4 MITIGATION MONITORING PLAN

4.1 MITIGATION MONITORING IMPLEMENTATION

PG&E proposes to construct and operate the Shepherd Substation. An Initial Study (IS) was prepared to assess the project's potential environmental effects; the analysis and conclusions were based on information in the PEA, project site visits, responses to data requests, and supplemental research. The majority of the project's impacts would occur during project construction. PG&E proposed APMs to reduce potentially significant adverse impacts related to project construction and operation. PG&E also proposed application of the AMMs included in the San Joaquin Valley HCP.

The purpose of this Mitigation Monitoring Plan (MMP) is to ensure effective implementation of each APM, AMM, and mitigation measure identified in the MND and imposed by the CPUC as a part of the project approval. The mitigation measures, and many of the APMs and AMMs, are required to avoid significant environmental effects of the proposed action.

This MMP is presented below in Table 4.1-1 and includes:

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

The CPUC will use this MMP as the framework for a Mitigation Monitoring, Compliance, and Reporting Plan (MMCRP). The MMCRP will be created by the CPUC to formalize protocols to be followed by CPUC third-party environmental monitors (CPUC EMs) and PG&E project staff prior to and during construction. The MMCRP will include, but will not be limited to, the following topics:

- Agency Jurisdiction
- Roles and Responsibilities
- Communication Protocols
- Compliance Verification and Reporting
- Project Changes

A final version of the MMCRP will be completed in consultation with PG&E. Typical protocols and procedures for dispute resolution are provided below.

4.1.1 DISPUTE RESOLUTION

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

Issues should be first addressed at the regular progress meetings at the field level informally between the CPUC EMs and PG&E's EMs. Questions may be raised to the PG&E Project

Environmental Manager or PG&E Project Construction Manager. Should the issue persist or not be resolved at these levels, the following procedures will be used:

