-2) • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-8: American Badger</p> <p>A qualified biologist shall conduct a pre-activity survey for active American badger dens within 30 days prior to grading or vegetation clearing in work areas, or use of overland access routes. The pre-activity survey area shall be limited to potentially suitable habitat for American badger (e.g., grasslands and woodlands) located within 250 feet of work areas where grading or land vegetation clearing may occur and within or immediately adjacent to overland access routes. PG&E shall submit the survey results to CPUC prior to construction.</p> <p>PG&E may use cameras to determine if dens are active. If active dens are identified at any time during construction, the dens shall be flagged and avoided. A 250-foot work restriction buffer shall be established around active maternal dens. For non-maternal dens, a 50-foot work restriction buffer shall be established around active dens. Smaller buffers may be established through consultation with CDFW. If an active non-maternal den cannot be avoided, PG&E may consult with CDFW to determine if it would be appropriate to implement passive exclusion techniques, such as sealing the den after animals have vacated.</p> <p>A qualified biologist shall inspect construction activities near active American badger dens on a weekly basis to ensure the work restriction buffers are implemented appropriately and active dens are avoided.</p>	<p>Potentially suitable habitat for American badger (e.g., grasslands and woodlands) within 250 feet of work areas where grading or land vegetation clearing may occur and within or immediately adjacent to overland access routes</p>	<ul style="list-style-type: none"> • Before Construction: Pre-construction surveys are conducted for American badger dens and survey results are submitted to the CPUC • During Construction: (1) Work restriction buffers are implemented, and (2) Construction activities near active dens are monitored • After Construction: N/A 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - *CDFW determination regarding passive den exclusion • Surveys (Table 2.2-2) • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM BIO-9: Western Pond Turtle</p>	<p>All project locations within 400 feet</p>	<ul style="list-style-type: none"> • Before Construction: Pre-construction survey for western 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1)

¹ For purposes of this measure, approval “if required” means if required by USFWS or CDFW.

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<p>A survey for western pond turtle shall be performed by a qualified biologist within 24 hours prior to work within 400 feet of potentially suitable habitat (e.g., ponds, lakes, slow streams, or marshes with vegetated borders, rocks, or logs).</p> <p>A qualified biologist shall also conduct daily sweeps during the spring nesting season of work areas and access routes within 400 feet of suitable habitat for western pond turtle prior to work activities. The daily sweeps shall consist of walking the limits of construction areas and access routes to identify any pond turtles that may be present.</p> <p>Individual western pond turtles, if found in the work area during spring/nesting season, shall be relocated out of harm's way and outside of the construction area in the direction of travel, or as directed by the CDFW. Similarly, if found during hibernation movements in winter, individual western pond turtles will be relocated outside of the construction area in the direction of travel, or as directed by CDFW.</p>	<p>suitable habitat for western pond turtle</p>	<p>pond turtle is conducted within 400 feet of suitable aquatic habitat</p> <ul style="list-style-type: none"> • During Construction: (1) Daily sweeps within 400 feet of suitable habitat are conducted during the spring nesting season, and (2) Western pond turtle are relocated out of harm's way in the direction of travel • After Construction: N/A 	<ul style="list-style-type: none"> - *CDFW determination regarding relocation areas • Surveys (Table 2.2-2) • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>APM BIO-10: Tree Removal and Mitigation</p> <p>Tree removal will be minimized to what is required to implement the project. For removal of large valley oak trees greater than 20 inches dbh or small valley oaks with a cumulative dbh greater than 60 inches that occurs within the Sonoma County Valley Oak Combining District, PG&E will coordinate with landowners to either replace or pay an in-lieu fee to the County valley oak planting program. Any protected trees that are otherwise removed will be documented and replaced at a 1:1 ratio or other measure derived through coordination with Sonoma County or the Town of Windsor that provides an equal level of compensation.</p>	<p>All project areas where qualifying oak tree removal occurs</p>	<ul style="list-style-type: none"> • Before Construction: PG&E identifies all qualifying oak trees that may be impacted with work areas and access routes • During Construction: (1) PG&E documents all qualifying oak trees that are removed, (2) PG&E coordinates with applicable landowners to replace oak trees or pay fee to County tree planting program, and (3) Protected oak trees are replaced at a 1:1 ratio or as determined through coordination with the County • After Construction: Ensure success of replanting if trees are replaced 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Biology-1: General Biological Monitoring (Supersedes APM BIO-1b and APM BIO-1c)</p> <p>Biologist Approval and Qualifications. CPUC-approved qualified biologists will conduct biological surveys and monitoring for the project. Qualified biologists are defined as individuals with a bachelor's degree or above in a biological science field and demonstrated field experience. Approved and qualified biologists shall conduct required surveys and monitoring for special-status species and active nests. Qualified avian biologists are defined as individuals with demonstrated field expertise in ornithology, in particular, nesting behavior and nest detection. Monitoring biologists conducting avian nest checks shall have demonstrated experience surveying or monitoring nesting birds. Qualified botanists are defined as individuals with demonstrated field expertise in botany. Qualified herpetologists are defined as individuals with demonstrated experience with California reptile and amphibian species. Biologists qualified for construction monitoring shall hold at minimum 1 to 2 years of construction-related biological monitoring experience. Biologists qualified as a lead field monitoring biologist shall have 5 or more years of related experience.</p> <p>General Monitoring Procedures. The approved biologist shall conduct general biological monitoring during construction activities that may disturb sensitive biological resources. The general biological monitoring (as required by this measure) may be conducted concurrently with other required monitoring activities, as appropriate. The biological monitor shall be responsible for ensuring compliance with avoidance and minimization procedures, regularly attending morning tailboard meetings with workers, and administering the required biological training requirements.</p> <p>Resource Delineation. Prior to construction or access in any area containing or potentially containing sensitive habitats, the biological monitor shall mark or otherwise delineate the limits of sensitive habitats and resources (i.e., wetlands and other water features, suitable aquatic habitat) for avoidance, and where necessary, post signs at access route entrances to inform workers of special access considerations (i.e., seasonal restrictions, biological monitor escort, etc.). Resource markings and signs shall be maintained and repaired as needed and as directed by the biological monitor.</p> <p>A biological monitor shall be present during the initial construction access in all unpaved areas to identify and mark sensitive resources for avoidance. The biological monitor shall also be present during all grading and vegetation clearing (e.g., mowing, trimming, and removal) within 50 feet of sensitive habitats or resources unless otherwise agreed by the CPUC biologist, lead environmental monitor, and PG&E's lead biologist. The biological monitor shall have full authority to halt construction once safe to do so if a resource has or may be impacted.</p>	<p>All unpaved work areas within 50 feet of sensitive resources</p>	<ul style="list-style-type: none"> • Before Construction: (1) PG&E submits qualifications for general biological monitor(s) to the CPUC for review and approval, and (2) The extent of work areas in locations with sensitive resource potential are marked • During Construction: (1) Biological monitoring is conducted when working in sensitive habitats and at least once a week, and (2) Signs and marking and flagging material are maintained and repaired • After Construction: N/A 	<ul style="list-style-type: none"> • Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - CPUC-approval of specialty monitors • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<p>The biological monitor shall also visit each active work site at least once a week to inspect the work area for the presence of biological resources, verify that all avoidance measures (e.g., flagging or fencing) are in place, and document any species relocation or impacts.</p> <p>MM Biology-2: Special-status Plants (Supersedes APM BIO-4) Focused Surveys. Qualified botanist(s) shall conduct protocol-level botanical surveys, employing the CNPS "Intuitive Controlled" survey method or other accepted botanical survey protocol. The surveys shall include a floristic inventory and focused search for special-status plants with potential to occur in project areas where suitable habitat is present. Special-status plant surveys shall be conducted during the appropriate blooming period for each species and prior to construction activities. Special-status plant survey(s) shall be conducted within 2 years of mobilization.</p> <p>The survey results shall be summarized in a report and provided to the CPUC no less than 30 days prior to construction. The survey report shall identify the botanists' names and qualifications, and a description of the survey dates, methods, and a description of the survey efforts, including a list of the species that were searched for, results of the plant inventory evaluation, and suitable habitat that was encountered. The report shall include maps (1: 3,000 scale) that identify final project work areas and access routes, the locations of suitable habitat within the project study area as defined in the IS/MND, and the extent of focused plant surveys that cover project areas located in suitable habitat. If any special-status plant individuals or populations are encountered, the plants shall be enumerated and described in the report. Maps in the report shall identify point locations for individual plants and boundaries for plant populations. The report shall include recommendations for avoiding the plants, where feasible.</p> <p>If special-status plants cannot be avoided, the plant impacts shall be enumerated and described in the survey report. PG&E shall consult with USFWS and CDFW should any state- or federally-listed plants be found that cannot be avoided, to determine if permit authorizations are required. PG&E shall provide the CPUC with any permits and authorizations obtained from USFWS and CDFW.</p> <p>Special-status plants within and adjacent to work areas and access routes shall be marked and completely avoided, to the extent feasible, by a qualified botanist.</p> <p>Salvage and Replanting Plan. If impacts on the special-status plant species cannot be avoided and if impacts would be substantial, as determined by the CPUC taking into consideration the rarity of the species in the project area and the extent of the impact, PG&E shall prepare and implement a Salvage and Replanting Plan. The plan would specify, at a minimum, the following:</p> <ul style="list-style-type: none"> • Location of the mitigation site(s) (extent of the plants within and adjacent to project areas). • Procedures for procuring plants, such as transplanting or collecting seed from plants to be impacted, including storage locations and methods to preserve the plants. • Procedures for propagating collected seed, including storage methods. • Quantity and species of plants to be planted or transplanted. • Planting procedures, including the use of soil preparation and irrigation. • Schedule and action plan to maintain and monitor the mitigation site for a minimum 3-year period. • Reporting procedures, including the contents of annual progress reports. • List of criteria (e.g., growth, plant cover, survivorship) by which to measure success of the plantings. • Contingency measures to implement if the plantings are not successful (i.e., weed removal, supplemental plantings, etc.). <p>PG&E shall submit the plan to the CPUC for review and approval no less than 30 days prior to impacting or collecting special-status plants. At a minimum, the transplanted/created population(s) shall have approximately the same characteristics as the impacted population (within 10-percent density, total population number, and non-native/invasive). Seasonal population changes may be taken into account by identifying and documenting the characteristics of an appropriate representative reference site prior to impacting a population. Reference sites that will be used must be identified and described in the Salvage and Replanting Plan.</p> <p>If CPUC determines that the Salvage and Replanting Plan is not likely to be successful (due to the species' life form, habitat requirements, or other factors), then either (1) impacts on the special-status plants in questions must be avoided, or (2) a financial contribution will be made to an organization that restores/protects special-status plant populations in the project region.</p>	<p>All project areas where suitable habitat for special-status plants is present</p>	<ul style="list-style-type: none"> • Before Construction: (1) Special-status plant surveys are conducted during the appropriate blooming period for each species, (2) A survey report is submitted to the CPUC no less than 30 days before construction, (3) if an impact to a special-status plant cannot be avoided, a Salvage and Replanting Plan is submitted to the CPUC for approval, (4) Plant salvage and/or seed collection procedures are implemented, and (5) Special-status plant populations are flagged for avoidance. • During Construction: (1) Special-status plants are avoided and monitored appropriately, and (2) Salvaged plants and seed are stored and monitored appropriately • After Construction: Replanting procedures and monitoring are implemented until the success criteria are met, or a financial contribution is made to an organization that restores/protects special-status populations in the project region. 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - *USFWS Incidental Take Permit - *CDFW Incidental Take Permit • Surveys (Table 2.2-2) • *Plans (Table C-2) <ul style="list-style-type: none"> - *Special-status Plant Salvage and Replanting Plan • *Specialty Field Monitoring (Table 2.2-3) • *Specific Reporting (Table 2.2-5) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization
<p>MM Biology-3: California Red-legged Frog (Supersedes APM BIO-1d, APM BIO-1m, and APM BIO-6) Habitat Survey and Mapping. A qualified biologist shall identify potentially suitable aquatic habitat for CRLF (i.e., ponds, creeks, and perennial and seasonal streams) within 500 feet of all project disturbance areas and watercourse crossings. PG&E shall submit maps (1: 3,000 scale) to the CPUC identifying the locations of potentially suitable aquatic habitat features and upland habitat within 500 feet of the project features, no less than 30 days before construction. The maps shall identify access route segments, pole locations, and work area limits that would be surveyed and fenced, monitored, or otherwise avoided as specified below.</p>	<p>Within 500 feet of potentially suitable aquatic habitat for CRLF</p>	<ul style="list-style-type: none"> • Before Construction: (1) CRLF habitat mapping is submitted to the CPUC no less than 30 days prior to construction, (2) Any USFWS permit authorizations are submitted to the CPUC, (3) The names and qualifications of CRLF biologists are submitted to the CPUC for 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - *USFWS Incidental Take Permit • Surveys (Table 2.2-2) • Specialty Field Monitoring (Table 2.2-3)

