6. Mitigation Monitoring Plan

PG&E proposes to construct and operate the Embarcadero-Potrero 230 kV Transmission Project (Proposed Project). The Initial Study assesses the Proposed Project's potential environmental effects. The Initial Study relies on information in the Proponent's Environmental Assessment (PEA), project site visits, and supplemental analysis. The majority of the Proposed Project's potential 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 APMs 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.

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

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

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

Final language of the MMCRP will be made in consultation with PG&E. Drafted language for the project variance and dispute resolution protocols are provided below.

6.1 Minor Project Changes or Variances

The CPUC Project Manager along with the CPUC Monitoring Team will ensure that any process to consider minor project changes that may be necessary due to final engineering or variances or deviations from the procedures identified under the monitoring program are consistent with CEQA requirements. No minor project changes or variances will be approved by the CPUC if they are located outside of the geographic boundary of the project study area. Variances are limited to minor project changes that will not trigger other permit requirements unless the appropriate agency has approved the change, and that

clearly and strictly comply with the intent of the mitigation measure or applicable law or policy. This determination is ministerial, and shall be made by the CPUC Project Manager. PG&E shall seek any other project refinements by a petition to modify. Should a project change or refinement require a Petition for Modification, supplemental environmental review under CEQA will be required.

Any proposed deviation from the approved project, adopted mitigation measures, APMs, and correction of such deviation, will be reported immediately to the CPUC Project Manager for his or her review. The CPUC Monitoring Team will review the variance request to ensure that all of the information required to process the minor project change is included, and then forward the request to the CPUC Project Manager for review and approval. The CPUC Project Manager may request a site visit from the CPUC EM, or may need additional information to process the variance. In some cases, project refinements may also require approval by jurisdictional agencies. In general, a minor project change request must include the information listed below.

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

6.2 Dispute Resolution

It is expected that the Mitigation Monitoring Plan will reduce or eliminate many potential disputes. However, even with the best preparation, disputes may occur. Issues should be first addressed at the field level informally between the CPUC EMs and PG&E's EMs at the regular progress meetings. Questions may be raised to the PG&E Project Environmental Manager or PG&E Project Construction Manager. Should the issue persist or not be resolved at these levels, the following procedures will be used:

- **Step 1.** Disputes and complaints (including those of the public) should be directed first 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 this informal process in the field fail, the CPUC Project Manager may issue a formal letter requiring corrective actions to address the unresolved or persistent deviations from the Proposed Project or adopted MMP.
- **Step 3.** If a dispute or complaint regarding the 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 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 on 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 Commission 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 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Aesthetics		
APM AE-1	**Nighttime Lighting to Minimize Potential Visual Impacts.** The new switchyard may include outdoor lighting for safety and security purposes. Design and layout for new outdoor lighting at the switchyard will incorporate measures, such as use of non-glare or hooded fixtures and directional lighting, to reduce spillover into areas outside the switchyard site and minimize the visibility of lighting from offsite locations. The new lighting will be operated only as needed and will be designed to avoid casting light or glare offsite.	Review design and layout to ensure that lighting spillover is minimized from off-site locations	Prior to construction and during operation
	Air Quality		
APM AQ-1	**Minimize Fugitive Dust.** Consistent with Table 2 of the [1999] BAAQMD CEQA Guidelines, PG&E will minimize dust emissions during construction by implementing the following measures: ▪ Water all active construction areas at least twice daily. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. ▪ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites. ▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. ▪ Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's phone number will also be visible to ensure compliance with applicable regulations. Since these measures are consistent with the BAAQMD CEQA Guidelines, construction emissions are considered to be less than significant (BAAQMD, 1999; BAAQMD, 2012c). Note that implementation of the first measure listed above would not apply to paved areas with no exposed soil or when rains are occurring.	Ensure particulate matter emissions are minimized during construction	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM AQ-2	**Minimize Construction Exhaust Emissions.** The following measures will be implemented during construction to further minimize the less-than-significant construction exhaust emissions: ▪ Encourage construction workers to take public transportation to the project site where feasible. ▪ Minimize construction equipment exhaust by using low-emissions or electric construction equipment where feasible. Develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used would achieve a project-wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. ▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of five consecutive minutes required by regulation (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine will be shut off. ▪ Minimize welding and cutting by using compression or mechanical applications where practical and within standards. ▪ Encourage use of natural gas or electric powered vehicles for passenger cars and light-duty trucks where feasible and available.	Ensure emissions from construction equipment exhaust are reduced	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM AQ-3	**Minimize Potential Naturally Occurring Asbestos (NOA) Emissions.** The following measures will be implemented prior to and during construction to minimize the potential for NOA emissions: ▪ Prior to commencement of construction, samples of the Potrero Switchyard construction area will be analyzed for presence of asbestos, serpentinite or ultramafic rock ▪ If asbestos, serpentinite or ultramafic rock is determined to be present, implement all applicable provisions of the Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (17 CCR 93105), including: *For disturbed areas of 1.0 acre or less:* — Construction vehicle speed at the work site will be limited to 15 miles per hour or less — Prior to any ground disturbance, sufficient water will be applied to the area to be disturbed to prevent visible emissions from crossing the property line — Areas to be graded or excavated will be kept adequately wetted to prevent visible emissions from crossing the property line — Storage piles will be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile — Equipment will be washed down before moving from the property onto a paved public road — Visible track-out on the paved public road will be cleaned using wet sweeping or a High Efficiency Particular Air filter equipped vacuum device within 24 hours *For disturbed areas of greater than 1.0 acre:* — Submit an Asbestos Dust Mitigation Plan to the BAAQMD and obtain approval prior to commencement of construction — Implement and maintain the provisions of the approved Asbestos Dust Mitigation Plan from the beginning of construction through the duration of the construction activity	Ensure soil sample analysis and implementation of measures, if necessary, to minimize the potential for naturally occurring asbestos emissions	Prior to and during construction
Construction-Phase Air Quality	**MM A-1: Achieve minimum emission standards.** This measure incorporates and supplements portions of APM AQ-2, Minimize Construction Exhaust Emissions. PG&E shall maintain all construction equipment properly in accordance with manufacturer's specifications, and ensure that equipment is checked by a certified visible emissions evaluator. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1). All marine commercial harbor craft, except gasoline-powered small craft, shall meet at a minimum the Tier 2 Marine Engine Emission Standards (CCR Title 17, Sec. 93118.5).	Ensure proper maintenance and certification of equipment to minimize exhaust emissions	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Biological Resources		