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

Table 4.1-1: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
Aesthetics		
APM Visual-1: Construct a prefabricated concrete wall on the north and east sides of the substation and replanting as necessary to leave three rows of trees on the east and north sides of the substation to minimize contrast with the existing visual character of the area. As almond trees die, or are impacted by road widening along Sunnyside and Perrin Avenues, the trees will be replaced with compatible vegetation.	Confirm the construction of the wall and three rows of trees.	During construction and facility operation
APM Visual-2: Security lighting will consist of sodium vapor lamps and all exterior lighting will use non-glare light bulbs, designed and positioned to minimize casting light and/or glare to off-site locations. Security lighting will be designed at the substation in a way such that all lighting is directed inwards. In addition, all exterior lighting will be hooded to reduce light pollution.	Confirm that sodium vapor lamps and non-glare bulbs were installed and security lighting is hooded.	Following construction of the security lighting
Mitigation Measure Aesthetics-1. The final color of the pre-fabricated concrete walls shall be chosen in consultation with the Fresno County.	N/A	Prior to construction PG&E shall consult with Fresno County
Mitigation Measure Aesthetics-2. To reduce the contrast and presence of the substation and related facilities: • Non-reflective finishes shall be used on fencing and all facilities taller than 8 feet. • Entrance road solid gates shall be a natural wood color.	Visually confirm that finishes are non-reflective and that gates are a natural wood color.	During construction
Mitigation Measure Aesthetics-3. To reduce the contrast and presence of the power line and circuits, PG&E shall use non-specular conductors and galvanized steel TSPs.	Visually confirm that non-specular conductors are being used.	Prior to and during construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
Air Quality		
APM Air-1: All disturbed areas that are not being actively used for construction purposes will be stabilized of dust emissions using water or covered with a tarp or other suitable covering.	Visually inspect inactive disturbed areas to confirm stabilization measures have been applied.	During construction
APM Air-2: All unpaved roads utilized for accessing the project will be stabilized by spraying with water.	Visually inspect stabilization of unpaved roads.	During construction
APM Air-3: All ground-disturbing activities will be effectively controlled of fugitive dust emissions by application of water or by presoaking.	Visually inspect to verify control of fugitive dust emissions.	During construction
APM Air-4: When materials are transported off site, all material will be covered or wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.	Visually inspect that material transportation complies with the measure.	During construction
APM Air-5: All operations will remove the accumulation of mud or dirt from adjacent public streets at the end of each workday.	Visual inspection to verify streets are cleaned of mud and dirt.	During construction
APM Air-6: Trackout (i.e., dirt and mud transported on vehicle tires and transferred to the pavement upon existing the work area) will be removed at the end of each workday when it extends 50 or more feet from the site.	Visually inspect roadways around project site for trackout	During construction
APM Air-7: Speeds of vehicles and equipment operating on unpaved surfaces will be limited to no more than 15 miles per hour, and as required in the project dust control permit.	Verify that vehicles and equipment maintain speeds below 15 miles per hour.	During construction
APM Air-8: Dust suppressants or watering will be used to ensure that dust is	Visually inspect that dust is	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
controlled to less than 20 percent opacity when winds exceed 20 miles per hour.	controlled to less than 20 percent opacity.	
Mitigation Measure Air-1: All disturbed surface areas over 1,000 square feet must achieve final stabilization upon the completion of project construction. Final stabilization would be achieved through appropriate means that would provide long-term sediment and dust control. PG&E will be responsible for monitoring and maintaining all disturbed areas until final stabilization is achieved.	Visually inspect for permanent stabilization.	Post construction
Greenhouse Gases		
APM GHG-1/Noise-5: When not performing construction, operation, or maintenance activities, vehicles will be shut off rather than left idling unnecessarily. Some equipment or vehicles may require extended start-up times. For such equipment, a common sense approach will be used to determine idling times. Normal idling will not exceed five minutes, as required by California law.	Verify that vehicles are not left idling more than 5 minutes	During construction
APM GHG-2: Diesel fueled off-road construction equipment with 50 horsepower or greater engines shall at a minimum meet U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) Tier 1 engine standards. Compliance records will be kept by the general construction contractor. This APM is not applicable to equipment permitted by the local air quality district or certified through CARB's Statewide Portable Equipment Registration Program, or single specialized equipment that will be used for less than five total days.	Verify that compliance records are kept by general contractor.	During construction
APM GHG-3: PG&E will incorporate the following measures into its construction plans to further reduce greenhouse gas emissions: • Encourage construction workers to carpool by establishing carpooling to construction sites where feasible to do so. • Encourage recycling of construction waste. • Minimize welding and cutting by using compression of mechanical	N/A	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
applications where practical and within standards.		
APM GHG-4: PG&E will continue to be an active member of the SF_6 Emission Reduction Partnership, which focuses on reducing emissions of sulfur hexafluoride (SF_6) from transmission and distribution sources. PG&E will also continue to institute new rules for more accurately monitoring its equipment for SF_6 leaks and immediately repairing leaks that are discovered. PG&E will ensure that all breakers purchased for this project will have a manufacturer's guaranteed SF_6 leakage rate of 0.5 percent per year or less.	Verify that all breakers have a manufacturer's guaranteed SF_6 leakage rate of 0.5 percent per year or less.	During construction
Biological Resources		
APM Bio-2: To prevent the spread of noxious weeds, only equipment which has been washed and is free of caked on mud, dirt, and other debris which could house plant seeds will be allowed in the project area.	Visually inspect equipment for presence of mid, dirt, or other debris.	During construction
APM Bio-6: In accordance with, and in addition to the training requirements in AMM 1 of the PG&E San Joaquin Valley Habitat Conservation Plan (HCP), worker environmental awareness training will be conducted prior to initiating project construction activities and throughout the duration of construction, such that all new site workers have received training. Worker training will detail sensitive species of the project area and those conservation measures which have been identified to minimize impacts to them. In addition, workers will be informed about the presence, life history, and habitat of these species. Training will also include information on federal and state laws protecting migratory birds. Documentation of worker training will be available on-site.	Verify worker training documentation.	During construction
APM Bio-7: In accordance with the monitoring requirements in AMMs 15 and 17 of the HCP, a biological monitor will be onsite during ground disturbing activities with the potential to disturb habitat near flagged exclusion and restricted activity zones in order to minimize impacts to salamanders. Before the start of work each morning, the biological monitor will check under all equipment and stored	PG&E will retain a qualified biological monitor to conduct monitoring in accordance with the measure.	During ground disturbing activities with the potential to disturb habitat near flagged exclusion zones.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
supplies left in the work area overnight within 600 feet of suitable habitat for listed species with a potential to occur in the area. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel, as appropriate, if construction activities are likely to impact sensitive biological resources. The biological monitor will document monitoring activities in a daily log summarizing construction activities and environmental compliance.		Before the start of work each morning.
APM Bio-8: All work will be done in a manner that minimizes disturbance to wildlife and habitat.	Verify that measure is being implemented.	During construction
APM Bio-9: All food waste and associated containers will be disposed of in closed lid containers.	Visually inspect food waste containers.	During construction
APM Bio-11: Proper spill prevention and cleanup equipment shall be readily available.	Verify that spill prevention and cleanup equipment is available on site	During construction
APM Bio-12: Where work on pavement, existing roads, and existing disturbed areas is not practicable, worker vehicles and construction equipment shall remain on identified access routes and designated areas for construction. If additional areas are required, a biologist will survey the new area, identify any sensitive biological resource, and flag that resource for avoidance.	Verify that the measure is being implemented.	During construction
APM Bio-13: No pets or firearms are permitted within the project area.	Verify exclusion of pets and firearms within the project area.	During construction
APM Bio-14: Sensitive areas will be clearly flagged or marked. Sensitive areas will be avoided during construction unless the necessary agency permits and/or approvals have been obtained.	Visually inspect that sensitive areas are flagged and avoided. Verify that permits have been obtained	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
	and are on-site if sensitive areas are used.	
APM Bio-18: All pole holes will be backfilled or covered at the end of the work day by a method that would restrict any wildlife from entering the hole from the surface, and to prevent human injury.	Visually inspect for backfilling or covering of pole holes.	At the end of the work day, during construction
APM Bio-19: PG&E will consider the location of seasonal wetlands in the design of the power line. No power line poles will be placed in seasonal wetlands. Prior to construction the perimeter of the seasonal wetland near project construction will be flagged for avoidance.	CPUC's biologist will verify that wetlands have been properly delineated and flagged for avoidance.	Prior to and during construction
APM Bio-20: Suitable habitat areas (i.e., seasonal wetlands, ponds, and canals) within the project area will be identified during preconstruction surveys. These areas will be mapped and clearly marked in the field, and will be avoided during construction.	PG&E will retain a qualified biologist/botanist to conduct pre-construction surveys and mark suitable habitat areas. Verify that suitable habitat areas are marked and avoided.	Prior to and during construction
APM Bio-22: Additional conservation measures and/or mitigation recommended by the USFWS and CDFG through consultation for the California tiger salamander will be incorporated into the project. Any APMs that conflict with permits issued by the USFWS and/or CDFG will be superseded by those resource agency permit requirements.	Verify implementation USFWS and CDFG permit requirements.	During construction
APM Bio-24: Avian Power Line Interaction Committee Guidelines in accordance	N/A	Prior to construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006[1] will be incorporated into the power line design to minimize the likelihood of avian electrocutions.		
APM Bio-25: To the extent that the terms of these APMs conflict with subsequently negotiated terms and conditions of any state and/or federal environmental permit, the subsequent permit conditions will supersede the terms of these APMs.	Verify implementation USFWS and CDFG permit requirements.	During construction
AMM 1: Employees and contractors performing O&M activities will receive ongoing environmental education. Training will include review of environmental laws and guidelines that must be followed by all personnel to reduce or avoid effects on covered species during O&M activities.	Verify that personnel receive environmental education training.	During construction
AMM 2: Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.	Visually inspect for vehicles and equipment using pavement, existing roads and previously disturbed areas for parking.	During construction
AMM 3: The development of new access and ROW roads by PG&E will be minimized, and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.	Verify the minimization of vegetation clearing and blading for access roads	During construction
AMM 4: Vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.	Verify vehicle speeds under 15 mph	During construction
AMM 5: Trash dumping, firearms, open fires (such as barbecues) not required by the O&M activity, hunting, and pets (except for safety in remote locations) will be	Verify that work activity sites are free of dumping,	During construction

