

Mitigation Monitoring Plan

Pacific Gas & Electric Company (PG&E) proposes to construct and operate the Delta Distribution Planning Area (DPA) Capacity Increase Substation Project (“Proposed Project”). The Proposed Project includes construction of a three-bank 230/21 kV distribution substation on a 5.1-acre site in the City of Antioch. In addition, the Proposed Project would include a new transmission tower in an existing transmission right of way (ROW) and a temporary access road from an existing public road to the proposed substation site. The temporary access road would require a temporary bridge over Sand Creek. PG&E’s project objective is to improve reliability and meet projected electrical load requirements in the Delta Distribution Planning Area.

An Initial Study was prepared to assess the Proposed Project’s potential environmental effects. The Initial Study was prepared based on information in the Proponent’s Environmental Assessment (PEA), project site visits, and supplemental research. The majority of the Proposed Project’s impacts would occur during project construction. Within PG&E’s application, Applicant-Proposed Measures (APMs) were proposed to reduce potentially significant adverse impacts related to project construction and operation.

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

This Mitigation Monitoring Plan includes:

- The Applicant-Proposed Measures and mitigation measures that PG&E must implement as part of the Proposed Project;
- The actions required to implement these measures;
- The monitoring requirements; and
- The timing of implementation for each measure.

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

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Table C-1. Mitigation Monitoring Plan

Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Aesthetics			
Preserving Visual Character	V-1 Landscape screening with sufficiently tall tree species to provide effective long-term screening. To ensure effective long term screening, trees shall include species with sufficient ultimate height with the proposed berm to substantially screen taller substation components, and tree plantings shall be of sufficient density to substantially screen these features. Landscape screening shall be consistent with a landscaping plan developed by PG&E and submitted for review and approval by the City of Antioch.	Inspect implementation of landscape, grading, and irrigation plan for proposed tree and shrub species and installation sizes and upkeep	Prior to operation
Construction-Phase Aesthetics	V-2 Restore and revegetate ground disturbances due to construction staging. All ground disturbances caused by construction, staging, and temporary access road construction shall be restored to original, natural-appearing contours and revegetated at the earliest feasible time.	Inspect revegetation of project-related ground disturbances	Following site restoration activities and prior to operation
Light and Glare	V-3 Shroud and minimize unnecessary sources of light. New permanent lighting shall be designed and installed such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that: <ul style="list-style-type: none"> • Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary; • All lighting shall be of minimum necessary brightness consistent with worker safety; • Wherever feasible and safe, lighting shall be kept off when not in use. 	Inspect plans for ordering permanent lighting and descriptions of fixtures, hoods, and shields and implementation of lighting	Prior to ordering permanent lighting and prior to operation

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Air Quality			
APM Air-1	<p>PG&E will implement applicable standard best management practices (BMPs) identified in Table 2 of the BAAQMD CEQA Guidelines to reduce air quality impacts associated with PM10 as follows:</p> <ul style="list-style-type: none"> • Streets will be cleaned daily with water sweepers if visible soil material is carried onto adjacent public streets. • All paved access roads, parking areas, and staging areas at construction sites will be swept daily (with water sweepers). • Soil stabilizers will be applied to inactive construction areas on an as-needed basis. • Exposed stockpiles of soil and other excavated materials will be enclosed, covered, watered twice daily, or applied with soil binders. • Vegetation will be replanted in disturbed areas as quickly as possible following construction completion. • All active construction areas will be watered at least twice daily. • All trucks hauling soil, sand, and other loose materials will be covered or will maintain at least two feet of freeboard. • All unpaved access roads, parking areas, and staging areas at construction sites will either be paved, watered three times daily, or receive a daily application of a non-toxic soil stabilizer. • Traffic speeds will be limited to 15 miles an hour on unpaved roads. 	All applicable control measures are implemented in accordance with BAAQMD requirements to reduce temporary air quality impacts from construction.	During construction
APM Air-2	PG&E will encourage carpooling among construction workers through contractor bid specifications and project orientation training for workers.	Emissions from vehicle exhaust are reduced.	During construction
APM Air-3	PG&E will tune vehicles used in construction activities according to the manufacturer's recommended maintenance schedule, or at least annually thereafter.	Emissions from construction equipment exhaust are reduced.	During construction
APM Air-4	PG&E will minimize vehicle idling time when feasible.	Emissions from construction equipment exhaust are reduced.	During construction
Construction-Phase Air Quality	AQ-1 Use ultra low sulfur fuel. All diesel fueled construction equipment shall be fueled with diesel fuel meeting CARB ultra low sulfur (15 ppm max) certification specifications.	Ultra low sulfur diesel fuel is used.	During construction
Construction-Phase Air Quality	AQ-2 Use Tier 1 engines. All diesel fueled off-road construction equipment with engines 50 hp or larger shall at a minimum meet U.S. EPA/CARB Tier 1 engine standards. Records of equipment compliance shall be kept by the general construction contractor. This measure does not apply to equipment permitted by the local air quality district or certified through the CARB's Statewide Portable Equipment Registration Program. This also does not apply to any single specialized equipment items that will be used for less than five days total during the project construction.	Low emitting engines are used.	During construction