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<p>Substantial barriers or topography that would prevent CRLF dispersal should be identified on the maps. Potentially suitable habitat that is fragmented or disconnected by such barriers shall not be subject to the provisions set forth in this measure, as determined in coordination with the CPUC.</p> <p>Permits and Agency Authorizations. PG&E shall consult with USFWS to obtain permit authorizations for any necessary take coverage prior to conducting work activities within aquatic or upland habitat for CRLF. PG&E shall provide the CPUC with any required permits and authorizations obtained from USFWS, including correspondence regarding habitat determinations or avoidance and minimizations procedures. CRLF may only be handled by a qualified biologist with approval and all appropriate permit authorizations from USFWS.</p> <p>Avoidance, Minimization, and Monitoring. The following procedures shall be implemented during construction within CRLF habitat, unless conflicts arise between applicable USFWS permit conditions. In such cases, USFWS permit conditions shall supersede these procedures, and CPUC shall be provided with copies of the permits and all associated reports documenting compliance with permit conditions:</p> <ul style="list-style-type: none"> • The names and qualifications of biologists that would conduct the CRLF procedures described below shall be submitted to the CPUC for approval, unless USFWS has granted prior approval and a copy of the approval letter is submitted to CPUC. • No more than 24 hours prior to initial ground disturbance in mapped CRLF habitat, an approved biologist shall conduct a pre-activity survey for CRLF within the mapped habitat, as defined above. The pre-activity survey shall consist of walking the work area limits and adjacent areas to determine if any CRLF are present. All areas within the survey area shall be inspected that could be used by CRLF for feeding, breeding, sheltering, and movement, including suitable mammal burrows. • Construction activities within watercourse crossings may only occur when the feature is dry or if the crossing method fully spans the feature (refer to MM Hydrology-4). • Aquatic habitat adjacent to work areas and along access routes shall be adequately flagged for avoidance, where necessary. • Construction activities within 500 feet of mapped aquatic habitat shall be restricted to the dry season (April 15 through October 15), to the extent feasible, or when water is not present. If construction activities must occur in these areas during the wet season (October 16 through April 14), an approved biologist shall determine which of the following measures should be implemented at each work area based on the CRLF habitat characteristics and work activities that would occur: <ul style="list-style-type: none"> - Option 1 – Install Exclusion Fencing. Temporary exclusion fencing shall be installed around the limits of work areas and access routes to ensure CRLF cannot enter the area. Installation of exclusion fencing shall occur under the supervision of an approved biologist and immediately following a clearance survey of the area. The fencing shall have a minimum aboveground height of 36 inches, and the bottom of the fence should be keyed in at least 4 inches deep and backfilled with soil, sand bags, gravel, or other means to prevent CRLF from passing under the fencing. The fencing shall be installed in a manner that reduces the potential for trapping migrating wildlife. Cover boards shall be installed along the perimeter of fencing to provide protection from the sun and predators, where necessary and appropriate. Gates shall be installed in the fencing that allow project access and adequately exclude wildlife. The exclusion fencing shall remain in place and maintained for the duration of construction activities at the location during the wet season. <p>Prior to entering and beginning work in fenced areas each day, designated personnel shall inspect the work area and both sides of the fence perimeter for CRLF and any trapped wildlife. The designated personnel must be trained by an approved biologist on CRLF identification, the laws protecting the species, and procedures to implement if the species is observed. If CRLF or trapped wildlife are observed, an approved biologist shall be notified immediately to determine the appropriate procedures to implement.</p> - Option 2 – Monitor Construction Activities. In lieu of exclusion fencing, an approved biologist shall monitor the initial ground-disturbing construction activities in each work area. Following the initial activities, at a minimum, an approved biologist shall conduct morning sweeps of each work area prior the start of construction activities. An approved biologist would then conduct spot check-monitoring at each location for the remainder of the work day. <p>Neither Options 1 or 2 would be required if a qualified CRLF biologist determines that non-ground-disturbing activities (i.e., access on established roads or overland routes) would have no potential effect on CRLF. Such exceptions shall be subject to CPUC approval and shall not apply to areas where grading or vegetation clearing would occur.</p> <ul style="list-style-type: none"> • If any CRLF adults, subadults, juveniles, tadpoles, or eggs are found during the pre-activity surveys, fence installation, daily checks of fencing, or monitoring, construction shall be halted (when safe to do so) in the vicinity of the observation that may pose a risk to the animal, as determined by an approved biologist, and USFWS shall be contacted to determine how to proceed. Alternatively, if a Biological Opinion has been obtained from USFWS for the project that addresses CRLF, then the associated measures and relocation protocols may be implemented. CPUC shall be notified by email within 24 hours of any CRLF observations. • An approved biologist shall oversee the installation of erosion and sediment controls within mapped habitat to ensure the materials do not pose a risk to CRLF. Plastic monofilament or loosely woven erosion control netting, or any similar materials that may entangle special-status wildlife, shall not be used. • Vehicle and equipment speeds shall not exceed 5 mph while on unpaved areas within 300 feet of suitable aquatic habitat. 		<p>approval, (4) Pre-activity surveys are conducted, and (5) Any exclusion fencing is installed under Option 1</p> <ul style="list-style-type: none"> • During Construction: (1) Daily sweeps and monitoring procedures are implemented, (2) Exclusion fencing is maintained under Option 1 or an approved biologist monitors construction, and (3) All avoidance and minimization measures are implemented • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
<ul style="list-style-type: none"> After a rain event (greater than 0.1 inch of rainfall), workers shall check underneath vehicles (i.e., tires, tracks, etc.) for the presence of wildlife. Any discovered wildlife shall be reported to an approved biologist for relocation assistance. 			
<p>MM Biology-4: Foothill Yellow-legged Frog (Supersedes APM BIO-1b, APM BIO-1c, and APM BIO-1m)</p> <p>Habitat Survey and Mapping. A qualified biologist shall identify potentially suitable aquatic habitat for FYLF (i.e., perennial streams with cobble or rock substrate, or seasonal streams with cobble or rock substrate and standing water, or visible moisture in the immediate vicinity) within 10 feet of all project disturbance areas and watercourse crossings. PG&E shall submit maps (1: 3,000 scale) to the CPUC identifying the locations of suitable FYLF aquatic habitat, and upland habitat within 10 feet of the feature, no less than 30 days before construction. The maps shall identify access route segments, pole locations, and work area limits that would be surveyed and monitored, as defined below.</p> <p>Avoidance, Minimization, and Monitoring. No more than 24 hours prior to initial ground disturbance in mapped FYLF habitat, an approved biologist shall conduct pre-activity surveys for FYLF. The pre-activity survey shall consist of walking the work area limits and adjacent areas to determine if any FYLF are present. All areas within the survey area that could be used by FYLF for feeding, breeding, sheltering, and movement shall be inspected. The survey shall include an adequate examination of damp areas within or in proximity to creeks.</p> <p>If FYLF are observed during the pre-activity surveys, an approved biologist shall conduct daily sweeps of work areas within the mapped habitat for FYLF prior to work activities to identify any FYLF that may have entered the adjacent work area. The daily sweeps shall consist of walking the limits of construction areas and access routes to identify any FYLF that may be present. If FYLF are found in work areas, the animal shall be provided with the opportunity to leave on its own accord. If necessary, and upon approval by the CDFW, the animal may be moved out of harm's way by an approved biologist in possession of all required permits and authorizations from the CDFW.</p>	<p>Within 10 feet of potentially suitable aquatic habitat for FYLF</p>	<ul style="list-style-type: none"> Before Construction: (1) FYLF habitat mapping is submitted to CPUC no less than 30 days prior to construction, and (2) Pre-activity surveys are conducted During Construction: Daily sweeps of work areas are performed within mapped FYLF habitat, where applicable After Construction: N/A 	<ul style="list-style-type: none"> *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> *CDFW Incidental Take Permit Surveys (Table 2.2-2) *Specialty Field Monitoring (Table 2.2-3) *General Reporting (Tables 2.2-6 and 2.2-7) *Avoidance and Minimization

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MM Biology-5: Special-status and Protected Migratory Birds (Supersedes APM BIO-2)

Nest Surveys. If work is scheduled during the nesting season (generally from February 1 through August 31, but may be earlier or later depending on species nesting patterns and weather conditions), nest detection surveys will occur within 7 days prior to the start of work activities at designated construction areas, staging areas, and landing zones to determine nesting status. Nest surveys will be accomplished by ground surveys within 500 feet of work areas, to the extent accessible, and/or by helicopter between 500 feet and 0.5 mile of work areas. Survey areas will generally correspond with the species-specific standard buffers set forth in *Nesting Birds: Species-Specific Buffers for PG&E Activities* located in Appendix D. Surveys will be conducted during the appropriate time of day and season for the species expected to be present. Access for ground surveys will be subject to PG&E's easement and property access permissions. Passerine survey areas will generally be 250 feet from all work areas. The non-special-status raptor survey area will generally be 500 feet from work areas where trees and other suitable nesting substrate are located. Helicopter surveys for special-status raptors will be conducted within 0.5 mile of all project work areas.

After construction begins in an area, avian biologists or approved avian monitors shall inspect suitable nesting habitat within 250 feet (passerines) and 500 feet (raptors) of active work areas on a weekly basis during the nesting season to identify and document any new active nests that may be present (see nest monitoring and reporting below – and considerations for nesting in active work areas). If special-status raptor nests cannot be observed from the ground, weekly checks for special-status raptors may occur by helicopter during periods when helicopters are in use. Helicopter flight restrictions for nest detection surveys may be in effect for densely populated residential areas, and will include observance of appropriate established buffers and avoidance of hovering in the vicinity of active nest sites.

A CPUC-approved and qualified avian biologist shall conduct surveys for nesting birds.

Active vs. Inactive Nests. When a nest of any bird species is located within the required survey/potential disturbance area, an approved avian biologist shall determine whether the nest is active. A nest shall be defined as active once it contains eggs or young, or potentially contains eggs or young if presence cannot be reasonably determined. An inactive nest is defined as a nest that has been abandoned by the adult bird or once fledglings are no longer dependent on the nest site or parental care.

Standard Nest Buffers. If active nests are found, the biologist will establish a species-specific standard nest buffer around each active nest, as listed in *Nesting Birds: Species-Specific Buffers for PG&E Activities*. For special-status raptor nests, a nest buffer shall be implemented once an approved avian biologist determines that the nest territory is occupied by adults. Construction activities would be restricted within the buffers depending on the nature and location of the activities and results of nest monitoring (see below).