[1] 1. Avian Power Line Interaction Committee. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C., and Sacramento, California.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
prohibited in O&M work activity sites.	firearms, open fires, hunting, and pets	
AMM 6: No vehicles will be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.	Visually inspect that vehicle fueling areas are greater than 100 feet from a waterway.	During construction
AMM 7: During any reconstruction of existing overhead electric facilities in areas with a high risk of wildlife electrocution (e.g., nut/fruit orchards, riparian corridors, areas along canal or creek banks, PG&E's raptor concentration zone [RCZ]), PG&E will use insulated jumper wires and bird/animal guards for equipment insulator bushings or will construct lines to conform to the latest revision of PG&E's Bird and Wildlife Protection Standards.	Verify that lines conform to latest revision PG&E's Bird and Wildlife Protection Standards; or verify that insulated jumper wires and bird/animal guards are used for equipment insulator bushings.	During construction
AMM 9: Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, and habitat occupied by covered animal and plant species when O&M activities are the source of potential erosion problems.	Visually inspect that erosion control measures are implemented.	During construction
AMM 10: If an activity disturbs more than 0.25 acre in a grassland, and the landowner approves or it is within PG&E rights and standard practices, the area should be returned to pre-existing conditions and broadcast-seeded using a commercial seed mix. Seed mixtures/straw used for erosion control on projects of all sizes within grasslands will be certified weed-free. PG&E shall not broadcast (or apply in other manner) any commercial seed or seed-mix to disturbance sites within other natural land-cover types, within any vernal pool community, or within occupied habitat for any plant covered species.	Visually inspect and monitor that disturbed grasslands greater than 0.25 acre are reseeded.	Post-construction
AMM 12: If a covered plant species is present, a qualified biologist will stake and	Verify that PG&E has	Prior to and during