APM BIO-1	**General Measures.** Environmental awareness training will be conducted for onsite construction personnel prior to the start of construction activities. The training will explain the APMs and any other measures developed to prevent impacts on special-status species, including nesting birds. The training will also include a description of special-status species and their habitat needs, as well as an explanation of the status of these species and their protection under the ESA, CESA, and other statutes. A brochure will be provided with color photos of sensitive species, as well as a discussion of any permit measures. A copy of the training and brochure will be provided to CPUC at least 30 days prior to the start of construction for project files. This APM also includes the following measures: ▪ Biological monitor: A qualified biological monitor will verify implementation and compliance with all applicant proposed measures. The monitor will have the authority to stop work or determine alternative work practices where safe to do so, as appropriate, if construction activities are likely to impact sensitive biological resources. ▪ Litter and trash management: All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers. Trash containers will be removed from the project area at the end of each working day. ▪ Parking: Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas as identified in this document. ▪ Pets and firearms: No pets or firearms will be permitted at the project site.	Avoid biological resources; review training and brochure; ensure construction personnel sign an environmental training attendance sheet.	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM BIO-2	**Preconstruction Surveys.** Preconstruction bird nesting surveys will be conducted in the project area no more than 15 days before work is performed in the nesting season February 1 to August 15. Surveyors will search for all potential nest types (e.g. ground, cavity, shrub/tree, structural, etc.) and determine whether or not the nest is active. A nest will be determined to be active if eggs or young are present in the nest. Upon discovery of active nests, appropriate minimization measures (e.g., buffers or shielding) will be determined and approved by the biologist. PG&E's biological monitor will determine the use of a buffer or shield and work may proceed based upon: acclimation of the species or individual to disturbance, nest type (cavity, tree, ground, etc.), and level and duration of construction activity. In the unlikely event a listed species is found nesting nearby in this urban environment, CDFG and USFWS will be notified if a nest of a listed species is identified in the area of analysis, and the CPUC will be provided with nest survey results, if requested. When active nests are identified, monitoring for significant disturbance to the birds will be implemented. Nest checks will occur each day construction is occurring, documented in a nest check form to be included in the Worker's Environmental Awareness Training package. Typically a nest check will have a minimum duration of 30 minutes, but may be longer or shorter, or more frequent than one check per day, as determined by PG&E's biological monitor based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.). The biological monitor will record the PG&E construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. Non-PG&E activities in the area should also be recorded (e.g. adjacent construction sites, roads, commercial/industrial activities, residential activities, etc.). The biological monitor will record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest. Should the PG&E biological monitor determine project activities are causing or contributing to nest disturbance that might lead to nest failure, the PG&E biological monitor will coordinate with the Construction Manager to limit the duration or location of work, and/or set other limits related to use of project vehicles, helicopters, chainsaws, and/or heavy equipment. Should PG&E's biological monitor determine that project activities are not resulting in significant disturbance to the birds, construction activity will continue and nest checks while work is occurring will be conducted periodically.	Survey for nesting birds in accordance with CDFW guidelines and submit nest survey results to CPUC, if requested; monitor birds and limit duration or location of work, if necessary [Superseded by MM B-4]	Prior to and during construction
APM BIO-3	**Seasonal Work Windows.** Where feasible, hydroplow cable installation will be conducted between March 1 and November 30, based on the seasonal work windows for steelhead, Chinook salmon, and Pacific herring (USEPA et al., 1996). If work is planned to occur outside of this work window, PG&E will coordinate any additional measures, such as monitoring for herring spawn, with NMFS, USFWS, and CDFG.	Conduct hydroplow cable installation between March 1 and November 30, if feasible, or ensure coordination of additional measures with NMFS, USFWS, and CDFG	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM BIO-4	**Herring Spawning Protection.** If work occurs within the Bay in December, January, or February, a qualified observer shall monitor hydroplow and HDD connection activities when in proximity (about 660 to 980 feet, or 200 to 300 meters) to potential Pacific herring spawning sites. Herring spawning sites are generally located in shallow water near the surface, and are visible as a large mass of herring eggs, which are adhesive, and attach most commonly to eelgrass or other algae, and can also attach to piers and other features; no eelgrass beds occur in the work areas. If herring spawning sites are observed within 660 feet (200 meters) of the work site by a qualified monitor stationed on a nearby boat, pier, or beach, all in-water activities such as hydroplowing shall be stopped within that distance or as otherwise specified by the resource agencies for 2 weeks.	Monitor hydroplow and HDD connection activities and stop work for 2 weeks if herring spawning sites are observed within 660 feet of the work site	During construction