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Biological Resources			
APM Bio-1	An ongoing endangered species/sensitive habitat education program for construction crews will be conducted by a qualified biologist(s) prior to the commencement of the project and during construction activities. Sessions will include discussion of the FESA and CESA, the consequences of non-compliance with these acts, and identification and values of sensitive species and wetland habitats.	Construction personnel sign an environmental training attendance sheet. Disturbance to sensitive habitat is minimal. Sensitive species are avoided to the extent possible.	Prior to and during construction
APM Bio-2	An educational brochure will be produced for construction crews working on the project. Color photos of threatened and endangered species (kit fox, burrowing owl, Swainson's hawk, CRLF, and CTS) will be included, as well as a discussion of protective measures agreed to by PG&E and the resource agencies.	Disturbance to sensitive habitat is minimal. Sensitive species are avoided to the extent possible.	Prior to and during construction
APM Bio-3	Vehicles will be confined to existing roads or approved routes. In sensitive areas the speed limit will be 15 miles per hour.	Disturbance to sensitive habitat is minimal. Sensitive species are avoided to the extent possible.	During construction
APM Bio-4	A biological monitor will be on-site during any construction activity in sensitive habitat.	The biological monitor prepares daily project reports documenting impacts to sensitive species and habitat. Disturbance to sensitive habitat is minimal. Sensitive species are avoided to the extent possible.	During construction
APM Bio-5	Photo documentation of all sensitive habitat before and after construction will occur and be part of the project report due to the resource agencies no later than 90 days following completion of construction.	Photos of all sensitive habitat before and after construction are taken and included in a project report sent to resource agencies no later than 90 days following completion of construction.	During construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-6	Diligent efforts by PG&E will be used to protect the existing plant community and to keep temporary impacts to a minimum. However, if they occur, temporary impacts to habitat will be addressed through a revegetation/restoration plan prepared in conjunction with the resource agencies.	Disturbance to the plant community is minimal. A Revegetation/Restoration Plan is created in conjunction with the resource agencies and temporarily impacted habitat areas are revegetated/restored as required.	During construction
APM Bio-7	If appropriate, anti-perch devices will be applied to the horizontal surfaces of new tower structures to inhibit raptor perching and nesting.	Anti-perch devices are installed on tower as necessary.	During construction
APM Bio-8	The biological monitor will document monitoring activities in a daily project report and all daily reports will be summarized in a written report within 90 days of completion of construction.	The biological monitor documents monitoring activities, prepares daily reports, and summarizes all daily report in a written report within 90 days of completion of construction.	During construction
APM Bio-9	Trash dumping, firearms, and pets will be prohibited in the project area.	Disturbance to sensitive habitat and species is minimal. Sensitive species are avoided to the extent possible.	During construction
APM Bio-10	A wetland delineation per the U.S. Army Corps of Engineers (ACOE) Wetlands Delineation Manual will be conducted prior to construction. The delineation will use a three-parameter approach that includes an examination of vegetation, soils, and hydrology to determine the presence of wetlands. A wetland report will be prepared and submitted to the ACOE for verification. Through this process, final calculations of wetland area present in the project area will be obtained for project permitting.	A wetland delineation is conducted prior to construction and a report prepared for ACOE verification.	Prior to and during construction
APM Bio-11	Wetlands and aquatic resources will be denoted as environmentally sensitive areas and will be avoided during construction to the degree practicable. The permanent loss of emergent and/or seasonal wetlands resulting from project construction will be mitigated at a minimum ratio of 1:1 through: <ul style="list-style-type: none"> • the purchase, restoration and protection of severely degraded similar wetlands in the vicinity of the project, • the creation of new emergent and/or seasonal wetland from upland habitat within the vicinity of the project, and/or • the purchase from a mitigation bank of similar wetlands in the vicinity of the project. 	Disturbance to wetlands is minimal. Wetlands are avoided to the extent possible. The permanent loss of emergent and/or seasonal wetlands resulting from project construction is appropriately mitigated.	During construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-12	<p>Following the completion of all special-status plant surveys, if it is determined that special-status plant species occur within any areas subject to impact, the project has the potential to impact these special-status plant species.</p> <ul style="list-style-type: none"> • PG&E will acquire suitable habitat for identified species within the project vicinity, • PG&E will develop a long-term habitat enhancement plan for identified species, and/or • PG&E will monitor the implementation of and the compliance with mitigation measures outlined in the habitat enhancement plan. 	Special-status plant surveys are performed and documented. Impacts to special-status plant species resulting from project construction are appropriately mitigated, or otherwise accounted for.	During construction
APM Bio-13	Access to the construction site will be restricted to those routes identified in the project description. Access will be clearly marked in the field with appropriate flagging and signs.	All project access is clearly marked with appropriate flagging and fencing and restricted to the routes identified in the project description. Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction
APM Bio-14	Vehicle parking at the construction site will be restricted to previously disturbed areas or existing roads. Agricultural areas are not considered previously disturbed. Necessary vehicles belonging to the biological monitors and construction personnel will be parked at the nearest point to the work site on existing access roads.	Vehicle parking occurs only within previously disturbed areas or existing roads. Necessary vehicles belonging to the biological monitors and construction personnel are parked at the nearest point to the work site on existing access roads. Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction
APM Bio-15	Soil disturbance will be minimized to the greatest extent possible.	Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction

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APM Bio-16	A fact sheet or other supporting materials will be prepared and distributed to project personnel regarding habitat sensitivity, identification of special-status species, and required practices within the project area. Upon completion of training, employees will sign a form stating that they attended the training and understood all of the conservation and protection measures.	Construction personnel sign an environmental training attendance sheet. Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	Prior to and during construction
APM Bio-17	A qualified biologist will monitor all construction activities within 300 feet of Sand Creek. If necessary, the monitor will inform the project foreman of any construction activities that compromise environmental integrity. The project foreman will have the authority to stop and/or redirect project activities to ensure protection of resources and compliance with all environmental permits and conditions of the project. The biologist will complete a daily report summarizing activities and environmental compliance.	The biologist completes daily reports summarizing activities and environmental compliance. Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction
APM Bio-18	A qualified biologist will oversee placement of orange safety/ exclusion construction fencing on either side of Sand Creek at the boundary to the work area to limit the area of disturbance during construction of the access road and bridge.	Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	Prior to and during construction
APM Bio-19	Sensitive species will not be handled without first obtaining the necessary authorizations from the U.S. Fish and Wildlife Service (USFWS).	Only USFWS-authorized project personnel handle sensitive species. Disturbance to sensitive species is minimal.	During construction
APM Bio-20	A qualified biologist will conduct a preconstruction survey within the project area no earlier than two days before the start of ground-disturbing activities. From October 15 or the onset of the rainy season, whichever occurs first, until May 1, a qualified biologist will conduct daily visual surveys of all work areas within 100 feet of aquatic habitat prior to the start of any vehicle or equipment traffic. If a CRLF or CTS is encountered during the construction work, activities will cease until the species is removed and relocated by a USFWS-approved biologist. Any incidental take will be reported to USFWS immediately by telephone.	A qualified biologist conducts a preconstruction survey within the project area no earlier than two days before the start of ground-disturbing activities and documents findings. Disturbance to CRLF and CTS is minimal. CRLF and CTS are avoided to the extent possible.	Prior to and during construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-21	Ground-disturbing activities within 30 feet of suitable CRLF or CTS breeding habitat will only occur during the dry season. The bridge at Sand Creek will be installed during this time period to ensure breeding behavior is not disrupted.	Ground-disturbing activities within 30 feet of suitable CRLF or CTS breeding habitat, including the Sand Creek bridge installation, are conducted during the dry season, generally between May 1 and October 31. Disturbance to CRLF and CTS and their breeding habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction
APM Bio-22	Not applicable. Merged with Bio-20.	Not applicable.	
APM Bio-23	Mobile equipment will not be parked overnight within 100 feet of aquatic habitat. Stationary equipment (e.g., pumps, generators) used or stored within 100 feet of aquatic habitat will be positioned over secondary containment.	Disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible. No sensitive resources or species are harmed through contact with hazardous materials.	During construction
APM Bio-24	During the installation of the bridge at Sand Creek, surveys will be conducted each morning to ensure wildlife is not within the work area. Sediment control measures will be installed to minimize sedimentation downstream.	Daily surveys are performed and disturbance to CRLF and CTS and their habitat is minimal. CRLF and CTS are avoided to the extent possible.	During construction
APM Bio-25	PG&E will purchase habitat for impacted San Joaquin kit fox (kit fox) foraging habitat at a ratio to be determined by the USFWS. Because this habitat is also suitable CRLF and CTS upland habitat, no additional habitat will be purchased. PG&E anticipates approximately 6 acres will be permanently impacted as a result of the project. The suitable kit fox, CRLF, and CTS upland habitat or credits will be purchased from an organization agreed upon by PG&E and the USFWS.	Habitat or credits are purchased from an organization agreed upon by PG&E and the USFWS as necessary to mitigate for permanently impacted kit fox, CRLF, and CTS upland habitat as a result of the project.	Prior to and during construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-26	A preconstruction survey will be conducted in all areas providing suitable habitat at least 30 days prior to construction according to the most recent Burrowing Owl Survey Protocol and Mitigation Guidelines. Surveys will cover a 250-foot buffer around the substation and work areas. The survey will include checking for the burrowing owl and owl sign. If owls are found to be using the site and avoidance is not feasible, a passive relocation effort (displacing the owls from the site) may be conducted as stipulated by the California Department of Fish and Game (CDFG) guidelines. If an active burrow is inadvertently destroyed or an individual incidentally killed during construction, PG&E will take appropriate actions as recommended by current CDFG guidelines. However, PG&E does not anticipate an incidental take occurring.	A qualified biologist conducts a preconstruction survey within the project area at least 30 days before the start of ground-disturbing activities and documents findings. Disturbance to burrowing owl is minimal. Burrowing owls are avoided to the extent possible. If construction causes the destruction of active burrows or owl mortality occurs, mitigation will be performed as required.	Prior to and during construction
APM Bio-27	If occupied burrowing owl habitat is found on or adjacent to the project area, the following measures to avoid, minimize, or mitigate impacts to burrowing owls will be incorporated into the project. <ul style="list-style-type: none"> • Confirmed unoccupied burrows in the area may be collapsed. • If occupied burrows are identified, reasonable protective buffer zones will be implemented. • All work will be coordinated with the CDFG. 	Disturbance to burrowing owl and their habitat is minimal. Burrowing owls are avoided to the extent possible.	During construction
APM Bio-28	Not applicable. Merged with Bio-29.	Not applicable.	
APM Bio-29	Suitable tricolored blackbird breeding habitat within the project area will be surveyed by a qualified biologist. Field surveys for the tricolored blackbird will occur prior to construction. If an active nest belonging to this species is located prior to construction and the nest cannot be avoided, PG&E will consult with the USFWS and CDFG to coordinate mitigation measures. Direct avoidance is possible by spanning suitable habitat.	Suitable breeding habitat within the project area is surveyed and documented. Disturbance to the tricolored blackbird and their habitat is minimal. The tricolored blackbird is avoided to the extent possible.	Prior to and during construction
APM Bio-30	If construction is scheduled during the tricolored blackbird breeding season, a buffer of a reasonable distance as determined by the on-site biological monitor, will be established around any active nests to protect breeding tricolored blackbirds.	Disturbance to the tricolored blackbird and their breeding habitat is minimal. The tricolored blackbird is avoided to the extent possible.	During construction
APM Bio-31	A biological monitor will remain on-site in sensitive habitat during breeding season while construction activity occurs to assist construction crews with information relative to nesting tricolored blackbirds, to minimize disturbance to habitat, and to maintain a buffer of a reasonable distance around active nests. These measures will be implemented to lessen the chance of nest abandonment by this sensitive species.	Disturbance to the tricolored blackbird and their breeding habitat is minimal. The tricolored blackbird is avoided to the extent possible.	During construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-32	During the spring breeding season (and prior to start of construction), a survey of the construction area for potential sensitive raptor habitat will be performed by a qualified biologist. It is expected that if construction occurs in suitable habitat before the onset of the breeding season, the construction disturbance will cause the raptors to seek alternate sites for breeding and nest construction.	Raptor surveys before the spring breeding season (and prior to start of construction) are performed and documented. Disturbance to breeding raptors is minimal. Breeding raptors are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	Prior to and during construction
APM Bio-33	If avoidance of active raptor nests is not practicable, a buffer of a reasonable distance will be maintained around any active raptor nest.	Disturbance to breeding raptors is minimal. Breeding raptors are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	During construction
APM Bio-34	If construction activities do not start until the onset of the nesting season for raptors (generally March through September), a qualified biologist will conduct a raptor survey at the site and of the surrounding area within 500 feet.	Raptor surveys at the site and of the surrounding area within 500 feet are conducted and documented. Disturbance to breeding raptors is minimal. Breeding raptors are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	Prior to and during construction
APM Bio-35	In the event an active raptor nest is found within 500 feet of the work area, a qualified biological monitor will be provided by PG&E, and remain on-site during construction activities to ensure there is no nest abandonment.	Disturbance to breeding raptors is minimal. Breeding raptors are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	During construction