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
flag exclusion zones of 100 feet around plant occupied habitat (both the standing individuals and the seed bank individuals) of the covered species prior to O&M activities[2]. (Note: AMM 11 addresses elderberry plants and valley elderberry longhorn beetle.)	retained a qualified botanist to flag exclusion zones around plant occupied habitat. CPUC's biologist will verify that exclusion zones have been properly delineated and flagged.	construction
AMM 13: If a covered annual plant species is present, O&M activities will occur after plant senescence and prior to the first significant rain to the extent practicable.	Verify that construction and O&M activities are properly timed in accordance with the measure.	During construction
AMM 14: If a covered plant species is present, the upper 4 inches of topsoil will be stockpiled separately during excavations. When this topsoil is replaced, compaction will be minimized to the extent consistent with utility standards. (This measure will be used as an AMM for narrow endemic plants only after approval by USFWS and DFG during the Confer Process.)	Visually inspect that topsoil is stockpiled and compaction is minimized in accordance with the measure.	During construction
AMM 15: If vernal pools are present, a qualified biologist will stake and flag an	Verify PG&E has retained a	Prior to construction

[2] If an exclusion zone cannot extend the specified distance from the habitat, the biologist will stake and flag a restricted activity zone of the maximum practicable distance from the exclusion zone around the habitat. This exclusion zone distance is a guideline that may be modified by a qualified biologist, based on site-specific conditions (including habituation by the species to background disturbance levels). Measures are practicable where physically possible and not conflicting with other regulatory obligations or safety considerations; O&M activities will be prohibited or greatly restricted within restricted activity zones. However, vehicle operation on existing roads and foot travel will be permitted. A qualified biologist will monitor O&M activities near flagged exclusion and restricted activity zones. Within 60 days after O&M activities have been completed at a given worksite, all staking and flagging will be removed.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
exclusion zone prior to O&M activities. The exclusion zone will encompass 250 feet[2]. Work will be avoided after the first significant rain until June 1, or until pools remain dry for 72 hours.	qualified biologist to stake and flag an exclusion zone from vernal pools. Verify that the exclusion zone has been implemented in accordance with the measure.	activities near vernal pools.
AMM 17: If suitable habitat for covered amphibians and reptiles is present and protocol-level surveys have not been conducted, a qualified biologist will conduct preconstruction surveys prior to O&M activities involving excavation. If necessary, barrier fencing will be constructed around the work site to prevent reentry by the covered amphibians and reptiles. A qualified biologist will stake and flag an exclusion zone of 50 feet around the potentially occupied habitat[2]. No monofilament plastic will be used for erosion control in the vicinity of listed amphibians and reptiles. Barrier fencing will be removed upon completion of work. Crews will also inspect trenches left open for more than 24 hours for trapped amphibians and reptiles. A qualified biologist will be contacted before trapped amphibians or reptiles (excluding blunt-nosed leopard lizard and limestone salamander) are moved to nearby suitable habitat.	Verify PG&E has retained a qualified biologist to conduct preconstruction amphibian and reptile surveys. Verify that surveys and exclusion zones have been implemented in accordance with the measure.	Prior to, during, and post construction.
AMM 18: If western burrowing owls are present at the site, a qualified biologist will work with O&M staff to determine whether an exclusion zone of 160 feet during the non-nesting season and 250 feet during the nesting season can be established. If it cannot, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.	Verify PG&E has retained a qualified biologist to implement exclusion zones for western burrowing owl. Verify that exclusion zones are implemented in accordance with the measure.	Prior to and during construction.
AMM 21: If San Joaquin kit fox dens are present, their disturbance and destruction	Verify that PG&E has	Prior to and during