Buffer Adjustments. Where feasible, standard buffers will apply, although the biologist may increase or decrease the standard buffers in accordance with the factors set forth in *Nesting Birds: Species-Specific Buffers for PG&E Activities*. For high-disturbance helicopter activities near work areas with active nests, standard buffer distances may be increased up to double the distance with agreement between the CPUC biologist, lead environmental monitor, and PG&E's lead biologist. Nest buffers shall not restrict construction-related traffic using existing roads. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing reduced nest buffers. Nest buffers shall be implemented until the approved avian biologist determines that the nest is no longer active. Active nests will not be impacted during tree or structure removal.

Buffer Reductions. The standard buffer distances for nests may be reduced on a case-by-case basis based on site-specific conditions set forth in *Nesting Birds: Species-Specific Buffers for PG&E Activities*, such as avian biology, nest concealment, existing conditions, habituation, environmental conditions, and level of project activity, upon agreement between the CPUC biologist, lead environmental monitor, and PG&E's lead project biologist. Buffer reduction will be included in the weekly monitoring report and will document:

- Species and listing status
- Location description
- Pre-existing conditions present on site
- Description of the work to be conducted within the reduced buffer, including equipment type, and start date
- Size and expected duration of proposed buffer reduction
- Reason for buffer reduction
- Name of the biologist(s) who observed the nest and approved the buffer reduction
- Proposed frequency of monitoring necessary for the nest given the type of bird and surrounding conditions as determined by the approved avian biologist

Nesting in Active Work Areas. If birds are found building nests within the standard buffer distance after specific project activities begin and the activities are not expected to increase in duration, intensity, or distance from the nest, it shall be assumed that the birds are tolerant of those specific project activities. If the specific project activities change within the standard buffer increase in duration, intensity, or distance, the avian monitor shall observe the nest until it can be determined the birds are tolerant of the new activities. If the avian monitor determines that the nesting birds are not tolerant of project activities, the buffer shall be expanded and may be expanded beyond the standard buffer distance if necessary.

Within 0.5 mile (special-status raptors), 500 feet (all other raptors), and 250 feet (passerines) of all project areas

- **Before Construction:** PG&E conducts pre-construction surveys for active bird nests
- **During Construction:** (1) PG&E conducts on-going monitoring of any active bird nests, (2) No-disturbance buffers are enforced, and (3) PG&E submits weekly nest information to the CPUC
- **After Construction:** N/A

- **Surveys (Table 2.2-2)**
- **Specialty Field Monitoring (Table 2.2-3)**
- **Specific Reporting (Table 2.2-5)**
- **General Reporting (Tables 2.2-6 and 2.2-7)**
- **Avoidance and Minimization**

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Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
<p>Nest Monitoring. Active nests will be periodically monitored at a frequency and length of time necessary to ensure that nesting pairs continue to tend the nest, and until the monitoring biologist has determined that the young have fledged, or once construction ends. At minimum, nest monitoring will occur weekly. For reduced buffers, nest monitoring will initially occur daily to determine whether a larger buffer is necessary. Daily nest monitoring will occur during helicopter operations within standard buffer distances. Per the discretion of the monitoring biologist and CPUC biologist, vegetation removal by hand may be allowed within standard nest buffers or in areas of potential nesting activity. The monitoring biologist will have authority to order the cessation of nearby project activities, once safe to do so, if nesting pairs exhibit signs of disturbance.</p> <p>Reporting. Survey results shall be submitted to the CPUC on a weekly basis. Nest locations and buffers shall be mapped using a Geographic Information System (GIS). Nest information and monitoring observations shall be documented and provided to the CPUC weekly, and include the following information:</p> <ul style="list-style-type: none"> • Date, time, and length of observation period • Nest status (active or inactive) • Species and listing status • Nest location, including approximate nest height • Behavioral observations • Site conditions, including construction activities • Estimated incubation start date, if possible • Estimated fledge date • Number of eggs or hatchlings, if observed • Buffer size implemented <p>No avian reporting shall be required for construction activities outside of the nesting season unless species are observed nesting outside of the normal season or special-status bird species are observed in the project area.</p> <p>Nesting Deterrents. As appropriate, nest deterrent strategies may be used to prevent birds from nesting in construction equipment or staged materials. Nest deterrent strategies may include exclusion netting, covering equipment with tarps, or covering small holes. The monitoring biologist shall review bird netting use daily due to risk of entanglement.</p> <p>Design Guidelines. PG&E shall adhere to recommendations published by the Avian Power Line Interaction Committee, Reducing Avian Collisions with Power Lines: The State of the Art in 2012, as feasible.</p>			

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Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
<p>MM Biology-6: Special-status and Protected Bats (Supersedes APM BIO-5)</p> <p>Roosting Habitat Assessment. Prior to construction, a CPUC-approved qualified biologist with expertise in bats shall conduct a pre-construction assessment for suitable special-status or otherwise protected² bat roosting habitat that may be impacted within approximately 50 feet of project work areas and access routes where grading and vegetation removal may occur. The qualified biologist shall identify all suitable bat roosts that may be impacted, including man-made structures, snags, rotten stumps, mature trees with broken limbs, trees with exfoliating bark, bole cavities or hollows, and dense foliage. The qualified biologist shall document the results of the pre-construction assessment and record the location of suitable bat roosts. The potential use of these roosts (e.g., day roost, night roost, maternity roost, hibernation roost) shall also be described. The results shall be submitted to the CPUC at least 30 days prior to construction.</p> <p>Avoidance and Minimization. Where suitable special-status or otherwise protected bat roosts are identified, the following procedures shall be implemented:</p> <ul style="list-style-type: none"> • Suitable bat roosts shall be marked and avoided to the extent practicable. • When possible, removal of trees identified as providing suitable bat roosting habitat should be conducted during seasonal periods of bat activity, including: <ul style="list-style-type: none"> - (1) Between March 1 and April 15, or after evening temperatures rise above 45 degrees Fahrenheit and/or no more than ½ inch of rainfall within 24 hours occurs; or - (2) Between September 1 and about October 15, or before evening temperatures fall below 45 degrees Fahrenheit and/or more than ½ inch of rainfall within 24 hours occurs. • If it is determined that a special-status or otherwise protected bat maternity roost is potentially present, the roosts shall not be removed during the breeding season (April 15 to August 31) to the extent practicable. If such a potential bat maternity roost must be removed during the breeding season, then the following shall be implemented: <ul style="list-style-type: none"> - (1) Acoustic emergence surveys or other appropriate methods shall be conducted/implemented to further evaluate if the roost is an active maternity roost; the methods and findings of this work would both be subject to CPUC approval; - (2) If it is determined that the roost is not an active maternity roost, then the roost may be removed in accordance with the other requirements of this measure; - (3) If it is found that an active maternity roost is present, the roost shall not be physically disturbed during the breeding season and an approved bat biologist shall determine if any buffers around the roost are needed. • Potential suitable non-maternity roosts that cannot be avoided shall be removed on warm days in late morning to afternoon when any bats present are likely to be warm and able to fly. • An approved bat biologist shall oversee removal of suitable roosts. The biologist shall first inspect all crevices and cavities and attempt to expose any bats that may be present by carefully peeling away bark or cover material and opening crevices, to the extent possible. • Prior to trimming or removing suitable roosts, the approved bat biologist shall instruct workers to create noise and vibration disturbance on the roost (e.g., concussive hitting with tools and/or chainsaw cutting) for several minutes. • If a cavity cannot be thoroughly inspected on a tree, snag, or stump, clearing crews shall remove smaller limbs and sections above the cavity and carefully expose it so bats may crawl out and fly away. Clearing crews shall wait up to 10 minutes in between each cut to determine if the cavity is empty. Sections of trees and branches that may contain bats shall be set aside and away from work areas so that any remaining bats may escape. 	<p>Within 50 feet of suitable special-status or otherwise protected bat roosting habitat</p>	<ul style="list-style-type: none"> • Before Construction: A pre-construction survey is conducted for active special-status or otherwise protected bat roosts in locations where grading or vegetation removal could occur within 50 feet of potentially suitable habitat • During Construction: (1) Bat avoidance measures are implemented prior to tree removal with active special-status or otherwise protected bat roosts and (2) Adequate no-disturbance buffers are established around active special-status and otherwise protected bat maternity roosts, if found within 50 feet of construction • After Construction: N/A 	<ul style="list-style-type: none"> • Surveys (Table 2.2-2) • *Specialty Field Monitoring (Table 2.2-3) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization

² For purposes of this measure, “otherwise protected” bats will include any significant local breeding population that could be adversely impacted by the project, as defined by a local bat expert, and approved by the CPUC.

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Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
<p>MM Biology-7: Revegetation, Restoration, and Monitoring Plan (Supersedes APM BIO-11 and APM BIO-4)</p> <p>PG&E shall prepare and implement a Revegetation, Restoration, and Monitoring Plan that addresses procedures for quantifying vegetation impacts from construction activities and revegetation and/or restoration requirements for applicable vegetation resources. The plan shall include appropriate revegetation and/or restoration performance standards, monitoring procedures, and reporting procedures for the following vegetation resources, as defined below, and the referenced measures:</p> <ul style="list-style-type: none"> • Special-status plant populations (refer to MM Biology-2). • Suitable habitat for special-status plants and wildlife (specifically grassland, woodland, and forest). • Sensitive natural plant communities (specifically riparian habitat and Oregon oak woodland) (refer to MM Biology-9). • Large valley and small valley oaks of qualifying size (refer to APM BIO-10). <p>The plan shall be submitted to the CPUC for review and approval no less than 60 days before construction.</p> <p>Performance Standards. All temporarily disturbed areas shall be restored to near pre-construction conditions to ensure potentially significant permanent impacts do not occur as a result of the project. Pre-construction conditions, including vegetation cover estimates and percentage of Cal-IPC list invasive weeds (plants rated as “High” and “Moderate”), shall be documented for each project work area as described below in the Pre-Construction Report. Annual performance standards and final success criteria shall be developed for each vegetation resource that demonstrates an adequate progression toward pre-construction conditions such that habitat functions and values and species composition of the restored vegetation are comparable to those of nearby comparable vegetation within 3 years.</p> <p>The plan shall define annual quantitative thresholds for both vegetation resources and invasive plant species and identify corrective actions to implement if the annual thresholds are not achieved. Work sites that have been proven to meet the final success criteria shall not require further monitoring and reporting.</p> <p>Monitoring Procedures. A qualified biologist or botanist shall monitor vegetation resources that are impacted. The plan shall identify appropriate post-construction monitoring procedures for each vegetation resource, including specific methods, frequencies, and timing for seasonal requirements.</p> <p>Pre-Construction Report(s). Prior to construction, a qualified biologist or botanist shall survey all final work areas and overland access routes to identify the vegetation resources that may be impacted, including their location, composition, condition, and extent of planned project disturbance. Survey efforts may be conducted in conjunction with focused surveys required for special-status species, as described in applicable measures. Anticipated impacts on vegetation resources shall be quantified and documented in the report, such as special-status plant individuals or the characteristics of populations (i.e., estimated size and cover estimates); the types and numbers of tree and shrub individuals; and restoration acreages for grassland, woodland, and forest vegetation communities). The baseline conditions for adjacent and comparable vegetation resources shall also be documented in the report. Such areas may be used as a control for post-construction monitoring to determine relative restoration performance and account for seasonal fluctuations in invasive species composition, general growth rates, and overall coverage.</p> <p>The report shall include maps (1: 3,000 scale) that identify the types and locations of the vegetation resources that may be impacted, the limits of the planned work areas, and project access routes. An initial report shall be submitted to the CPUC no less than 30 days before construction. Separate reports may be submitted for each project segment, if necessary. If new impacts or restoration procedures are identified, the plan shall be updated and submitted in track changes to the CPUC.</p> <p>Post-Construction Reports. PG&E shall prepare and submit Post-Construction Reports to the CPUC on an annual basis until construction is complete. Post-Construction Reports shall include table summaries of actual project impacts, and maps of the areas that identify the limits of actual impacts. The summary table shall include the location name/ID for each impact area, anticipated impact acreage from the Pre-Construction Report, and actual impact acreage during construction. The report shall include a brief statement about revegetation, restoration, and monitoring procedures that would be implemented where impacts occurred, as defined in the approved plan.</p> <p>Annual Monitoring Reports. Once revegetation and restoration begins, PG&E shall conduct surveys during the growing season and submit Annual Monitoring Reports to the CPUC. The reports shall summarize revegetation and restoration efforts for each applicable impact area, provide data on performance standards and success criteria, and detail any corrective actions necessary to close out sites. Monitoring results will be updated in the plan only when applicable (i.e., seasonally or annually). Once the success criteria have been achieved for each location, monitoring and reporting would no longer occur for the location.</p> <p>PG&E shall provide written updates to CPUC upon request regarding seasonally dependent restoration and corrective actions prior to submission of the annual monitoring reports.</p>	<p>Where vegetation resources occur in project areas that could be impacted</p>	<ul style="list-style-type: none"> • Before Construction: (1) PG&E submits a Revegetation, Restoration, and Monitoring Plan to the CPUC at least 60 days prior to construction, and (2) PG&E submits a Pre-Construction Report to the CPUC at least 30 days prior to construction • During Construction: N/A • After Construction: (1) PG&E implements revegetation and restoration procedures from the approved plan, (2) PG&E submits Post-Construction Report(s) to the CPUC, and (3) PG&E submits written updates upon request and annual monitoring reports to the CPUC 	<ul style="list-style-type: none"> • Plans (Table C-2) <ul style="list-style-type: none"> – Revegetation, Restoration, and Monitoring Plan • Surveys (Table 2.2-2) • Specialty Field Monitoring (Table 2.2-3) • Specific Reporting (Table 2.2-5)
<p>MM Biology-8: Minimize Noxious Weeds</p>	<p>All work areas</p>	<ul style="list-style-type: none"> • Before Construction: N/A 	<ul style="list-style-type: none"> • Avoidance and Minimization