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Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Bio-36	During the spring breeding season (and prior to start of construction), the construction area will be surveyed for potential breeding passerine birds. If active nests or breeding species are located prior to construction, PG&E will consult with the USFWS and CDFG to coordinate avoidance if the active nests cannot be avoided.	Surveys for potential breeding birds before the spring breeding season (and prior to start of construction) are performed and documented. Disturbance to breeding birds is minimal. Breeding birds are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	Prior to and during construction
APM Bio-37	If construction is scheduled during the passerine breeding season, a sufficient buffer will be observed around active nests.	Disturbance to breeding birds is minimal. Breeding birds are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	During construction
APM Bio-38	A biological monitor will be present during passerine breeding season to ensure no construction activity results in nest abandonment.	Disturbance to breeding birds is minimal. Breeding birds are avoided to the extent possible. No nest abandonment occurs as a result of construction activities.	During construction
APM Bio-39	Within 30 days prior to the commencement of construction activities, a qualified biologist will survey for kit fox dens within the area that will be disturbed, including an area of 100 feet surrounding the work area. Any potential den will be monitored for evidence of kit fox use by placing a tracking medium at den entrances for at least three consecutive nights. If an occupied den is found, progressive plugging of the den may be employed to discourage use, and the den closed after it is determined to be unoccupied for a minimum of three consecutive nights.	A documented survey for potential San Joaquin kit fox dens will be performed within 30 days prior to the commencement of construction. Active dens are monitored, progressively plugged to discourage use, and closed after being determined to be unoccupied.	Prior to and during construction
APM Bio-40	Not applicable. Merged with Bio-3.	Not applicable.	