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
will be avoided where possible. However, if dens are located within the proposed work area and cannot be avoided during construction, qualified biologists will determine if the dens are occupied. If unoccupied, the qualified biologist will remove these dens by hand excavating them in accordance with USFWS procedures (U.S. Fish and Wildlife Service 1999). Exclusion zones will be implemented following USFWS procedures (U.S. Fish and Wildlife Service 1999) or the latest USFWS procedures. The radius of these zones will follow current standards or will be as follows: Potential Den—50 feet; Known Den—100 feet; Natal or Pupping Den—to be determined on a case-by-case basis in coordination with USFWS and DFG. Pipes will be capped and exit ramps will also be installed in these areas to avoid direct mortality.	retained a qualified biologist for surveying of kit fox dens and implementing den removal. Verify implementation of USFWS procedures when removing kit fox dens and delineating exclusion zones.	construction.
AMM 22: All vegetation management activities will implement the nest protection program to avoid and minimize effects on Swainson's hawk, white-tailed kite, golden eagle, bald eagle, and other nesting birds. Additionally, trained pre-inspectors will use current data from DFG and CNDDB and professional judgment to determine whether active Swainson's hawk, golden eagle, or bald eagle nests are located near proposed work. If pre-inspectors identify an active nest near a proposed work area, they will prescribe measures to avoid nest abandonment and other adverse effects to these species, including working the line another time of year, maintaining a 500-foot setback, or if the line is in need of emergency pruning, contacting the HCP Administrator.	Verify work area has been pre-inspected by a qualified biologist and that the specified nest protection measures have been implemented.	Prior to and during construction.
AMM 29: No herbicide will be applied within 100 feet of exclusion zones, except when applied to cut stumps or frilled stems or injected into stems.	Verify that herbicide application measures are followed.	During construction
AMM 30: Trees being felled in the vicinity of an exclusion zone will be directionally felled away from the zone, where possible. If this is not feasible, the tree will be removed in sections.	Verify that trees are directionally felled away from the exclusion zone or removed in sections.	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
Mitigation Measure Biology-1: PG&E shall conduct a pre-activity survey of those portions of the project that occur within native or naturalized areas (the project route from Perrin Avenue to Shepherd Avenue). The survey should be conducted during the appropriate flowering season to identify sensitive plants that have the potential to occur within the project area. The width of the pre-activity survey will be 200 feet on the westerly side of the new power line and to the extent of PG&E's right-of-way on the easterly side. The survey will consist of walking parallel transects spaced approximately 50 feet apart to provide 100 percent visual coverage of the construction site and adjacent lands. The surveyors will map the location of all sensitive plants identified during the survey on drawings of the project site, noting the distance to construction areas, access roads, and laydown areas. If sensitive plant species are present, AMM-12, AMM-13, and AMM-14, shall be implemented.	Verify that PG&E has retained a qualified botanist to pre-activity surveys. Verify that pre-activity surveys were conducted and applicable AMMs implemented.	Prior to and during construction.
Mitigation Measure Biology-2: A pre-activity survey for Molestan blister beetle shall be conducted by a qualified biologist within 30 days prior to the start of ground-disturbing construction activities. The width of the pre-activity survey will be to the extent of the power line easement and predetermined access routes that may fall outside of the easement area within suitable habitat (grasslands). If Molestan blister beetles are encountered, the biologist shall flag an exclusion zone of 25 feet around the potentially occupied habitat. If a smaller exclusion zone is required, the exclusion zone diameter will be determined by the project biologist based on field conditions and construction activities. The exclusion zone shall be subject to review by CPUC.	Verify preconstruction survey for Molestan blister beetle is conducted within30 days prior to start of ground-disturbing construction activities in grassland areas. Verify that exclusion zones are implemented in accordance with the measure.	Prior to construction in grasslands.
Mitigation Measure Biology-3: Within 30 days of construction, a qualified biologist shall conduct a pre-activity survey within the suitable habitat for burrowing owl to determine this species' presence or absence. The width of the pre-activity survey will be 500 feet on the westerly side of the new power line, and to the extent of PG&E's right-of-way on the easterly side. The survey will consist of walking parallel transects spaced approximately 100 feet apart to provide 100	Verify project and buffer area were surveyed for burrowing owls within 30 days of construction.	Prior to construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
percent visual coverage of the construction site and adjacent lands. If western burrowing owls are present at the site, AMM-18 shall be implemented.		
Mitigation Measure Biology-4 **(proposed to supersede APM Bio-23)**: If construction activities are scheduled to occur during the avian breeding season (February 28 to August 31), a preconstruction survey for migratory birds shall be conducted by a qualified biologist within 30 days prior to the start of ground-disturbing construction activities. The width of the pre-activity survey for raptor nests will be in vegetation within 500 feet on the westerly side of the new power line alignment and up to 500 feet on the easterly side of the alignment, where access is available. At a minimum, the survey will be to the extent of PG&E's right-of-way on the easterly side. For smaller avian species, the maximum width of the survey will be in vegetation 250 feet on the westerly side of the new power line alignment and up to 250 feet on the easterly side of the alignment where access is available. At a minimum, the survey will be to the extent of PG&E's right-of-way on the easterly side. The results of the survey shall be reported to the CPUC prior to construction. If active nests are found, appropriate buffers between construction activities and the nest will be established to ensure nests are not abandoned due to project activities. The buffers shall be 50 feet for passerines and 250 feet for raptors. Work within the buffers shall not proceed until the nestlings have fledged or the nest becomes inactive, unless otherwise agreed to by the resource agency with jurisdiction over the species.	Verify preconstruction survey for migratory birds was conducted and appropriate buffers are established in accordance with the measure.	Prior to construction during the bird nesting season.
Mitigation Measure Biology-4: A preconstruction survey shall be conducted within 30 days of construction to determine the presence or absence of SJKF. This survey shall be conducted within suitable habitat and entail inspection of all burrows within 250 feet of the project site or to the extent of PG&E's right-of-way. If potential dens are detected, these dens shall be monitored using tracking medium and/or remote cameras for three nights to determine if SJKF inhabit them. If SJKF are found to be absent from the site the project can move forward with no further consideration of this species. If SJKF are found inhabiting the site or	Verify preconstruction survey for SJKF was conducted within 30 days of construction and proper minimization measures implemented as needed.	Prior to and during construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
surrounding lands during the survey the measures identified in AMM 21 shall be implemented.		
Mitigation Measure Biology-5: A survey for active dens of American badgers shall be performed by a qualified biologist within 30 days prior to construction grading or land clearing. Surveys shall be conducted within suitable habitat. The width of the pre-activity survey will be 250 feet on either side of the construction area or to the extent of PG&E's right-of-way. Construction may proceed once it is determined that there are no active dens in the survey area. If active dens are present, the dens shall be avoided during the breeding season and a 50-foot buffer around the den sites shall be established. Smaller buffers may be established through consultation with CDFG.	Verify American badgers survey was conducted within 30 days of construction and that appropriate buffers are implemented, as needed.	Prior to and during construction.
Cultural Resources		
APM Cult-2: If the applicant revises the location of proposed facilities and ground-disturbing activities that affect areas beyond those surveyed for the PEA, those areas will be subjected to a cultural resources inventory to ensure that any newly identified sites are avoided by ground-disturbing activities.	Verify that a cultural resources inventory is conducted for areas not surveyed for the PEA.	Prior to construction
APM Cult-3: The applicant will minimize or avoid impacts to any potentially significant prehistoric and historic resources that might be discovered during construction by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and immediately contacting a PG&E Cultural Resources Specialist.	Verify that measure is implemented for discovered cultural resources.	During construction
APM Cult-4: If human remains are discovered, work in the immediate vicinity will stop immediately and a PG&E Cultural Resources Specialist will be contacted. The location of the discovery will be secured to prevent further impacts and the location will be kept confidential. The Cultural Resources Specialist will evaluate the discovery and will contact the Fresno County Coroner upon verifying that the remains are human. If the coroner determines the remains are Native American,	Verify that measure is implemented for discovery of human remains.	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
the Native American Heritage Commission (NAHC) shall be contacted and the remains will be left in situ and protected until a decision is made on their final disposition.		