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<p>Precautions shall be taken to minimize the introduction of any invasive weeds. Construction equipment shall be cleaned of caked-on dirt and plant materials before entering unpaved project areas. Erosion control materials and planting seed mixes shall not introduce invasive weed species. Only certified weed-free straw and mulch shall be used on the site.</p>		<ul style="list-style-type: none"> • During Construction: Equipment and vehicles are clean prior to use on site • After Construction: (1) Planting seed mixes and any restoration plants shall not introduce invasive weed species, and (2) Erosion control materials, straw, and mulch are weed-free 	
<p>MM Biology-9: Sensitive Natural Plant Communities</p> <p>Prior to construction, a qualified biologist shall survey all final work areas and identify the extent of sensitive natural plant communities, specifically riparian habitat and Oregon oak woodland, as described in MM Biology-7 in the Pre-Construction Report.</p> <p>If sensitive natural plant communities are found in work areas and overland access routes, work areas and overland access routes shall be repositioned where possible to avoid adverse impacts to the sensitive natural plant communities.</p> <p>If tree impacts cannot be avoided in sensitive natural plant communities, PG&E shall attempt to trim native trees rather than removing them. Native trees over 6-inch diameter at breast height (dbh) trimmed over 25 percent will be assessed by an arborist. Should the arborist conclude that it is likely the trees will not survive the trimming, PG&E shall ensure the trees are replaced at a 1:1 ratio. Native trees over 6-inches dbh that are removed shall be replaced at a 1:1 ratio in the closest appropriate location, by planting seed and/or container stock. Sensitive natural plant communities shall be restored at a ratio of 1:1.</p> <p>Sensitive natural plant communities that are impacted during construction, and any replanting sites, shall be addressed in the Annual Monitoring Reports, as described in MM Biology-7.</p>	<p>All project areas where sensitive natural plant communities are located</p>	<ul style="list-style-type: none"> • Before Construction: (1) PG&E conducts a survey to identify the extent of sensitive natural plant communities and results are submitted with the Pre-Construction Report, and (2) Work areas and access routes are repositioned where possible to avoid sensitive plant communities • During Construction: Sensitive natural plant communities are avoided to the extent feasible • After Construction: (1) Qualifying trees that are trimmed more than 25 percent are assessed by an arborist and replaced, if necessary; (2) Qualifying trees that are removed are replaced at a 1:1 ratio, and (3) Impacted sensitive natural plant communities are restored and addressed in the Annual Monitoring Reports 	<ul style="list-style-type: none"> • Surveys (Table 2.2-2) • *Specialty Field Monitoring (Table 2.2-3) • *Specific Reporting (Table 2.2-5) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization
<p>MM Biology-10: Sudden Oak Death Procedures</p> <p>All workers shall be trained on requirements and BMPs for reducing the spread of the Sudden Oak Death pathogen prior to working on the site.</p> <p>All equipment, vehicles, and tools shall be thoroughly cleaned of plant material and soil prior to entering unpaved project areas.</p> <p>A qualified botanist, biologist, or arborist shall inspect all work areas and access routes for signs of vegetation infected with the Sudden Oak Death pathogen prior to construction. If any work areas are found that contain infected vegetation, PG&E shall implement the following BMPs for Sudden Oak Death recommended by California Oak Mortality Task Force, to the extent feasible:</p> <ul style="list-style-type: none"> • Cleaning stations shall be set up at staging yards and all wash water shall be contained within the cleaning area. • Mud and debris shall be scraped, brushed, or hosed from vehicles, equipment, and tools within designated cleaning areas at project staging yards if working within infected areas. • A power washer shall be used, where feasible. • All personnel shall clean boots and clothing of mud and vegetation debris if working within infected areas. <p>Work in infected areas shall be performed during the dry season (May through October), to the extent feasible, to avoid tracking out infected mud.</p>	<p>Areas where Sudden Oak Death-infected vegetation are observed</p>	<ul style="list-style-type: none"> • Before Construction: PG&E surveys for infected vegetation • During Construction: (1) Vehicles, equipment, and tools are cleaned before showing up at the project site, and (2) Vehicles, equipment, and tools are cleaned before leaving any infected work areas • After Construction: N/A 	<ul style="list-style-type: none"> • Surveys (Table 2.2-2) • Plans (Table C-2) – ETP Material • Worker Training (Table 2.2-1) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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Measures	Applicable Locations	Performance Standards and Timing	MMCRP Tracking References
<p>MM Biology-11: Wetland Mitigation</p> <p>Waters of the US and state shall be avoided by the project where possible, and impacts shall be minimized to the extent practicable using BMPs during construction. These practices shall include delineating wetlands and waters on project maps and flagging the extent of wetlands and waters within work areas to keep workers and equipment out of the area to be preserved, and using erosion control measures, such as straw wattles, hay bales, and drain inlet controls to keep sediment and debris from entering jurisdictional waters. Design and installation of temporary bridges, such as steel plates, shall be such that the water flow (velocity and low-flow channel width) is not impaired. During project construction, a biological monitor shall be on site to monitor the integrity of wetlands and other waters while major earth moving activities are underway.</p> <p>For those wetland areas that are impacted as part of the proposed project, appropriate permits shall be acquired from USACE and RWQCB prior to any impacts occurring to regulated waters of the US and/or state. Copies of applicable permits from USACE and RWQCB shall be provided to the CPUC prior to grading, and any conditions in these permits shall become a condition of project approval. Any other conditions that are stipulated for wetland impacts by USACE and/or RWQCB shall also become conditions of project approval. Impacted wetland areas shall be compensated for at a 2:1 ratio via (1) purchase of mitigation credits from a USACE- and RWQCB-approved wetland conservation bank or (2) wetland creation/habitat enhancement.</p> <ul style="list-style-type: none"> • Option 1 – Purchase of Wetland Mitigation Credits. Prior to purchasing mitigation credits from a qualified conservation bank, approval from USACE and RWQCB shall be required. Mitigation credits shall be purchased prior to breaking ground on the project site. • Option 2 – Wetland Creation/Enhancement. If PG&E elects to create/enhance wetlands on site in lieu of purchasing mitigation credits from an approved mitigation bank, compensation wetlands shall be created/enhanced on site and shall resemble those wetlands affected by the project (i.e., in-kind replacement). If wetlands cannot be created in-kind and on-site, wetland creation/enhancement shall be implemented offsite. Any wetland creation/enhancement plan shall be submitted to the CPUC, USACE and RWQCB for approval. Mitigation requirements shall include that all impacted wetlands are replaced at a minimum 2:1 ratio (for each square foot of impact, one square foot of wetland would be enhanced/created) or as otherwise specified in permitting conditions imposed by USACE and/or RWQCB. Any site where wetlands are created/enhanced must be preserved in perpetuity via recordation of a perpetual restrictive deed recorded on the Title of the property. In addition, a 5-year monitoring plan shall be implemented by a qualified biologist. At the end of the 5-year monitoring period, USACE and RWQCB shall render a conclusion if the created/enhanced wetlands are successful. 	<p>Where wetland impacts occur</p>	<ul style="list-style-type: none"> • Before Construction: Copies of any USACE and RWQCB required permits are provided to the CPUC. • During Construction: Wetlands and waters are identified on project maps and their extent flagged within work areas. • After Construction: Mitigation identified in USACE and RWQCB permits is completed. 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - *USACE Section 404 Permit - *RWQCB Section 401 Permit • *Plans (Table C-2) <ul style="list-style-type: none"> - *Wetland Creation/Enhancement and Monitoring Plan • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>Cultural Resources</p>			
<p>APM CR-1: Avoid Cultural Resources</p> <p>Archaeological resource CA-SON-1256 shall be avoided by restricting equipment and vehicle access to paved or graveled surfaces along the roadway. If travel off paved or graveled surface is necessary within the site boundary for any reason, PG&E shall place rubber mats across the site surface to protect against any inadvertent damage to the site by driving on the surface. PG&E shall also establish a protection zone by flagging the site boundary along the roadway with exclusion fencing to ensure that no vehicles will inadvertently enter the site boundary without the above-mentioned protection measures. A qualified archaeologist shall monitor all construction activity on unpaved surfaces within the resource site.</p>	<p>Confidential CA-SON-1256 site location disclosed to monitoring personnel</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Equipment within the site boundary is restricted to paved or gravel surfaces, or on rubber mats if work occurs on bare ground, and (2) Monitoring occurs if work occurs on bare ground within the site boundary • After Construction: N/A 	<ul style="list-style-type: none"> • *Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<p>MM Cultural-1: Archaeological Monitoring and Cultural Resource Discoveries (Supersedes APM CR-2)</p> <p>Archaeological Monitoring for Previously Undiscovered Cultural Resources. A CPUC-approved cultural resources specialist/archaeologist shall be onsite to spot-check the initial 10 feet of pole hole augering greater than 3 feet in diameter (limited to TSPs) and grading in previously undisturbed areas greater than 6 inches in depth. If qualifying excavations occur simultaneously at multiple locations, the cultural resources specialist/archaeologist shall spot-check each location throughout the workday until ground-disturbing activities are complete at each location. If signs of a resource are encountered during spot-checking, monitoring shall become full time until ground-disturbing activities are complete in the work area. The cultural resources specialist/archaeologist must have experience with California/regional history and local Native American history, traditions, and customs and shall meet the US Secretary of Interior Professional Qualifications Standards as published in 36 CFR Part 61. The cultural resources specialist/archaeologist shall be responsible for evaluating any cultural resources discovered during construction for signs of prehistoric Native American culture and for coordinating outreach efforts with the NAHC and local Native American tribes if potential tribal cultural resources are found. If they request to participate, Native American tribes shall be given the opportunity to monitor construction activities within 100 feet of identified prehistoric Native American resources or tribal cultural resources. Any tribal monitoring activities should be coordinated with the cultural resources specialist/archaeologist.</p> <p>Cultural Resource Discoveries. If signs of a previously undiscovered cultural resource are encountered, all construction activities within 100 feet of the resource site shall halt, and the cultural resources specialist/archaeologist shall be contacted to implement required evaluation and treatment procedures, described below. Construction supervisors and workers shall be informed that the site is off-limits, and if necessary, the cultural resources specialist/archaeologist shall install flagging to designate the limits of the site.</p> <p>If the resource is located within Caltrans right-of-way, PG&E shall also immediately notify the Caltrans Office of Cultural Resources Studies, District 4 of the discovery.</p> <p>The cultural resources specialist/archaeologist shall evaluate the resource and determine whether it is (1) a historic resource as defined in CEQA Guidelines Section 15064.5 and thus eligible for listing in the CRHR, (2) a unique archaeological resource as defined in PRC §21083.2(g), or (3) a potential tribal cultural resource as defined in PRC §21074(a). If it is determined that the resource does not meet any of these criteria, work may resume in the area, and a summary of the discovery findings and evaluation conclusions shall be documented and provided to the CPUC with Weekly Compliance Reports. The methods and results of the evaluation shall also be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). If the resource meets any of the criteria listed above and is therefore considered a significant resource under CEQA, work shall remain halted at an appropriate distance from the find, and the cultural resources specialist/archaeologist shall consult with the CPUC 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).</p> <p>If the cultural resources specialist/archaeologist determines that the resource could be a tribal cultural resource, he or she shall, within 48 hours of the discovery, notify each Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site of the discovery. The responding tribes shall be given an opportunity to participate in determining the appropriate mitigation methods in consultation with the CPUC. The CPUC shall request that the tribes respond to the notifications within 3 days.</p> <p>Preservation in place (i.e., avoidance) is the preferred method of mitigation for cultural and tribal cultural resources and shall be required to mitigate impacts on previously undiscovered resources. Other methods of mitigation shall only be used if the cultural resources specialist/archaeologist, in coordination with the CPUC, determines that the method would provide equivalent or superior mitigation of the impacts on the resource. The alternative methods of mitigation may include data recovery and documentation of the information contained in the site to answer questions about local history and prehistory (see MM Cultural-4). Work in the area may commence upon completion of treatment, as approved by the CPUC.</p>	<p>All project areas</p>	<ul style="list-style-type: none"> • Before Construction: Adequate personnel are identified for the cultural resources specialist/archaeologist • During Construction: (1) Work within 100 feet of discovered resources stops, (2) The required personnel and agencies are notified, (3) Adequate reporting and documentation occurs, (4) Significant resources are completely avoided or mitigated from impacts, and (5) Work only resumes near the resource after required procedures are complete, to the satisfaction of CPUC. • After Construction: N/A 	<ul style="list-style-type: none"> • *Notifications (Table C-3) • *Specialty Field Monitoring (Table 2.2-3) • *Specific Reporting (Table 2.2-5) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization
<p>MM Cultural-2: Cultural Resource Training</p> <p>All project personnel shall receive adequate cultural resource training prior to working on the project. The training shall address appropriate work practices necessary to effectively implement project requirements, including APMs and mitigation measures, for historical resources, archaeological resources, tribal cultural resources, and human remains. The training shall address the potential for exposing subsurface resources, basic signs of a potential resource, and required procedures if a potential resource is identified consistent with the procedures set forth in MM Cultural-1, MM Cultural-3, MM Cultural-4, and all procedures required under Health and Safety Code § 7050.5 and PRC §§ 5097.94, 5097.98, and 5097.99 for the discovery of human remains. The training shall also identify requirements for working near archaeological resource site CA-SON-1256, as defined in APM CR-1.</p> <p>PG&E shall submit the cultural resource training material to the CPUC for approval no less than 30 days before construction, and it may be submitted in conjunction with the general Worker Environmental Training Program for the project.</p>	<p>N/A</p>	<ul style="list-style-type: none"> • Before Construction: The cultural resource training material is submitted to the CPUC at least 30 days before construction • During Construction: Workers receive the CPUC-approved cultural resource training prior to working on the site • After Construction: N/A 	<ul style="list-style-type: none"> • Plans (Table C-2) – ETP Material • Worker Training (Table 2.2-1) • General Reporting (Tables 2.2-6 and 2.2-7)