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APM Bio-41	Construction will be limited to the hours between 7 a.m. and 6 p.m., where construction methods allow.	Disturbance to kit fox is minimal. Kit fox are avoided to the extent possible.	During construction
APM Bio-42	Off-road traffic outside of the designated project area will be prohibited.	Disturbance to kit fox is minimal. Kit fox are avoided to the extent possible.	During construction
APM Bio-43	To prevent accidental entrapment of kit fox during construction, all excavated holes or trenches will be covered at the end of each workday with plywood or similar materials. Before such holes are filled they will be thoroughly inspected for trapped animals. In the event of a trapped animal, ramps or other structures will be installed immediately to allow the animal to escape, or the USFWS will be contacted for advice. PG&E will appoint a representative who will notify the USFWS and CDFG immediately in the event of an accidental death or injury to a kit fox during project-related activities and a follow-up letter will be submitted within three working days of the accident.	Disturbance to San Joaquin kit fox is minimal. San Joaquin kit fox are avoided to the extent possible.	During construction
APM Bio-44	Not applicable. Merged with Bio-25.	Not applicable.	
APM Bio-45	Field surveys for the San Joaquin pocket mouse will be conducted by a qualified biologist before construction begins. If this species is located prior to or during construction, PG&E will consult with the USFWS to coordinate avoidance.	Prior to construction, field surveys are conducted and documented. Disturbance to San Joaquin pocket mouse is minimal. San Joaquin pocket mice are avoided to the extent possible.	Prior to and during construction
APM Bio-46	Before the spring breeding season for bats (and prior to start of construction), a survey of the construction area for roosting or maternity colonies will be performed by a qualified biologist. It is expected that if construction occurs near suitable roosting habitat before the onset of breeding season, the construction disturbance will cause the bats to seek alternate sites for breeding and nest construction.	Surveys for roosting or maternity colonies before the spring breeding season (and prior to start of construction) are performed and documented. Disturbance to roosting or maternity colonies is minimal. Roosting or maternity colonies are avoided to the extent possible.	Prior to and during construction
APM Bio-47	If avoidance of active bat roosting or maternity colonies is not practicable, a sufficient buffer will be maintained around any bat roosting or maternity colony.	Disturbance to roosting or maternity colonies is minimal. Roosting or maternity colonies are avoided to the extent possible.	During construction