Mitigation Measure Cultural-1 (proposed to supersede APMs Cult-1 and Pal-1): A qualified Cultural Resources Specialist shall design and implement a Cultural Resources Awareness Program that shall be provided to all project personnel who may encounter unique archaeological properties, historical resources, or paleontological resources, including construction supervisors and field personnel. No construction worker shall be involved in field operations without having participated in the Cultural Resources Awareness Program. The Cultural Resources Awareness Program shall include, at a minimum: • A review of archaeology, history, prehistory, and Native American cultures associated with historical resources in California. • A review of photographs and figures of potential historical resources and unique archaeological properties in California. • A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to cultural resource preservation. • A discussion of procedures to be followed in the event that unanticipated paleontological or cultural resources are discovered during implementation of the project. • A discussion of disciplinary and other actions that could be taken against persons violating historical preservation laws and PG&E policies. • PG&E will require all contractors to comply with the Worker Environmental Awareness Program, PG&E policies, and other applicable laws and regulations as part of their contracts. • Environmental training shall also be provided to workers	Verify content of Cultural Resources Awareness Program training materials. Verify construction workers' participation in the Cultural Resources Awareness Program prior to field operation involvement.	60 days prior to construction and during construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
regarding the protection of paleontological resources and procedures to be implemented in the event fossil remains are encountered during ground-disturbing activities. The Cultural Resources Awareness Program may be conducted in concert with other environmental or safety awareness and education programs for the project. Cultural Resources Awareness Program training materials and/or presentations shall be submitted to CPUC for review and approval prior to the start of training sessions and at least 30 days prior to the start of construction.		
Mitigation Measure Cultural-2: Prior to construction, a certified paleontologist shall be retained by PG&E to supervise construction excavations and to produce a Paleontological Resource Management Plan (PRMP) for the proposed project. The PRMP shall be prepared and implemented under the direction of the paleontologist, and shall be submitted to CPUC for review and approval at least 30 days prior to construction. Construction activities that require excavation or augering of 5 feet in diameter or greater at depths greater than 5 feet shall be monitored on a part-time or full-time basis by a paleontological construction monitor only in those parts of the project area where these activities will disturb previously undisturbed strata in the Riverbank Formation rock unit. Should monitoring reveal paleontological resources of interest during visual inspection of the exposed rock unit, CPUC shall be immediately notified, and microscopic examination of matrix samples shall be conducted to determine if fossils are present.	Verify that a paleontologist has been retained to supervise excavations. Verify content and implementation of Paleontological Resource Management Plan (PRMP).	60 days prior to and during construction.
Mitigation Measure Cultural-3 (proposed to supersede APM Pal-1): In the unlikely event that previously unidentified paleontological resources are uncovered during implementation of the project, CPUC shall be notified immediately and all ground-disturbing work shall be temporarily halted or diverted away from the discovery to another location. PG&E's paleontological resources specialist or his/her designated representative shall inspect the discovery and determine whether further investigation is required. If the discovery is	Verify that measure is implemented for the discovery of unidentified paleontological resources.	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
significant, but can be avoided and no further impacts would occur, the resource shall be documented in the appropriate paleontological resource records and no further effort shall be required. If the resource is significant, but cannot be avoided and may be subject to further impact, PG&E shall evaluate the significance of the resources and implement data recovery excavation or other appropriate treatment measures, as approved by the landowner if on third-party property and as verified by CPUC. These measures may include a report prepared in accordance with PG&E, Society of Vertebrate Paleontology guidelines, and CPUC requirements, and/or curation at a recognized museum repository.		
Geology and Soils		
APM Geo-1/WQ-1: Erosion and Sediment Control Plan (ESCP) implementation. An ESCP will be prepared in association with the Stormwater Pollution Prevention Plan (SWPPP). This plan will be prepared in accordance with the Water Board guidelines and other applicable Best Management Practices (BMPs). Implementation of the plan will help stabilize disturbed areas and waterways and will reduce erosion and sedimentation. The plan will designate BMPs that will be followed during construction activities. Erosion-minimizing efforts may include, but are not limited to, measures such as: 1. Avoiding excessive disturbance of steep slopes. 2. Using drainage control structures (e.g., straw wattles or silt fencing) to direct surface runoff away from disturbed areas. 3. Strictly controlling vehicular traffic. 4. Implementing a dust-control program during construction. 5. Restricting access to sensitive areas. 6. Using vehicle mats in wet areas. 7. Revegetating disturbed areas, where applicable, following construction. In areas where soils are to be temporarily	Verify that PG&E has retained a QSP to implement BMPs. Verify content and implementation of ESCP and SWPPP.	Prior to and during construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface water body or drainage channel and drainage from these areas flows towards a water body or wetland, stockpiles will be placed at least 100 feet from the water body or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities. Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures, such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas, will remain in place until disturbed areas have stabilized. 8. The SWPPP will be designed specifically for the hydrologic setting of the project. BMPs documented in the ESCP may also be included in the SWPPP.		
Hazards and Hazardous Materials		
APM Haz-1: Emergency spill response and cleanup kits will be available on site and readily available for the cleanup of any accidental spill. Construction crews will be trained in safe handling and cleanup responsibilities prior to the initiation of construction.	Verify availability of emergency spill response and cleanup kits and construction crew training.	During construction
APM Haz-2: In the event of an accidental spill, the substation is equipped with a retention basin that meets SPCC Guidelines (40 CFR 112). The SPCC basin will be sufficiently sized to accommodate the accidental spill of all mineral oil from the largest transformer located at the substation. The substation will also be equipped	Visually inspect that the SPCC basin is being implemented	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Containment will be constructed around and under the battery racks with neutralizing pads.		
APM Haz-3: A water truck will be available on site during dry conditions, as assessed by the construction foreman, to prevent the ignition or spread of a wildfire. The work site will be sprayed a minimum of three times per day during dry conditions.	Verify water truck is on-site.	During construction
Mitigation Measure Hazards-1: PG&E will submit a Site Safety Plan to the CPUC at least 30 days prior to project construction. The plan will identify ways to minimize the exposure of the public to potentially hazardous materials during all phases of project construction through operation and maintenance. The plan will require appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. All hazardous materials and hazardous wastes will be handled, stored, and disposed of by personnel qualified to handle hazardous materials and in accordance with all applicable regulations. If it is necessary to store any chemicals on-site, they will be managed in accordance with all applicable regulations. Materials Safety Data Sheets will be maintained and kept available on-site, as applicable.	Verify content and implementation of SPCC Plan.	At least 30 days prior to and during construction.
Mitigation Measure Hazards-2: An Environmental Training and Monitoring Program (ETMP) shall be established to communicate any environmental concerns to all field personnel, in addition to appropriate work practices, including: • Spill prevention and response measures (including BMPs), • Site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest water bodies), • Review of all site-specific plans, including, but not limited to, the project's SWPPP and Site Safety Plan. A copy of the ETMP shall be submitted to the CPUC at least 30 days prior to	Verify content and implementation of ETMP	At least 30 days prior to construction and during construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
construction. Training records shall be kept on site and submitted to the CPUC upon request. A PG&E representative shall be designated to ensure that the plans are followed throughout the construction period. BMPs identified in the project SWPPP shall be implemented during project construction to minimize the risk of an accidental release of hazardous materials and to provide the necessary information for emergency response.		
Mitigation Measure Hazards-3: PG&E will coordinate with local emergency personnel in the event that project activities may impact an access point or route during an emergency. PG&E will notify local law enforcement and fire protection services before beginning construction activities that require road closures so that the project will not result in inadequate emergency access.	Verify PG&E's communication with emergency personnel	Prior to construction
Mitigation Measure Hazards-4: Smoking will not be permitted during fire season, except in a barren area that is paved or cleared to bare soil at least 10 feet in diameter, or within vehicles and enclosed equipment cabs. Under no circumstances will smoking be permitted during fire season while employees are operating light or heavy equipment, or while walking or working in grasslands.	Verify that smoking occurs only in approved areas.	During construction
Hydrology and Water Quality		
APM WQ-2: PG&E will avoid working within seasonal wetlands, ponds, or other water bodies. No poles will be placed within seasonal wetlands. The limits of seasonal wetlands adjacent to the work areas will be flagged in the field for avoidance. Underground canal and creek crossings will be drilled or bored underneath the water body.	CPUC's biologist will verify that wetlands have been properly flagged for avoidance. Verify that creek crossings are underneath the waterway	During construction
APM WQ-3: PG&E will engineer a permanent infiltration basin within the substation perimeter to capture on-site stormwater, clean it of potential pollutants,	Visually inspect the infiltration basin.	During construction