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<p>MM Cultural-3: Pre-Construction Cultural and Tribal Cultural Resource Surveys</p> <p>Prior to construction at any project area, PG&E shall compare areas of proposed ground disturbance with the project geographic information system (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 construction may commence.</p> <p>If the areas have not been surveyed (such as due to minor relocation of a project feature or access road), no ground disturbance shall be permitted prior to completion of surveys by a CPUC-approved cultural resource specialist/archaeologist. If a resource is found, it shall be avoided. If it cannot be avoided, PG&E shall follow the procedures in MM Cultural-1.</p>	<p>Work areas not previously surveyed for cultural and tribal cultural resources</p>	<ul style="list-style-type: none"> • Before Construction: Work areas not previously surveyed for cultural resources are surveyed prior to construction • During Construction: Any resources found during pre-construction surveys are evaluated and, if necessary, treated • After Construction: N/A 	<ul style="list-style-type: none"> • *Surveys (Table 2.2-2) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization
<p>MM Cultural-4: Data Recovery</p> <p>If a CRHR-eligible, unique archaeological, or tribal cultural resource cannot be completely avoided or protected from direct project impacts, data recovery investigations shall be required to reduce adverse effects to the characteristics of each site that contribute to its significance or CRHR-eligibility. For sites eligible under Criterion (d), significant data shall be recovered through excavation and analysis. For sites eligible under Criteria (a), (b), or (c), data recovery may include historical documentation, photography, collection of oral histories, architectural or engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation. Data gathered during the evaluation-phase studies shall guide plans and data thresholds for data recovery. Treatment shall be based on the resource's research potential beyond that realized during resource recordation and evaluation studies.</p> <p>If data recovery occurs, PG&E shall prepare a Research and Data Recovery Plan for each individual site where data recovery is necessary. The plans shall be submitted to the CPUC for approval, and data recovery procedures shall not occur at the sites until authorized by the CPUC. The plan shall describe the specific procedures that would be implemented during data recovery, as appropriate for the type of resource. Sampling for data recovery excavations shall follow standard statistical sampling methods, but sampling shall be confined to the direct impact area.</p> <p>The methods and results of evaluation and data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with CHRIS, a copy of which shall be submitted to the CPUC. Artifacts collected during data recovery shall be cataloged and permanently curated with an appropriate institution.</p>	<p>Any work areas where a previously undiscovered resource is identified</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Research and Data Recovery Plans are submitted to the CPUC for approval, (2) Data recovery methods are implemented after CPUC approval, (3) Field Closure Reports are filed with the appropriate entities, (4) Professional-level technical reports are filed with CHRIS, and (5) Recovered artifacts are cataloged and submitted to appropriate institutions • After Construction: N/A 	<ul style="list-style-type: none"> • *Plans (Table C-2) <ul style="list-style-type: none"> - *Research and Data Recovery Plan • *Specific Reporting (Table 2.2-5)
<p>Geology, Soils, and Mineral Resources</p>			
<p>APM GS-1: Soft or Loose Soils</p> <p>Where soft or loose soils are encountered during project construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, these measures may include:</p> <ul style="list-style-type: none"> • Locating construction facilities and operations away from areas of soft and loose soil; • 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; • Installing material over access roads such as aggregate rock, steel plates, or timber mats; and • Treating soft or loose soils in place with binding or cementing agents. 	<p>All project areas</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Appropriate measures are implemented that adequately stabilize soft and loose soils where they cannot be feasibly avoided • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM GS-3: Site-specific Geotechnical Investigation</p> <p>A geotechnical investigation will be conducted to evaluate the potential for surface fault rupture for poles within and adjacent to potentially active fault traces and earthquake fault zones. Where significant potential for surface fault rupture exists, pole locations will be adjusted, where possible, to minimize any potential for damage based on the conclusions in the report.</p>	<p>All project areas in the Northern Segment</p>	<ul style="list-style-type: none"> • Before Construction: New poles are positioned after considering the findings in the geotechnical report • During Construction: N/A • After Construction: N/A 	<ul style="list-style-type: none"> • Surveys (Table 2.2-2) • Specific Reporting (Table 2.2-5)
<p>MM Geology-1: Geotechnical Investigation Report (Supersedes APM GS-2)</p> <p>PG&E shall have a professional geotechnical engineer conduct a geotechnical investigation in areas that are suspected to have unstable soils or landslide susceptibility and shall add the analysis to the Geotechnical Investigation Report required by APM GS-3. The Geotechnical Investigation Report shall provide site-specific recommendations for poles, work areas, and access routes where there is an elevated risk of geologic hazards. PG&E shall submit the Geotechnical Investigation Report to the CPUC no less than 60 days prior to construction.</p> <p>Where geotechnical hazards are found to occur, appropriate engineering design and construction measures from the Geotechnical Investigation Report shall be incorporated into the final project designs, as deemed appropriate by a California-licensed Geotechnical</p>	<p>All project areas that are suspected to have unstable soils or landslide susceptibility, underlain by a fault, or that could be subject to strong</p>	<ul style="list-style-type: none"> • Before Construction: (1) Geotechnical Investigation Report is submitted to the CPUC no less than 60 days prior to construction, and (2) Appropriate engineering design and construction measures from the Geotechnical Investigation Report 	<ul style="list-style-type: none"> • Surveys (Table 2.2-2) • General Field Monitoring (Table 2.2-4) • Specific Reporting (Table 2.2-5)