APM BIO-5	**Aquatic Habitat Protection.** PG&E will acquire the necessary permits to conduct cable installation activities in the San Francisco Bay. PG&E will comply with all conditions and requirements of these permits and certification.	Ensure compliance with conditions and requirements of permits	Prior to construction
APM BIO-6	**Fish Screen.** All hydroplow water jet intakes will be covered with a mesh screen to minimize the potential for impingement or entrainment of fish species.	Ensure mesh screens are installed on water jet intakes [Supplemented by MM B-3]	Prior to and during construction
Special-Status Species	**MM B-1: Implement an Invasive Marine Species Control Plan**. PG&E shall develop and implement an Invasive Marine Species Control Plan prior to any in-water work. The plan shall include measures designed to effectively limit the introduction and spread of invasive marine species. PG&E shall submit this plan to the CPUC for approval at least 60 days before the start of marine activities. Vessels originating outside San Francisco Bay shall follow existing compliance measures established by the California State Lands Commission as part of the Marine Invasive Species Program, relating to hull fouling and ballast water control. In addition, if used outside the San Francisco Bay area prior to use on this project, the hydroplow and associated equipment shall be examined and any invasive species handled and disposed of according to the developed plan. Similarly, if the equipment is to be used outside the San Francisco Bay after this use, the equipment shall be examined and cleaned prior to leaving the area. PG&E shall coordinate plan preparation with the CPUC, U.S. Coast Guard, U.S. Army Corps of Engineers, National Marine Fisheries Service [NMFS], Regional Water Quality Control Board, and California Department of Fish and Wildlife [CDFW] as appropriate. The plan shall include: environmental training for all crew members working in marine areas addressing invasive marine species and actions to be taken to prevent release and spread of invasive marine species. Training shall include procedures for safe removal and disposal of any invasive species found on project equipment. Before and after boats and equipment leave the water, a qualified biologist (approved by the CPUC) shall assist crew members in removing plants, plant debris, and any other potentially invasive species.	Verify contents of Invasive Marine Species Control Plan; observe use and condition of equipment according to the plan	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Special-Status Species	**MM B-2: Protect marine mammals from high noise levels.** PG&E shall consult with the National Marine Fisheries Service (NMFS) to determine whether Incidental Harassment Authorization (IHA) or Letter of Authorization (LOA) for marine mammals is necessary. If NMFS determines that an IHA or LOA is not necessary, PG&E shall submit evidence of this determination to the CPUC prior to the start of marine construction activities. ***Monitoring.*** PG&E shall prepare and implement a Marine Mammal Monitoring Plan. PG&E shall submit this plan to the CPUC for approval before the start of marine activities. The Marine Mammal Monitoring Plan shall include the following elements: ▪ Establishment of an appropriate buffer zone around the work area, generally 400 feet or as defined in consultation with NMFS, that would require work be slowed or otherwise modified if the work approaches a marine mammal within the established buffer zone. ▪ A qualified biologist (approved by the CPUC) shall be on board the hydroplowing ship during construction. ▪ The qualified biologist shall monitor marine mammal presence and behavior in the vicinity of the ship and the surface above hydroplow operations. ▪ The qualified biologist shall have the authority to slow or stop work, if safe to do so, and shall consult with the CPUC and NMFS about the implementation of additional minimization measures if, based on observations, project construction appears to be disrupting marine mammal behavior in ways that indicate harassment or injury. ▪ Any disruption of marine mammal behavioral patterns shall be reported to the CPUC and NMFS within two working days with a description of actions taken to curtail work and reduce noise source levels and a demonstration that the disruption caused no potential for injury or mortality. ▪ PG&E shall submit weekly reports of marine mammal observations to the CPUC during marine construction activities. As an alternative to preparing and implementing the Marine Mammal Monitoring Plan specified in this mitigation measure, PG&E may provide adequate evidence, to the CPUC for approval at least 30 days before the start of marine activities, based upon actual data collected for this project or other projects using similar equipment in a similar submarine environment, that demonstrates to the satisfaction of the CPUC that underwater noise source levels generated by the project hydroplow and marine activities cannot not be reasonably expected to exceed the 180 dB threshold recently used by NMFS for marine mammal protection.	Review information on noise source levels; verify contents of Marine Mammal Monitoring Plan; observe buffer zones and modifications to work practices; review report of behavioral patterns	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Special-Status Species	**MM B-3: Protect marine species**. PG&E shall consult with CDFW to obtain an Incidental Take Permit for longfin smelt or a determination from the agency that the project is not likely to adversely affect longfin smelt. ***Fish screens.*** As stated in APM BIO-6, all hydroplow water jet intakes shall be covered with a mesh screen or screening device to minimize potential for impingement or entrainment of fish species, especially longfin smelt. Additional requirements to minimize or prevent entrainment and impingement are also required to supplement APM BIO-6: ▪ The mesh screen or screening device shall comply with applicable state (CDFW) and federal (NMFS) criteria for screening intakes such as those found in NMFS's 1996 Juvenile Fish Screen Criteria for Pump Intakes or as required by NMFS and CDFW. ***Monitoring.*** A qualified biologist (approved by CPUC) shall verify that the screens are in place at the beginning of each hydroplow work period and examine them for impinged longfin smelt or other fish species at the end of each work period, or whenever the screens are cleaned or the hydroplow is raised out of the water during the cable laying. Injury or mortality shall be reported to CPUC within two working days, with a discussion of actions taken to prevent or minimize any additional longfin smelt injury or mortality or as otherwise determined with CDFW and NMFS. Any injury or mortality of longfin smelt shall also be reported as determined in permitting discussions with CDFW and NMFS.	Verify use and condition of specified screens before and after each work period; review report of injury or mortality	Prior to and during construction