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
and infiltrate it into the local groundwater table. Sizing and design of the facility will follow industry best practices, including Fresno County and California Stormwater General Permit guidelines.		
Mitigation Measure Hydrology-1: PG&E will be responsible for contacting property owners to help in identifying underground waterlines prior to construction. PG&E will design construction activities to avoid impacts to a known waterline to the extent that sufficient information is available to identify the precise location of the line. Should PG&E cause damage to an irrigation ditch or waterline during construction, PG&E will be responsible for contacting the owner to shut off the water supply, repairing the water line or irrigation ditch, and containing released water to the extent feasible.	Verify that PG&E has identified and avoided underground waterlines.	Prior to and during construction.
Mitigation Measure Hydrology-2: In the case of a leak or other damage to the irrigation system utilized for the almond trees on the proposed substation site, PG&E will be responsible for repairing the irrigation system and employing BMPs as necessary to contain water released from the irrigation system.	Verify repairs to irrigation system.	During construction
Mitigation Measure Hydrology-3: Workers will not conduct construction activities in flooded areas during area flooding except as necessary to help alleviate the flooding or address emergency safety issues at the project site. Should flooding of the proposed substation or project area result in damage to substation structures or power poles, non-emergency repairs to these structures and/or pole replacement as necessary would be conducted when floodwaters subside and the area is safe for worker access. PG&E will inform CPUC of any flood damage to the project site that could change or require changes to the proposed project or affect the construction schedule.	Verify that construction does not occur during area flooding.	During construction
Land Use and Planning		
Mitigation Measure Land Use-1: PG&E will notify property owners within 300 feet of the project area at least 30 days prior to construction to alert them of project	Verify notification to nearby property owners.	30 days prior to construction.