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APM Bio-48	In the event that a roosting bat or maternity colony occurs within or near the project area, a qualified biological monitor will be provided by PG&E, and remain on-site during construction activities to ensure there is no nest abandonment.	Disturbance to roosting or maternity colonies is minimal. Roosting or maternity colonies are avoided to the extent possible.	During construction

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Special Status Plant Species	<p>B-1 Preserve and/or restore impacted plant populations. Should one or more populations of round-leaved filaree (<i>Erodium macrophyllum</i>) or showy madia (<i>Madia radiata</i>) be detected within the project footprint, then one of the following measures shall be implemented to offset permanent impacts to these plant populations.</p> <ul style="list-style-type: none"> • <i>Avoid special status plants.</i> In consultation with a botanist, and to the maximum extent practicable, the project shall be constructed and operated in such a way as to avoid substantial direct and indirect impacts (e.g., the establishment of an appropriate-sized buffer) to these species. Avoidance measures include, but are not limited to, establishment of an appropriate-size buffer (e.g., installation of exclusion fencing) to ensure that identified populations are not disturbed during construction (e.g., human intrusion by motorized vehicles). • <i>Implement a site restoration plan.</i> A detailed Special Status Plant Species Restoration Plan shall be developed in consultation with a qualified restoration ecologist and shall identify measures allowing for the restoration of these plant populations at a minimum of a 1:1 replacement-to-loss ratio (i.e., one individual replanted for each individual lost). This plan shall be submitted to the CPUC for approval. The restoration plan shall: <ol style="list-style-type: none"> 1. Designate location of onsite areas to restore lost plant populations. Sufficient habitat amongst the proposed development area should exist for onsite restoration. Appropriate habitat could be created on suitable soils. 2. Describe the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can be established through direct seeding practices and/or transplanting container-grown plants into existing suitable habitat. 3. Develop a timetable for implementation of the restoration plan 4. Develop a monitoring plan and performance criteria. 5. Describe remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria. 6. Describe site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife. • <i>Provide offsite mitigation.</i> If a site restoration plan is not feasible, mitigation for these plant species shall be accommodated via offsite habitat creation or enhancement or through the purchase of credits from a mitigation bank. 	Special status plants are avoided, restored according to approved plan, or replaced via offsite mitigation.	Prior to and during construction
Special Status Animal Species	<p>B-2 Offset for loss of burrowing owl habitat. Per the Resource Management Plan (RMP) adopted by the City of Antioch General Plan, loss of burrowing owl habitat (a grassland species located on lands east of Deer Valley Road) shall be mitigated at a loss to mitigation ratio of 0.5:1 to 1:1. The Resource Management Plan allows for mitigation ratios to be reduced or discounted between 25% and 50% if grassland habitat is preserved within the FUA1 Plan Area or in strategically important grassland areas identified in the RMP.</p>	Burrowing owls habitat is replaced or mitigated as specified by the Resource Management Plan.	Prior to and during construction

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Special Status Animal Species	B-3 Protect San Joaquin kit fox. The applicant shall follow the <i>Standardized Recommendations for Protection of the Kit Fox Prior to or During Ground Disturbance</i> developed by the U.S. Fish and Wildlife Service (1999).	Kit fox are protected according to agency recommendation.	During construction
Loss of Riparian Habitat	B-4 Restore lost riparian habitat. Any woody vegetation removed to accommodate bridge construction (e.g., elderberry, willow) within the riparian corridor of Sand Creek shall be replaced at a minimum of a 1:1 replacement-to-loss ratio or as set forth by the California Department of Fish and Game. Plantings shall be native species that are contract grown from local stock (within 5 miles of the site), if feasible.	Woody vegetation is replaced as specified.	During construction
Jurisdictional Waters	B-5 Avoid jurisdictional waters. Construction of all project components shall avoid work below the ordinary high water level, to the extent feasible. For any construction below the ordinary high water level of the creek, a mitigation plan shall be developed that either results in the creation of new jurisdictional waters as replacement for those lost or enhances the quality of existing jurisdictional waters for native plants and wildlife. The mitigation plan for wetland impacts shall be submitted to the CPUC with supporting documentation indicating compliance with USACE, CDFG, and RWQCB requirements.	Construction avoids work within jurisdictional waters and mitigation plan complies with agency requirements.	Prior to and during construction
Cultural Resources			
APM Cult-1	Prior to the initiation of construction or ground-disturbing activities, PG&E will train all construction personnel to understand the potential for exposing subsurface cultural resources and to recognize possible buried cultural resources. Training will inform all construction personnel of the anticipated procedures that will be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains and their treatment.	Construction personnel sign an environmental training attendance sheet. No damage to cultural resources or human remains results from project construction.	Prior to and during construction
APM Cult-2	Upon discovery of possible buried cultural materials (including potential Native American skeletal remains), work in the immediate area of the find will be halted and PG&E's archaeologist will be notified. Once the find has been identified and evaluated, PG&E's archaeologist will make the necessary plans for treatment of the find(s) and mitigation of impacts if the finds are found to be significant according to CEQA. State law will be followed in the event of the exposure of Native American skeletal remains.	No damage to cultural or human remains results from the project. Any discovered cultural resources are treated according to agency-approved mitigation and in compliance with state and federal regulations.	During construction