Special-Status Species	**MM B-4: Avoid impacts to nesting birds.** This measure supersedes APM BIO-2. If onshore construction activities occur during the avian nesting season, a preconstruction survey for nesting birds shall be conducted by a qualified wildlife biologist (PG&E employees or contractors, approved by the CPUC) within 7 days prior to the start of noise-generating construction or vegetation trimming or removal activities in any new work area. Surveys shall cover all public areas within 50 feet of work sites. For San Francisco County, the avian nesting season regularly occurs between February 15 and August 31, but a survey may be appropriate earlier or later depending on species, location, and weather conditions as determined by the qualified wildlife biologist. Work areas that cause no appreciable increase in ambient noise, such as where work is performed manually, by hand, or on foot and activities that cause no observable disturbances to nesting birds (e.g., operating switches, driving on access roads, normally occurring activities at substations, staging or laydown areas) would not warrant a preconstruction survey. ***Protective measures for birds.*** If an active bird nest for a species covered by the Migratory Bird Treaty Act or California Fish and Game Code is found within 50 feet of project work areas, the qualified biologist shall determine appropriate protective measures to reduce the likelihood of nest failure. Protective measures for active nests shall include one or more of the following: avoiding or limiting certain project-related activities within a designated buffer zone surrounding the nest, shielding of the nest from project disturbance using a temporary soundwall or visual screen, or other shielding method as appropriate. The width of the buffer zone (in which work may not occur) shall be based on the disturbance tolerance and conservation status of the species, and	Survey and establish buffers for nesting birds	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	the nature of planned construction activities and other human activities in the immediate area. Buffer zones of less than 50 feet shall be allowed only when planned construction activities involve relatively low disturbance or birds have demonstrated tolerance of noise and disturbance. Buffers shall not apply to construction-related vehicle or pedestrian traffic using city streets and sidewalks. As appropriate, exclusion techniques may be used for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment. An example exclusion technique is covering equipment with tarps. Bird species found building nests within the work areas after specific project activities begin may be assumed tolerant of that specific project activity; the CPUC approved, qualified biologist shall implement an appropriate buffer or other appropriate measures to protect such nests, after taking into consideration the position of the nest, the bird species nesting on site, the type of work to be conducted, and duration of the construction disturbance. ***Protective measures for special-status birds.*** If an active nest for a special-status bird is found, PG&E shall record the position of the nest in the monitoring report and notify the CPUC through the reporting process outlined below. The qualified biologist shall implement buffers and set other protective measures (described above), as appropriate, to protect special-status nesting birds from construction activities in consultation with CPUC, and as appropriate the California Department of Fish and Wildlife (CDFW) and/or United States Fish and Wildlife Service (USFWS). Buffer zones of less than 50 feet shall be allowed only when planned construction activities involve relatively low disturbance or birds have demonstrated tolerance of noise and disturbance. Requests for buffers of less than 50 feet for special-status nesting birds must be submitted to the CPUC's independent biologist(s) for review. The CPUC's independent biologist shall respond to PG&E's request for a buffer reduction (and buffer reduction terms) within one business day; if a response is not received, PG&E can proceed with the buffer reduction. If nesting birds in the presence of the CPUC-approved qualified biologist show signs of intolerance to construction activities within a reduced buffer zone, the qualified biologist shall reinstate the recommended buffer. The recommended buffer may only be reduced again following the same process, as identified above, and after the CPUC-approved, qualified biologist has determined that the nesting birds are no longer exhibiting signs of intolerance to construction activities. Nests shall be monitored daily by the qualified biologist when construction is active at that location. Any potentially significant construction-related disturbance shall be reported to CPUC, CDFW, and USFWS. ***Monitoring.*** Active nests shall be monitored at least once daily during construction until nestlings have fledged and dispersed or until nest failure has been documented. Daily nest checks shall be at least 30 minutes or more as determined by the qualified biologist based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.). The qualified biologist shall record the construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. The qualified biologist		