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan		
Applicant Proposed Measure (APM) or Mitigation Measure	**Monitoring Requirement**	**Time of Action**
activities.		
Noise		
APM Noise-1: Construction will not occur before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, when construction will not occur before 7:00 a.m. or after 5:00 p.m. Work will only be conducted outside of these hours as required for project safety or to take advantage of the limited times when the power line can be taken out of service.	Verify hours of construction.	During construction
APM Noise-3: Where feasible, construction traffic will be routed to avoid sensitive noise receptors such as residences, schools, religious facilities, hospitals, and parks.	Visually inspect location of traffic routes.	During construction
APM Noise-4: Stationary equipment used during construction will be located as far as practical from sensitive noise receptors.	Visually inspect stationary equipment surroundings.	During construction
APM Noise-6: Where feasible, equipment will be used that is specifically designed for low noise emissions and equipment powered by electric or natural gas as opposed to diesel or gasoline.	Verify equipment compliance with low noise emission requirements.	During construction
APM Noise-7: Residents in areas of heavy construction noise will be notified prior to commencing construction activities. Notification should include written notice and the posting of signs in appropriate locations with a contact number that residents can call with questions and concerns.	Verify notification of area residents.	Prior to construction
Traffic and Transportation		
APM Tran-1: Deliveries will be made during normal construction hours.	Verify deliveries comply with the scheduled construction hours.	During construction
APM Tran-2: PG&E shall prepare and implement a Traffic Management Plan or	Verify Traffic Management	Prior to and during

Table 4.1-1 *(Continued)*: Mitigation Monitoring Plan

Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Time of Action
plans as required by, and in accordance with County requirements. The plan or plans shall be submitted to the CPUC when submitted to the County, and shall be distributed to all construction supervisors prior to commencement of construction activities.	Plan preparation and implementation	roadway closures.