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<p>Engineer or Certified Engineering Geologist. Design measures that would mitigate seismic and landslide-related impacts shall include, but are not limited to, retaining walls, removal of unstable materials, and avoidance of highly unstable areas.</p> <p>Disturbed and engineered slopes shall be monitored by qualified construction personnel on an occasional basis (bi-monthly or as needed) until the slope is fully stabilized and no longer poses an increased risk of failure or erosion as compared to similar undisturbed slopes in the immediate vicinity.</p>	ground shaking and ground failure	<p>are incorporated into final project designs</p> <ul style="list-style-type: none"> • During Construction: Disturbed and engineered slopes are adequately monitored by qualified construction personnel • After Construction: N/A 	
Greenhouse Gas Emissions			
<p>APM GHG-2: Minimize Sulfur Hexafluoride Emissions</p> <ul style="list-style-type: none"> • Incorporate Fitch Mountain Substation into PG&E's system-wide sulfur hexafluoride (SF6) emission reduction program. CARB has adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear sections 95350 to 95359, title 17, California Code of Regulations, which requires that company-wide SF6 emission rate not exceed 1 percent by 2020. Since 1998, PG&E has implemented a programmatic plan to inventory, track, and recycle SF6 inputs, and inventory and monitor system-wide SF6 leakage rates to facilitate timely replacement of leaking breakers. PG&E has improved its leak detection procedures and increased awareness of SF6 issues within the company. X-ray technology is now used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF6 handling and accidental releases. As an active member of USEPA's SF6 Emission Reduction Partnership for Electrical Power Systems, PG&E has focused on reducing SF6 emissions from its transmission and distribution operations, and has reduced the SF6 leak rate by 89 percent and absolute SF6 emissions by 83 percent. • Require that the breakers at Fitch Mountain Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF6. • Maintain substation breakers in accordance with PG&E's maintenance standards. • Comply with California Air Resources Board Early Action Measures as these policies become effective. 	Fitch Mountain Substation	<ul style="list-style-type: none"> • Before Construction: Purchase circuit breakers with a guaranteed leak rate of 0.5 percent per year or less of SF6 • During Construction: Install circuit breakers that meet the required maximum leak rate • After Construction: Maintain circuit breakers according to PG&E maintenance standards 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
Hazards and Hazardous Materials			
<p>APM HM-3: Smoking and Fire Rules</p> <p>Smoking will not be permitted on site, except in barren areas that measures a minimum of 20 feet in diameter and are cleared to mineral soil. Under no circumstances will smoking be permitted during the fire season (approximately July through October) while employees are operating equipment, or while walking or working in grass and woodlands.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Smoking is restricted to appropriate areas and seasons • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>APM HM-4: Carry Emergency Fire Suppression Equipment</p> <p>PG&E construction crew trucks and large equipment shall 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 shall be readily available to crews. The emergency fire tool boxes shall contain fire-fighting items such as shovels, axes, and water.</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) A shovel and fire extinguisher are available in all worker vehicles and construction equipment, and (2) Emergency fire tool boxes are available at each active work area during higher risk activities (e.g., activities that could cause sparks) • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Hazards-1: Hazardous Materials Procedures and Worker Training (Supersedes APM HM-1, HM-2, and APM BIO-1i)</p> <p>PG&E shall develop and implement specific hazardous material procedures as an element of the SWPPP (MM Hydrology-1) to ensure hazardous materials are properly handled, stored, and transported, and that any inadvertent leaks or spills are adequately cleaned and reported. At a minimum, the SWPPP shall address the following procedures related to the use of hazardous materials during construction and emergency response:</p> <ul style="list-style-type: none"> • Proper disposal of contaminated soils and materials (i.e., cleanup materials). • Daily inspection of vehicles and equipment for leaks, particularly in parking areas near sensitive resource areas during construction and spill containment procedures. • Emergency response and reporting procedures to address hazardous material releases. 	All project areas	<ul style="list-style-type: none"> • Before Construction: SWPPP containing specific hazardous material procedures is submitted to the CPUC no less than 30 days before construction • During Construction: (1) Appropriate measures are implemented that limit the potential for spills, and (2) Any inadvertent spills are cleaned appropriately 	<ul style="list-style-type: none"> • Plans (Table C-2) <ul style="list-style-type: none"> - SWPPP - ETP Material • Worker Training (Table 2.2-1) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<ul style="list-style-type: none"> Fueling of any vehicles, equipment, and helicopters in staging yards or on streets paved with secondary containment and away from sensitive resource areas (e.g., preserves, designated open space areas, conserved habitat). Fuels and lubricating oils for vehicles and heavy equipment will not be stored or transferred within 100 feet of any waterbodies, unless otherwise isolated from waterbodies by secondary containment. 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 available at the project site at all times during construction and shall be used as needed to contain and control any minor releases. The absorbent material shall be removed promptly and disposed of properly. Placement of as needed, minor amounts of fuel, lubricants, and hydraulic fluid for equipment operation in appropriate storage tanks on the bed of fueling vehicles. Location of bulk lubricating oil, hydraulic fluids, and other materials used for vehicle and equipment maintenance shall be stored at the main construction yard. Use of secondary containment and spill rags when fueling. Discourage "topping-off" fuel tanks. Spill kits for all fuel trucks and fueling areas. <p>All workers shall be trained on the specific procedures for hazardous materials and emergency response as an element of the required worker environmental training prior to working on the project site.</p>		<ul style="list-style-type: none"> After Construction: N/A 	
<p>MM Hazards-2: Construction Fire Prevention Plan</p> <p>PG&E shall prepare a Construction Fire Prevention Plan that addresses procedures for fire prevention at active construction sites. The Construction Fire Prevention Plan shall include requirements for carrying emergency fire suppression equipment, conducting "tailgate meetings" that cover fire safety discussions, restricting smoking, idling vehicles, and restricting construction during red flag warnings. The Construction Fire Prevention Plan shall address the following fire risk reduction measures:</p> <ul style="list-style-type: none"> Training and briefing all personnel working on the project in fire prevention and suppression methods. Conducting a fire prevention discussion at each morning's safety meeting. Storage of prescribed fire tools and backpack pumps with water within 50 feet of work activities. Water sources including water storage tanks or water trucks that would be used in case of a fire. Assigning personnel to conduct a "fire watch" or "fire patrol" to ensure that risk mitigation and fire preparedness measures are implemented, immediate detection of a fire, and to coordinate with emergency response personnel in the event of a fire. <p>The Construction Fire Prevention Plan shall be submitted to the CPUC for review and approval at least 30 days prior to construction within the Northern Segment.</p>	Northern Segment	<ul style="list-style-type: none"> Before Construction: Construction Fire Prevention Plan is submitted to the CPUC for review and approval at least 30 days prior to construction During Construction: (1) Workers receive fire prevention training, and (2) Fire prevention tools and water are maintained on site After Construction: N/A 	<ul style="list-style-type: none"> Plans (Table C-2) <ul style="list-style-type: none"> Construction Fire Prevention Plan ETP Material Worker Training (Table 2.2-1) General Field Monitoring (Table 2.2-4) General Reporting (Tables 2.2-6 and 2.2-7) Avoidance and Minimization
Hydrology and Water Quality			
<p>MM Hydrology-1: SWPPP Development and Implementation (Supersedes APM WQ-1)</p> <p>A Qualified Stormwater Pollution and Prevention Plan (SWPPP) Developer (QSD) shall prepare a SWPPP for the project in accordance with the State Water Resources Control Board (SWRCB) Construction General Permit (CAS-2012-006-DWQ). The SWPPP shall address adequate procedures and standards required for specific project activities including, but not limited to, BMPs for erosion and sedimentation control; dewatering; hazardous materials identification, handling, storage, and disposal; and emergency response and cleanup. The SWPPP shall include an inspection and monitoring program that conforms to the requirements included in MM Hydrology-2. A QSD shall oversee implementation of the SWPPP and monitoring program. PG&E shall submit the SWPPP to the CPUC for review and comment no less than 30 days prior to construction. PG&E shall submit all filings, revisions, and Notices of Termination to the CPUC, as well as inspection reports, rain event action plans, and annual reports upon request.</p> <p>BMP materials identified in the SWPPP shall be stored and available on site prior to initiating ground-disturbing activities.</p> <p>All necessary erosion and sediment control BMPs shall be installed prior to conducting grading or vegetation clearing activities during the wet season and before the onset of any anticipated storm events. Temporary BMPs such as silt fences or wattles, which are intended to minimize sediment transport from temporarily disturbed areas, shall remain in place until disturbed areas have stabilized.</p>	All project areas	<ul style="list-style-type: none"> Before Construction: (1) A draft version of the SWPPP is submitted to CPUC at least 30 days prior to construction, and (2) the SWPPP addresses BMPs for all construction activities, and includes a monitoring program During Construction: The SWPPP is implemented appropriately until all project areas are sufficiently stabilized, SWPPP coverage is complete, and erosion, sedimentation, and pollution runoff from project activities is prevented After Construction: N/A 	<ul style="list-style-type: none"> Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> SWRCB General Permit Plans (Table C-2) <ul style="list-style-type: none"> SWPPP Specific Reporting (Table 2.2-5) Avoidance and Minimization
<p>MM Hydrology-2: SWPPP Monitoring Program (Supersedes APM WQ-2)</p>	All disturbed areas	<ul style="list-style-type: none"> Before Construction: N/A 	<ul style="list-style-type: none"> Permits and Authorizations (Table C-1)

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<p>SWPPP monitoring shall be completed by a Qualified SWPPP Practitioner (QSP) on a weekly basis during the construction period and at least once every 24 hours before, during, and after forecast rain events (any likely precipitation event forecast of 50 percent or greater probability). The purpose of the monitoring program shall be to ensure all BMPs described in the SWPPP are installed, maintained, and functioning adequately. Should any BMP failure be observed during monitoring, additional BMPs shall be implemented to prevent further erosion or sedimentation to downstream waters.</p> <p>A checklist form identified in the SWPPP shall be completed for each inspection by the QSP. The checklist forms shall be submitted to the CPUC with weekly monitoring reports. Annual reports prepared in accordance with the Construction General Permit shall also be submitted to the CPUC. The CPUC shall be notified within 24 hours of any BMP failures or discharge violations and provided with a description of corrective actions that have or will be implemented to resolve the issue.</p> <p>SWPPP monitoring shall occur until all project areas are sufficiently stabilized, as defined in the SWPPP. At a minimum, all disturbed areas must achieve 70 percent or greater vegetation cover and meet the Construction General Permit requirements for filing Notices of Termination to end SWPPP coverage and the associated BMP and monitoring requirements.</p>		<ul style="list-style-type: none"> • During Construction: (1) A QSP inspects disturbed project areas and BMPs on a weekly basis, for storm events during construction, and as needed following construction, (2) BMPs are adequately installed and maintained, and any BMPs that are not functioning properly are replaced in a timely manner, and (3) Monthly SWPPP reports are submitted to the CPUC during construction, and annual reports are submitted until SWPPP coverage ends • After Construction: All disturbed areas are stabilized as required and Notices and Termination are filed to end SWPPP coverage 	<ul style="list-style-type: none"> - SWRCB General Permit • Plans (Table C-2) - SWPPP • Specialty Field Monitoring (Table 2.2-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Hydrology-3: Dewatering Procedures (Supersedes APM WQ-3)</p> <p>Groundwater extracted during construction dewatering shall not be discharged to any surface waters or storm drains. If dewatering is necessary, the water shall either be used (1) to irrigate upland areas, (2) for dust control, or (3) for other construction process (e.g., concrete production). Any groundwater that is suspected of contamination shall be tested at a state certified laboratory and shall be stored in a Baker Tank until water quality testing has been completed. Any contaminated groundwater encountered during dewatering shall be disposed of in accordance with all applicable laws and the procedures described in the SWPPP.</p>	<p>Any excavations where dewatering occurs</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: Dewatering procedures are implemented adequately, and water is not discharged into drainages or storm drains • After Construction: N/A 	<ul style="list-style-type: none"> • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Hydrology-4: Watercourse Avoidance and Crossing Plan (Supersedes APM WQ-3 and APM BIO-3)</p> <p>PG&E shall prepare a Seasonal Watercourse Avoidance and Crossing Plan that defines specific methods for (1) completely avoiding impacts on wetlands and streams, to the extent feasible, and (2) defining specific water quality impact minimization measures that would be implemented at each crossing location that cannot be fully avoided by construction activities.</p> <p>PG&E shall submit the plan to the CPUC no less than 60 days prior to use of construction of surface water crossings or work within 50 feet of surface water resources. At a minimum, the plan shall provide the following information for each location where a wetland or watercourse is crossed by an access route or is within 50 feet of a work area:</p> <ul style="list-style-type: none"> • Available methods for complete avoidance (i.e., fencing, flagging, or alternative routes) or an explanation why complete avoidance is not feasible, where applicable. • Proposed crossing methods. • Anticipated impacts that cannot be avoided and anticipated permitting requirements for those impacts with an explanation why alternate crossing methods are not feasible. • Methods that would be implemented to reduce water quality impacts, avoid inadvertent impacts on aquatic resources, and avoid direct impacts on potentially suitable aquatic habitat for CRLF and FYLF (refer to MM Biology-3). Methods could include restricting crossing to dry periods; installing temporary bridges; or placing fiber-glass mats, steel plates, or wooden beams to protect the feature. <p>PG&E shall obtain all necessary state and federal permits for impacts on waters of the state and/or US and supply copies of all permits to the CPUC prior to construction. PG&E shall comply with all applicable Nationwide Permit regional and general conditions for any impacts on waters subject to federal jurisdiction under the Clean Water Act. PG&E shall submit agency permits or verification documents and proof of compliance to the CPUC no less than 30 days prior to impacting waters of the state or US.</p>	<p>Water feature crossings</p>	<ul style="list-style-type: none"> • Before Construction: (1) A draft plan is submitted to the CPUC no less than 60 days prior to construction, and (2) PG&E obtains all necessary state and federal permits for impacts on waters of the state and US that cannot be avoided and supplies copies to the CPUC no less than 30 days prior to impacts • During Construction: Impacts on wetlands and waters are avoided to the extent feasible and avoidance and minimization measures are implemented adequately • After Construction: Any post-construction permitting requirements are implemented as applicable 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) - *USACE Section 404 Permit - *RWQCB Section 401 Permit - *CDFW Lake and Streambed Alteration Agreement • Plans (Table C-2) - Watercourse Avoidance and Crossing Plan • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Hydrology-5: Culvert Design</p> <p>PG&E shall design any repaired or replaced culverts to meet the standards outlined in the Sonoma County Flood Control Design Criteria. At a minimum, all culverts shall be designed to avoid any increase in flooding or erosion on adjacent stream banks or slopes. Design features shall be avoided that decrease water flow or impede the movement of aquatic wildlife. The culvert design shall be provided to</p>	<p>Any repaired or replaced culverts</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: PG&E designs culverts to meet Sonoma County Flood Control Design Criteria 	<ul style="list-style-type: none"> • *Permits and Authorizations (Table C-1) - *Sonoma County culvert design approval