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	shall record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest. If the qualified biologist determines that project activities are contributing to nest disturbance, they shall notify CPUC (and CDFW/USFWS as appropriate in the case of special-status bird nests) and coordinate with the Construction Manager to limit the duration or location of work, and/or increase appropriate protective measures (as described above). ***Reporting.*** If there are active nests present within 50 feet of the project area during construction, a weekly written report shall be submitted to CPUC. A final report shall be submitted to CPUC at the end of each nesting season summarizing all nest monitoring results and nest outcomes for the duration of project construction. No avian reporting shall be required for construction occurring outside of the nesting season and if construction activities do not occur within a reduced buffer during any calendar month. Nests located in areas of existing human presence and disturbance, such as in yards of private residences, or within commercial and or industrial properties are likely acclimated to disturbance and may not need to be monitored, as determined by the CPUC-approved, qualified biologist and approved by the CPUC's independent biologist. ***Permits.*** Prior to the start of construction, PG&E may obtain a permit authorized by Section 3503 and/or Section 3503.5 of the California Fish and Game Code, or by any regulation adopted pursuant thereto, pertaining to nesting birds. If PG&E obtains such a permit under the above authorities, where that permit conflicts with the measures outlined above, the conditions of the permit shall govern.		

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Cultural Resources		
APM CUL-1	**Pre-Construction Worker Cultural Resources Training.** Prior to construction, PG&E will design and implement a Worker Cultural Resources Training Program for all project personnel who may encounter and/or alter historical resources or unique archaeological properties. Construction supervisors, workers, and other field personnel will be required to attend the training program prior to their involvement in field operations. The program will be conducted in conjunction with other environmental awareness training and education for the project. The cultural resources training session will be led by a qualified instructor meeting the Secretary of Interior's Professional Qualification Standards as listed beginning on page 44716 of Volume 48 of the Federal Register and as may be updated by the National Park Service. This Program will minimally include: ▪ A review of the environmental setting (prehistory, ethnography, history) associated with the project; ▪ A review of Native American cultural concerns and recommendations during project implementation; ▪ A review of applicable federal, state, and local laws and ordinances governing cultural resources and historic preservation; ▪ A review of what constitutes prehistoric or historical archaeological deposits and what the workers should look out for; ▪ A discussion of site avoidance requirements and procedures to be followed in the event unanticipated cultural resources are discovered during construction; ▪ A discussion of procedures to follow in the event human remains are discovered during construction; ▪ A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies; ▪ A discussion of eligible and potentially eligible built environment resources and procedures to follow regarding minimizing vibration from equipment in designated areas; and ▪ A statement by the construction company or applicable employer agreeing to abide by the program conditions, PG&E policies, and applicable laws and regulations.	Review training program materials and ensure construction personnel sign an environmental training attendance sheet.	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM CUL-2	**Resource Avoidance.** There are no known archaeological or historical resources within the direct impact areas defined for the proposed route. In keeping with the intent of the NHPA and CEQA, PG&E's preferred approach for archaeological resources and historical resources is avoidance of impacts to significant (or unevaluated) resources. Where avoidance is not feasible, potential impacts to significant cultural resources must be treated in a way that is acceptable to PG&E, the State Historic Preservation Officer (SHPO), and if applicable, the local Native American community. Treatment might include data recovery excavations, public interpretation/education, Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) recordation, or other measures. If there is an unanticipated discovery of a buried archaeological deposit or human remains, or unanticipated impacts to a historical building cannot be avoided, PG&E will implement APM CUL-4, -5, and -7.	Avoid cultural resources or ensure that any discovered cultural resources are assessed and treated appropriately	During construction
APM CUL-3	**Construction Monitoring.** A professional archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards will monitor all project-related on-shore excavation that is within an area of moderate to high sensitivity for prehistoric or historical buried resources, as such areas are presented in PEA Appendix D (Nolte et al. 2012). This shall include monitoring areas within 167 feet (50 meters) of recorded or previously identified prehistoric and historical-era sites or features, APM CUL-3 will be guided by an Archaeological Monitoring and Inadvertent Discovery Plan, which will include the framework for evaluation and treatment of any unanticipated discoveries described in APM CUL-4. In addition to the monitoring archaeologist, a qualified maritime archaeologist will be on call during construction to assist with implementation of the Archaeological Monitoring and Inadvertent Discovery Plan should maritime resources be identified during excavation. If appropriately qualified, the same person may act as both the monitoring archaeologist and maritime archaeologist. This APM CUL-3 in combination with APM CUL-4 will ensure that archaeological resources will not be impacted during construction without adequate evaluation and any necessary actions (as further detailed in APM CUL-4 and the Archaeological Monitoring and Inadvertent Discovery Plan) to preserve information regarding impacted resources. Site assessment procedures and data recovery or other measures will be developed as part of the Archaeological Monitoring Plan and applied during the monitoring process.	Monitor for cultural resources within areas of moderate to high sensitivity for prehistoric or historical buried resources; assist with implementation of the Archaeological Monitoring and Inadvertent Discovery Plan	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM CUL-4	**Unanticipated Discoveries of Cultural Deposits.