Table C-1. Mitigation Monitoring Plan

Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Cultural Resources	CR-1 Install pre-construction fence to protect historical resource. Prior to the initiation of construction or ground-breaking activities, archaeologists shall install temporary fencing along the southeast boundary of historic resource site CA-CCO-682H. The fence shall be situated 10 to 15 feet from the northwest side of the existing access road, beginning at the Sand Creek crossing and continuing north for approximately 200 feet. The fence shall be erected to form a protective buffer around the general site boundaries so the actual site boundaries are not revealed. If relocation of the creek crossing disturbs the area circumscribed by the fence, then project archaeologists shall establish a research and data recovery program to test the site and determine the significance of the resource. The data recovery program shall include procedures to properly report and curate the resource in a manner consistent with standards mandated by the California Office of Historic Preservation (OHP). The research and data recovery program shall be submitted to the CPUC for review and approval at least 30 days before disruption of the pre-construction fence.	Protective fencing is installed and, if needed, a cultural resource research and data recovery program is submitted to CPUC and implemented.	Prior to and during construction
Geology and Soils			
APM Geo-1	Surface disturbance will be minimized to the extent consistent with safe and efficient completion of the project scope of work.	Surface disturbances are minimized.	During construction
APM Geo-2	Topsoil will be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil will be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that will not be subject to additional disturbance will be stabilized by landscaping. Cultivated areas will be tilled for seedbed preparation.	Topsoil is salvaged and reused, and landscaping stabilizes soils.	During construction
APM Geo-3	Erosion control BMPs will be used where grading occurs.	Best management practices are used (see also APM Hydro-1).	During construction
Hazards and Hazardous Materials			
APM Haz-1	A Hazardous Substance Control and Emergency Response Plan will be prepared for the project. It will prescribe hazardous material handling procedures to reduce the potential for a spill during construction or exposure of the workers or public to a hazardous material. The plan will provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during field activities. The plan will be submitted to Contra Costa County's Certified Unified Program Agency (CUPA), or another appropriate oversight agency, for approval prior to initiating field activities.	A Hazardous Substance Control and Emergency Response Plan is prepared and implemented throughout construction. All hazardous materials are handled in accordance with applicable local, state, and federal laws. No persons or sensitive resources are harmed through contact with hazardous materials.	Prior to and during construction

Table C-1. Mitigation Monitoring Plan

Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Haz-2	<p>Emergency-spill supplies and equipment will be kept adjacent to all areas of work and in staging areas, and will be clearly marked. Oil-absorbent materials, tarps, and storage drums will be used to contain and control any minor releases. Detailed information for responding to accidental spills, and for handling any resulting hazardous materials, will be provided in the project's Hazardous Substances Control and Emergency Response Plan.</p> <p>An environmental training program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention, and will include a review of the Hazardous Substances Control and Emergency Response Plan and the Storm Water Pollution Prevention Plan.</p>	<p>Emergency spill cleanup supplies and equipment are kept on-site and immediately available in the event of a spill. No persons or resources are harmed by hazardous materials during construction. Response to spills and handling of any resulting hazardous materials is performed in accordance with the project's Hazardous Substances Control and Emergency Response Plan.</p>	<p>Prior to and during construction</p>
		<p>Construction personnel sign an environmental training attendance sheet. All measures in the Health and Safety Plan, Hazardous Substances Control and Emergency Response Plan, SWPPP, and Spill Prevention, Countermeasure, and Control (SPCC) Plan are implemented. No persons or resources are harmed by hazardous materials during construction. All hazardous materials are handled, stored, transported, and disposed of in accordance with applicable local, state, and federal regulations.</p>	