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<p>Sonoma County for review, and any approvals shall be obtained prior to construction. Any Sonoma County comments or approvals for the culvert design shall be submitted to the CPUC for record keeping.</p>		<ul style="list-style-type: none"> • After Construction: N/A 	<ul style="list-style-type: none"> • *General Reporting (Tables 2.2-6 and 2.2-7)
Noise			
<p>MM Noise-1: General Construction Noise PG&E shall implement the following procedures for all construction activities:</p> <ul style="list-style-type: none"> • Public Notice. Noise-sensitive receptors (e.g., residences and officials for schools, places of worship, and parks) within 500 feet of work areas shall be provided written notice at least 7 days prior to beginning construction to inform them of the scheduled construction activities and potential noise disruptions. The notice shall describe procedures for submitting any noise complaints during construction, including a phone number for submitting such complaints. • Mufflers and Maintenance. Construction equipment shall be properly equipped with feasible noise control devices (e.g., mufflers) and properly maintained in good working order. • Idling. Vehicles and equipment shall only idle when necessary. • Stationary Equipment. Stationary equipment (i.e., compressors and generators) shall be positioned as far away from sensitive receptors as practicable, and equipped with engine-housing enclosures. • Sensitive Periods. To the extent practicable, construction activities that have a high likelihood of resulting in a noise nuisance for residents in the vicinity shall not be scheduled during sensitive morning or evening periods (7:00 am to 9:00 am, and 7:00 pm to 10:00 pm), to limit the potential for noise nuisance. Nighttime work between the hours of 10:00 pm and 7:00 am shall not occur, with the exception of installing and removing guard structures at the US 101 crossing. • Noise Complaints. A Construction Noise Coordinator shall be designated to be responsible for responding to any local complaints about construction noise. The Construction Noise Coordinator shall determine the likely cause of the complaint and ensure that reasonable adjustments in the work activities are made to address the problem, to the extent possible. The phone number for noise complaints shall be clearly posted at key work areas in public locations, such as at the entrances to staging areas. Noise complaints shall be addressed within 1 week. PG&E shall provide monthly reports to CPUC that include a record of any complaints received with a description of the likely cause and how the complaint was resolved. 	<p>All project areas within 500 feet of noise-sensitive receptors</p>	<ul style="list-style-type: none"> • Before Construction: (1) Receptors within 500 feet are provided adequate notice, (2) Construction Noise Coordinator is designated, and (3) Noise complaint phone number is adequately posted at key work areas • During Construction: (1) Equipment is equipped with mufflers and adequately maintained, (2) Stationary equipment is positioned appropriately and equipped with engine-housing enclosures, (3) Loud construction activities are scheduled outside of sensitive periods to the extent practicable, and (4) Noise complaints are adequately addressed and reported to CPUC • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • Specific Reporting (Table 2.2-5) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Noise-2: Schools PG&E shall coordinate with school administrators for Mark West Elementary School and San Miguel Elementary School prior to helicopter activities within 500 feet to determine the schedule for noise-sensitive periods, defined as but not limited to instructional periods when school is in session. PG&E shall schedule helicopter activities, within these distances, when school is not in session (i.e., before or after instructional periods). PG&E shall provide CPUC with a summary of coordination efforts, including the names and contact information for school administrators who were consulted, the locations of noise-sensitive facilities, and the schedules used to determine the least disruptive timing for construction to occur. Helicopter activities within 500 feet of noise-sensitive school facilities shall not occur during the school day, unless school administrators agree to shorter distances in writing.</p>	<p>Where project helicopter activities would occur within 500 feet of a school, including flight paths</p>	<ul style="list-style-type: none"> • Before Construction: (1) PG&E coordinates with school administrators and (2) Construction activities are scheduled to occur when school is not in session • During Construction: Helicopter activities within 500 feet of schools during the school day does not occur • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Noise-3: Helicopter Activities PG&E shall implement the following procedures for helicopter activities:</p> <ul style="list-style-type: none"> • Public Notice. Residences and places of worship (e.g., The Cove) within 500 feet from any location where helicopter activities may occur, including flight paths if applicable, shall be provided written notice at least 30 days prior to beginning helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM Noise-1. • Flight Paths. Helicopter flight paths shall be planned along routes that would result in the least noise exposure possible to receptors. If helicopter noise complaints are received, work crews will attempt to adjust the flight paths to reduce noise exposure to the complainant, without substantially increasing noise exposure to other receptors. • Helicopter Hovering. Light/medium lift helicopters shall not operate closer than 50 feet from any receptors. Heavy lift helicopters shall not operate closer than 400 feet from receptors, unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors agree in writing to a shorter distance. Prior to reducing the minimum distance from receptors, PG&E shall provide the CPUC with the names, contact information, and written agreements for all affected 	<p>Where project helicopter activities would occur within 500 feet of a receptor, including flight paths, and where heavy lift helicopters would land within 4,000 feet of a school</p>	<ul style="list-style-type: none"> • Before Construction: (1) Receptors within 500 feet of helicopter activities are provided adequate notice, and (2) PG&E provides the CPUC with adequate documentation of notification and coordination requirements • During Construction: (1) Helicopter flight paths and LZs are positioned to limit noise exposure to adjacent receptors, (2) Helicopter activities in the Southern Segment do not disrupt school instruction or regularly scheduled church service, and (3) Any helicopter noise complaints are 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<p>persons within the applicable distances. The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity.</p> <ul style="list-style-type: none"> • Helicopter LZs. Helicopter LZs within staging areas shall be positioned as far as possible from receptors. Helicopter LZs shall not be positioned closer than 500 feet from any receptor. Helicopter LZs for heavy lift helicopters shall not be positioned closer than 4,000 feet from schools. Helicopters may land closer than these distances if all affected receptors agree in writing to allow a shorter distance. • Helicopter Touch Down. Helicopter touch down shall not occur in the Southern Segment or within 500 feet of receptors in the Northern Segment. Helicopter touch down may occur closer than these distances if all affected receptors agree in writing to allow a shorter distance. 		<p>adequately addressed and reported to CPUC</p> <ul style="list-style-type: none"> • After Construction: N/A 	
Paleontological Resources			
<p>APM PAL-2: Worker Environmental Awareness Training</p> <p>PG&E shall provide environmental awareness training on the recognition and protection of paleontological resources to project personnel. Training shall be required for all personnel before construction commences and repeated for all new personnel before they begin work on the proposed project. This training may be administered by the CPUC-approved, qualified Principal Paleontologist as a stand-alone training or included as part of the overall environmental awareness training as required by the project. The training will include at minimum, the following:</p> <ul style="list-style-type: none"> • Types of fossils that could occur at the project site. • Types of lithologies in which the fossils could be preserved. • Procedures that should be followed in the event of a fossil discovery. • Penalties for disturbing paleontological resources. <p>The training materials shall be submitted to the CPUC for approval at least 30 days prior to the start of construction.</p>	N/A	<ul style="list-style-type: none"> • Before Construction: The training program materials are submitted to the CPUC 30 days prior to construction • During Construction: All project personnel undergo the training • After Construction: N/A 	<ul style="list-style-type: none"> • Plans (Table C-2) – ETP Material • General Reporting (Tables 2.2-6 and 2.2-7)
<p>MM Paleontology-1: Paleontological Monitoring (Supersedes APM PAL-3)</p> <p>Paleontological monitoring shall be required for all construction that involves cutting of previously undisturbed soils within geologic units with moderate to high paleontological sensitivity, as identified in Table 3.12-1 [of the Final IS/MND]. Paleontological monitoring shall be conducted by qualified paleontological monitors under the direction of a CPUC-approved, qualified paleontologist. The qualified paleontologist shall have a Master's or PhD in geology or paleontology, have knowledge of the local paleontology, and be familiar with paleontological procedures and techniques. Paleontological monitors shall have experience in the collection and salvage of fossil remains. At a minimum, spot-check monitoring shall occur during pole hole augering more than 3 feet in diameter (limited to TSPs) within qualifying geologic units until the maximum depth has been reached. The tailings from such pole hole augering shall be temporarily preserved in place until the paleontological monitor can inspect them for presence of paleontological resources.</p> <p>Full-time monitoring shall be required during grading activities that are greater than 6 inches in depth in previously undisturbed areas, and greater than 2 feet in depth in previously disturbed areas (i.e., historically disked areas, etc.), or beyond the known depth of disturbance, in qualifying geologic units. If no paleontological resources are found after at least 50 percent of qualifying grading is completed at a work site, then full-time monitoring shall be reduced to spot-check monitoring at the discretion of the paleontologist with notification to the proponent's specialists and the CPUC.</p> <p>If a potential paleontological resource is identified when the monitor is not present, the monitor shall be contacted immediately and work shall temporarily stop in the immediate area until the potential resource can be evaluated by the monitor per provisions in MM Paleontology-2.</p> <p>Monitoring activities shall be documented in monitoring logs and reports, which shall include the activities observed, geology encountered, description of any paleontological resources encountered, and measures taken to protect or salvage discovered resources. Photographs and other supplemental information shall be included as necessary.</p>	Qualifying excavation within geologic units that have a moderate or high paleontological sensitivity	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Construction activities are monitored where qualifying excavation occurs, and (2) Monitoring activities are documented and reported adequately • After Construction: N/A 	<ul style="list-style-type: none"> • Specialty Field Monitoring (Table 2.2-3) • Specific Reporting (Table 2.2-5)
<p>MM Paleontology-2: Previously Undiscovered Paleontological Resources (Supersedes APM PAL-1 and APM PAL-4)</p> <p>In the event that a previously undiscovered paleontological resource is uncovered during project implementation, all ground-disturbing work within 50 feet of the discovery shall be halted and the paleontological resource specialist shall be immediately notified. 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, the qualified paleontologist shall evaluate the resource and determine whether it meets the definition of "unique" under CEQA, Appendix G, Part V. If the resource is determined to be unique, a determination and associated plan for</p>	All project areas	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Activities within 50 feet of a discovery halts and the qualified paleontologist is notified, (2) Resources are evaluated by the qualified paleontologist if they cannot be avoided, (3) Unique resources are 	<ul style="list-style-type: none"> • *Plans (Table C-2) • *Specialty Field Monitoring (Table 2.2-3) • *Specific Reporting (Table 2.2-5) • *General Reporting (Tables 2.2-6 and 2.2-7) • *Avoidance and Minimization