** In the event that previously unidentified archaeological, cultural, or historical sites, artifacts, or features are uncovered during implementation of the project, work will be suspended within 100 feet (30 meters) of the find and redirected to another location. PG&E's cultural resources specialist or designated representative will be contacted immediately to examine the discovery and determine if additional work is needed. If the discovery can be avoided or protected and no further impacts will occur, the resource will be documented on California Department of Parks and Recreation 523 forms and no further effort will be required. If the resource cannot be avoided and may be subjected to further impacts, PG&E or their representative will evaluate the significance of the discovery following federal and state laws outlined above and implement data recovery or other appropriate treatment measures if warranted. Evaluation of historical-period resources will be done by a qualified historical archaeologist while evaluation of prehistoric resources will be done by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.	Avoid unanticipated cultural resources or ensure implementation of data recovery or other appropriate treatment measures, if warranted [Superseded by MM C-1]	During construction
APM CUL-5	**Unanticipated Discovery of Human Remains.** If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman shall contact the PG&E cultural resources specialist, who will then call the City and County of San Francisco Medical Examiner. There shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until medical examiner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the medical examiner determines the remains to be Native American, he/she shall contact the NAHC within 24 hours. The NAHC will appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).	Ensure work within 100 feet of the find stops and that provisions in Health and Safety Code Sect. 7050.5 and Public Resources Code Sect. 5097.24 are followed appropriately.	During construction
APM CUL-6	**Vibrations to Historical Structures.** Historical buildings are present near the project route and may be vulnerable to damage from heavy equipment vibrations. To ensure that resources are not inadvertently damaged or impacted during construction implementation, the crews will be informed of historical structure locations and instructed to confine all excavation and backfill work to the existing city streets right-of-way (historical structure locations are depicted in PEA Appendix D (Nolte et al. 2012) as part of APM-CUL-1). Project construction in proximity to Station A will include the use of Tubex and the smallest possible machinery to minimize vibration effects. A structural engineer will check the condition of the building prior to construction. Once activities that result in vibration have begun, the engineer will check the condition of the building to monitor Station A during construction (at 25 percent, 50 percent, 75 percent, and 100 percent completion of excavation using heavy equipment) and assess the effects on the building. If the structural engineer determines that structural integrity is compromised, the interior of the building will be documented following the procedures outlined in APM-CUL-7.	Review training materials and ensure construction personnel sign an environmental training attendance sheet; review structural engineering results for Station A	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM CUL-7	**Record to Historic American Building Survey/Historic American Engineering Record Standards.** Station A's setting will be affected by construction of the GIS building. The currently visible exterior façade on the west side of the main turbine building may be blocked from view, and the brick wall that fronts Station A and that serves as a visual barrier will be partially or completely removed. Prior to construction, the setting and exterior of the Station and brick wall will be documented using HAER standards. These standards include large format photography of the structures, photo reproduction of historical plans, mapping, and a descriptive and historical narrative. The resulting documentation will be archived with PG&E, the SHPO, the Bancroft Library at the University of California Berkeley, the San Francisco Landmarks Preservation Advisory Board files at the San Francisco Planning Department, the Foundation for San Francisco's Architectural Heritage, and the San Francisco Public Library.	Review Station A setting and exterior documentation	Prior to construction
APM CUL-8	**Apply Secretary of the Interior Standards for the Treatment of Historic Properties to Brick Wall Modifications.** The gate in the brick wall that fronts Station A will be widened and the wall removed or modified to allow access for large transformer equipment and future maintenance activities. Modifications to or removal of the wall will follow the Secretary of the Interior Standards for the Treatment of Historic Properties (available at http://www.nps.gov/hps/tps/standguide/) and will be designed to be compatible with the historic character of Station A. PG&E will submit a draft of its design for the brick wall modifications to the Commission no less than 30 days prior to any alteration of the wall.	Review design of brick wall modification and ensure it follows the Secretary of the Interior Standards	Prior to construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Preservation of Unanticipated Discoveries	**MM C-1: Unanticipated Discoveries of Cultural Deposits.** This mitigation supersedes APM CUL-4. In the event that previously unidentified archaeological, cultural, or historical sites, artifacts, or features are uncovered during implementation of the project, work will be suspended within 100 feet (30 meters) of the find and redirected to another location. The CPUC-approved cultural resources specialist shall be contacted immediately to examine the discovery and determine if further investigation is needed. If the discovery can be avoided or protected and no further impacts will occur, the resource will be documented on California Department of Parks and Recreation 523 forms and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, the CPUC-approved cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is: (1) eligible for the CRHR (and thus a historical resource for purposes of CEQA); or (2) a unique archaeological resource as defined by CEQA. If the resource is determined to be neither a unique archaeological nor an historical resource, work may commence in the area. If the resource meets the criteria for either an historical or unique archaeological resource, or both, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with CPUC staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). Preservation in place, i.e., avoidance, is the preferred method of mitigation for impacts to historical or unique archaeological resources. Alternative methods of treatment that may be demonstrated by the CPUC to be effective include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the CPUC approved qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with CHRIS. Work may commence upon completion of treatment, as approved by the CPUC.	Avoid unanticipated cultural resources or ensure implementation of data recovery or other appropriate treatment measures, if warranted	During construction