Table C-1. Mitigation Monitoring Plan

Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Hazards and Hazardous Materials	H-1 Stop work upon encountering contamination. If evidence of soil and/or groundwater contamination is encountered during grading or excavation, work shall stop immediately. The construction superintendent, designated PG&E and CPUC personnel, and applicable regulatory agencies shall be notified immediately. Contingency planning for such an event shall be conducted prior to start of work. The nature and extent of contamination shall be identified through soil and/or water testing, and appropriate remedial action proposed and approved by the CPUC prior to disturbing additional material.	Monitor construction activities and, if contamination is discovered, ensure that construction activities are ceased and agencies notified.	Prior to and during construction
Hydrology and Water Quality			
APM Hydro-1	PG&E will develop a SWPPP that will describe BMPs to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction.	All appropriate BMPs are utilized as directed by the SWPPP. Project water quality management activities comply with all applicable federal, state, and local regulatory requirements.	Prior to and during construction
APM Hydro-2	PG&E will develop a Spill Prevention, Countermeasure, and Control (SPCC) plan that will describe BMPs for preventing, controlling, and cleaning up hazardous material spills.	All BMPs are utilized as directed by the SPCC Plan.	Prior to and during construction and operation
APM Hydro-3	A worker-education program will be established for all field personnel prior to initiating fieldwork, to provide training in the appropriate application and construction of erosion and sediment control measures. This education program will also discuss appropriate hazardous materials management and spill response.	Construction personnel sign an environmental training attendance sheet. All measures in the Health and Safety Plan, Hazardous Substances Control and Emergency Response Plan, SWPPP, and SPCC Plan are implemented. No persons or resources are harmed by hazardous materials during construction. All hazardous materials are handled, stored, transported, and disposed of in accordance with applicable local, state, and federal regulations.	Prior to and during construction

Table C-1. Mitigation Monitoring Plan

Impact	Applicant-Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM Hydro-4	The SPCC plan will include engineered methods for containing and controlling an oil release, including a water-collection system and retention pond equipped with an oil/water separator. This collection and retention system will also regulate the release of stormwater runoff from the paved portion of the substation. The retention pond will serve as a settling basin to reduce turbidity and sedimentation downstream. Oil-absorbent material, tarps, and storage drums will be present on-site to contain and control any minor releases.	During operations and maintenance, all measures in the SPCC Plan are implemented and emergency spill cleanup supplies and equipment are kept on-site and immediately available in the event of a spill. No persons or resources are harmed by hazardous materials during operations and maintenance.	Prior to and during operation
Hydrology and Water Quality	W-1 Prepare a hydraulic and erosion study of the proposed bridge, and design to ensure no adverse hydraulic or erosion impact. Prior to issuance of a grading permit, a hydraulic/erosion analysis shall be conducted by a registered civil engineer demonstrating the effect of the proposed bridge on the Sand Creek floodplain, and documenting any increased erosion hazard. The bridge design shall include features to ensure no adverse impact. If needed, modifications could include, but not be limited to, removal of the existing culvert, channel widening, and/or erosion-control measures.	Bridge design conforms with hydraulic and erosion study recommendations.	Prior to and during construction
Noise			
APM Noise-1	All construction equipment will use noise reduction features that are no less effective than those originally installed by the manufacturer.	Noise-related complaints from nearby residents are minimized.	During construction
APM Noise-2	Construction will be limited to the hours between 7 a.m. and 6 p.m., except for California Independent System Operator-mandated interconnection clearances and where construction methods require extended work.	Noise-related complaints from nearby residents are minimized.	During construction
APM Noise-3	The three 45 MVA, 230/21 kV transformers will meet a 74 dBA rating.	Noise-related complaints from nearby residents are minimized.	During operation
APM Noise-4	The substation will be designed to maintain a minimum 200-foot distance between the transformer back and the nearest sensitive receptors to maintain noise levels below the 55 dBA ordinance during day time full load operation.	Noise-related complaints from nearby residents are minimized.	Prior to and during construction
APM Noise-5	Transformers will be operated at reduced loading and without fan cooling between the hours of 10 p.m. and 7 a.m. where operationally possible.	Noise-related complaints from nearby residents are minimized.	During operation

Note: Applicant-Proposed Measures appear in the Proponent's Environmental Assessment (A.05-08-022, Exhibit A).
Source: PG&E, 2005; Revised Noise-3, April 21, 2006.