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<p>protection of the resource shall be provided to CPUC for review and approval. If the resource is determined not to be unique, work may commence in the area.</p> <p>If the resource is determined to be a unique paleontological resource, work shall remain halted, and the qualified paleontologist shall consult with PG&E staff, CPUC staff, and the landowner 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 on paleontological resources and shall be required unless there are other equally effective methods. Other methods may be used but must ensure that the fossils are recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of the CPUC-approved, qualified paleontologist. All recovered fossils shall be curated at an accredited and permanent scientific institution according to the 2010 Society of Vertebrate Paleontology standard guidelines, or as relevant at the time of project implementation. Work may commence upon completion of treatment, as approved by CPUC.</p> <p>If a unique paleontological resource is discovered, a final summary report shall be completed and submitted to the CPUC. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils. The report shall also include an itemized inventory of all collected and catalogued fossil specimens.</p>		<p>preserved in place or treated appropriately, (4) Recovered fossils are curated appropriately, (5) Work does not resume within 50 feet of a discovery until authorized by CPUC, and (6) A final summary report is submitted to CPUC</p> <ul style="list-style-type: none"> • After Construction: N/A 	
Recreation			
<p>APM REC-1: Coordination with Park Management and Signage</p> <p>PG&E will coordinate closely with park management for temporary public land and trail closures during project construction activities. If any park or trail closures are necessary during construction, PG&E would post signs advising recreational facility users of construction activities, including directions to alternative trails and/or bikeways at entrance gates to regional parks. Signage will be posted at least 1 week in advance of parks or trail closures.</p>	<p>Maddux Ranch Regional Park, Shiloh Ranch Regional Park, and Foothill Regional Park</p>	<ul style="list-style-type: none"> • Before Construction: Coordinate with Sonoma County Regional Parks District prior to park or trail closures • During Construction: Post signage at least 1 week prior to park or trail closures • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>MM Recreation-1: Trail Conditions and Repairs</p> <p>PG&E shall prepare a Pre-Project Trail Condition Report prior to construction that documents the condition of designated trails located within project work areas or access routes. The Pre-Project Trail Condition Report shall be submitted to the CPUC no less than 30 days before construction.</p> <p>PG&E shall repair all damage to trails (e.g., rutting) caused by construction vehicles and equipment by the completion of construction. PG&E shall prepare a Post-Project Trail Condition Report documenting the final state of all trails within project work areas and access routes. The Post-Project Trail Condition Report shall be submitted to the CPUC within 30 days of completing construction in each project segment. PG&E shall complete all trail repairs to the approval of the CPUC.</p>	<p>Shiloh Ranch Regional Park and Foothill Regional Park</p>	<ul style="list-style-type: none"> • Before Construction: Pre-Project Trail Condition Report is submitted to the CPUC no less than 30 days prior to construction • During Construction: Trail damage from the project is adequately repaired by the completion of construction • After Construction: Post-Project Trail Conditions Report is submitted to the CPUC within 30 days of completing construction 	<ul style="list-style-type: none"> • Specific Reporting (Table 2.2-5)
<p>MM Recreation-2: Trail Detours and Notifications</p> <p>PG&E shall provide temporary trail detours in regional parks, where feasible. Trail detours must be located on existing trails or unvegetated areas, and shall not be located where they could impact a sensitive biological and cultural resources. Trail detours may be placed along the perimeter of active work areas or through inactive work areas when it is safe to do so. Proposed trail detours within regional parks shall be agreed upon by the Sonoma County Regional Parks Department prior to implementation.</p> <p>Signs shall be posted at park and trail entrances to inform park users of construction activities that may be encountered, such as vehicles and equipment on trails, excavations, and helicopter activities. The signs shall include a map of trail closures, trail detours, and construction areas to avoid.</p>	<p>Maddux Ranch Regional Park, Shiloh Ranch Regional Park, and Foothill Regional Park</p>	<ul style="list-style-type: none"> • Before Construction: PG&E coordinates with park officials at least 90 days prior to construction • During Construction: (1) PG&E installs and maintains signs directing trail users of detours or closures, and (2) any trail detours are located within disturbed areas and do not create permanent new trails • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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Transportation and Traffic			
<p>MM Traffic-1: Construction Traffic Management</p> <p>Construction Traffic. Construction traffic shall be routed around roadways and intersections that are currently operating below LOS standards to the greatest extent possible, including the intersection at Faught Road and Old Redwood Highway. Construction traffic through the intersection at Faught Road and Old Redwood Highway shall be avoided by using Airport Boulevard and alternate local roads to access the project alignment. Construction traffic through the intersection shall be limited to an absolute minimum and shall not exceed 10 vehicle trips during weekday peak commute periods (7:00 am to 9:00 am, and 4:00 pm to 6:00 pm).</p> <p>Lane Closures. Lane closures shall be limited to the minimum number necessary. Guard structures shall be installed to prevent lane closures where possible. At least one lane must remain open on all roadways. Full road closures shall not occur frequently or last for more than a few minutes at a time.</p> <p>Lane closures in the Southern Segment shall not occur during weekday peak commute periods (7:00 am to 9:00 am, and 4:00 pm to 6:00 pm). In addition, lane closures shall not occur on Lavell Road and Faught Road during pickup times at San Miguel Elementary School and Mark West Elementary School (1:00 pm to 3:45 pm Monday, Tuesday, Thursday, and Friday, and 12:15 pm to 1:45 pm Wednesdays when school is in session).</p> <p>Should a lane closure be unavoidable during peak commute hours or school commute hours, a traffic model shall be run to demonstrate that the lane closure and detour routes do not cause a significant impact to LOS, as defined in this traffic analysis. If modeling shows that significant impacts to LOS could occur, other measures shall be incorporated and remodeled to demonstrate less than significant impacts, or the closure shall be limited to off-peak and off-school-commute hours.</p> <p>Access shall be maintained to driveways, residential communities, and parking lots. Guard structures shall be installed if overhead reconductoring activities would affect access for more than 15 minutes per day.</p> <p>Detour Routes. Detour routes shall be selected in coordination with Caltrans and Sonoma County when encroachment permits are obtained. Traffic detours shall not divert existing traffic volume that would cause roadway or intersection LOS to drop below acceptable standards (LOS D for roadways and LOS F for intersections).</p> <p>Safe detour routes shall be provided for pedestrians and cyclists along lane closures, and where traffic control occurs. Barriers shall be installed between the pathway and vehicle traffic, if necessary, to provide a safe clearance from traffic.</p> <p>Encroachment Permits. PG&E shall obtain encroachment permits from Caltrans prior to working within the US 101 ROW and from Sonoma County prior to working within the Sonoma County ROW. PG&E shall provide the CPUC with all encroachment permits obtained from Caltrans and Sonoma County prior to work in the State or County ROW. Any modified or updated encroachment permits shall also be provided to the CPUC.</p>	<p>All public roadways</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Construction traffic follows the designated routes that limit impacts to traffic circulation, (2) Lane closures do not occur during peak weekday commute periods or during school pick-up and drop-off periods, (3) Detour routes are adequately identified and implemented, (4) Encroachment permits from Caltrans and Sonoma County are obtained and implemented adequately, and submitted to the CPUC • After Construction: N/A 	<ul style="list-style-type: none"> • Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - Caltrans Encroachment Permit - Sonoma County Encroachment Permits • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization
<p>MM Traffic-2: Overhead Construction Safety</p> <p>Guard structures shall be installed where necessary and feasible during reconductoring activities. Alternatively, flaggers may be positioned to maintain public access. If public access cannot safely continue during overhead activities, PG&E shall clearly mark the unsafe area with signs and flagging to keep the public from accessing the area. If access to properties must be closed during overhead activities or residences must be temporarily evacuated during helicopter activities in the Southern Segment, PG&E shall coordinate the timing of construction activities with the affected property owners and residents.</p>	<p>All locations where the project alignment crosses public thoroughfares</p>	<ul style="list-style-type: none"> • Before Construction: N/A • During Construction: (1) Public access is maintained to the greatest extent feasible using guard structures and flaggers, (2) Areas that must be closed are flagged-off from public access, and (3) Construction activities are coordinated with any residents that may need to temporarily evacuate properties during helicopter activities in the Southern Segment • After Construction: N/A 	<ul style="list-style-type: none"> • Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - FAA Congested Area Plan for External Helicopter Loads • *Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7) • Avoidance and Minimization

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<p>MM Traffic-3: Roadway Damage PG&E shall conduct a Pre-Construction Road Condition Assessment along public roadways where construction would occur, heavy equipment would travel frequently, and at the entrances of all staging areas to document any existing roadway damage to the asphalt or concrete curbs. PG&E shall submit photos and coordinates of any existing roadway damage to the CPUC, Caltrans, and Sonoma County no less than 30 days prior to construction.</p> <p>If roadways are damaged by construction activities, the damaged area(s) shall be documented and repaired no more than 60 days following construction activities. If the damage could cause a substantial traffic hazard, the location shall be marked appropriately and repaired within 48 hours. Any roadway damages shall be repaired to pre-project conditions and following applicable Caltrans and Sonoma County repair standards.</p>	<p>Public roadways where construction would occur</p>	<ul style="list-style-type: none"> • Before Construction: Existing roadway damages are assessed and PG&E submits documentation to the CPUC, Caltrans, and Sonoma County no less than 30 days prior to construction • During Construction: Any roadway damage that could cause a substantial traffic hazard is marked and repaired within 48 hours • After Construction: Any roadway damage that would not cause a substantial traffic hazard is repaired no more than 60 days after construction 	<ul style="list-style-type: none"> • Permits and Authorizations (Table C-1) <ul style="list-style-type: none"> - Caltrans Encroachment/Transportation Permits - Sonoma County Encroachment/Transportation Permits • Specific Reporting (Table 2.2-5) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>MM Traffic-4: Emergency Access PG&E shall notify local emergency service providers (i.e., local fire districts, law enforcement offices, hospitals, and ambulance and paramedic services) no less than 1 week before construction activities and provide the locations of roadway segments where lane closures and detour routes may occur. The notice shall also identify the approximate timing and duration of lane closures and detour routes that may affect traffic and emergency access.</p>	<p>All project areas</p>	<ul style="list-style-type: none"> • Before Construction: Notify emergency service providers of lane closures and detour routes no less than 1 week before construction • During Construction: N/A • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>MM Traffic-5: Public Transit PG&E shall notify Sonoma County Transit (SCT) no less than 30 days before construction in the Southern Segment and identify roadway segments where bus routes and bus stops are located that may be affected during construction. The notice shall identify the approximate timing and duration that each bus stop may be affected. If necessary, bus stops shall be temporarily relocated or buses shall be rerouted until construction affecting the bus stop is complete, as determined through coordination with SCT. PG&E shall ensure signs are posted at affected bus stop no less than 7 days before bus stop closures. The signs shall provide information on the closest alternate bus stop for the route and the scheduled duration of relocation.</p>	<p>Project areas that could affect SCT bus routes</p>	<ul style="list-style-type: none"> • Before Construction: SCT is notified no less than 30 days before construction • During Construction: Signs are posted at affected bus stops no less than 7 days before closures • After Construction: N/A 	<ul style="list-style-type: none"> • Notifications (Table C-3) • General Reporting (Tables 2.2-6 and 2.2-7)
<p>Notes: * Requirements marked with an asterisk are only applicable under specified conditions, as noted in the requirement source.</p>			