Known and Potential Cultural Resources	**MM C-2**: **Avoid known and potential shipwreck locations.** This measure incorporates and supplements portions of APM CUL-2, Resource Avoidance. During installation of the submarine cable, PG&E and its contractors shall map the as-built alignment of the cable in relation to known cultural resources, and the contractors shall ensure that the cable passes at least 100 feet to the west of the known shipwreck located in the northeastern portion of the marine geophysical survey area and mapped on NOAA Chart no.18650. In addition, prior to the installation of the cable, PG&E and its contractors shall map a 50 foot buffer around the magnetic anomaly identified by OSI as anomaly no. M63 in the southern half of the marine geophysical survey area and located at 6019099E, 2106491N, as the anomaly may result from the remains of a shipwreck buried beneath the bay floor in that location. PG&E and its contractors shall ensure that no sediment disturbing excavation or hydroplowing is conducted within the 50 foot buffer zone. If the project cannot be routed around the anomaly, additional evaluation and mitigation as detailed in Mitigation Measure C-1, for unanticipated discoveries, and detailed in the Unanticipated Discoveries Plan may be necessary prior to excavation.	Avoid known shipwreck and magnetic anomaly, review maps of buffer areas and as-built alignment	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Paleontological Resources		
APM PR-1	**Worker Environmental Awareness Program Paleontological Resources Module.** The project's worker environmental awareness program, which all workers will complete prior to beginning work on the project site, will include a module on paleontological resources (fossils). The module will discuss the laws protecting paleontological resources, recognition in the field and types of paleontological resources that could be encountered on the project, and the procedures to be followed if a paleontological resource is discovered. A copy of the project's worker environmental awareness training will be provided to the CPUC for recordkeeping prior to the start of construction.	Review training program materials and ensure construction personnel sign an environmental training attendance sheet.	Prior to and during construction
APM PR-2	**Unanticipated Paleontological Resource Discovery.** If fossils are observed during excavation, work in the immediate vicinity of a paleontological find will be halted or redirected to avoid additional impact to the specimen(s), and to allow a professional paleontologist to assess the scientific importance of the find and determine appropriate treatment. If the discovery is significant, the qualified paleontologist will implement data recovery excavation to scientifically recover and curate the specimen.	Stop or redirect work to avoid unanticipated paleontological resources prior to assessment	During construction
	Geology and Soils		
APM GS-1	**Appropriate soil stability design measures implementation.** Based on available references, artificial fills, fine sands, silts, and bay mud are the primary soil types expected to be encountered in the excavated areas as project construction proceeds. Potentially problematic subsurface conditions may include soft or loose soils. Where soft, loose, or liquefiable soils are encountered during design studies or construction of the onshore portion of the route, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils and liquefaction hazards encountered during construction. Such measures may include the following: ▪ Locating construction staging and operations away from areas of soft and loose soil. ▪ Over-excavating soft or loose soils and replacing them with suitable non-expansive engineered fill. ▪ Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction. ▪ Treating soft or loose soils in place with binding or cementing agents. ▪ Construction activities in areas where soft or loose soils are encountered may be scheduled for the dry season, as necessary, to allow safe and reliable equipment access. ▪ Physical ground improvement such as in-situ soil mixing, drain piles, or sheet piles. ▪ Deepening of trench and/or the HDD to place the transmission line beneath liquefiable fills and/or potential for lateral spreading, where feasible.	Ensure design of the project is appropriate for the conditions; review project design	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM GS-2	**Appropriate seismic safety design measures implementation.** As part of conceptual design investigation, site-specific seismic analyses were performed to evaluate PGAs for design of project components. Because the proposed transmission cables will be lifeline utilities, the 84th percentile motions (i.e., one standard deviation above the median; see Table 3.6-2), were used (B&V 2012). The project will be designed based on current seismic design practices and guidelines.	Ensure design of the project is based on current seismic design practices and guidelines; review project design	Prior to and during construction
APM GS-3	**Appropriate erosion-control measures implementation.** Best Management Practices (BMPs) will be implemented to minimize and avoid surface runoff, erosion, and pollution (see APM WQ-1 and WQ-2).	Ensure BMPs are implemented to minimize and avoid surface runoff, erosion, and pollution	Prior to and during construction
	Greenhouse Gas Emissions		
APM GHG-1	**Minimize Construction Exhaust Emissions.** The following measures will be implemented during construction to further minimize the less-than-significant construction GHG emissions: ▪ Encourage construction workers to take public transportation to the project site where feasible. ▪ Minimize construction equipment exhaust by using low-emissions or electric construction equipment where feasible. ▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of five consecutive minutes required by California regulation (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. ▪ Minimize welding and cutting by using compression or mechanical applications where practical and within standards. ▪ Encourage use of natural gas or electric powered vehicles for passenger cars and light-duty trucks where feasible and available. ▪ Encourage the recycling of construction waste where feasible.	Ensure low emitting engines are used and idling time is minimized	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM GHG-2	**Avoid and Minimize Potential SF6 Emissions.** PG&E will include Potrero Switchyard in PG&E's system-wide SF6 emission reduction program, which includes inventorying and monitoring system-wide SF6 leakage rates and employing X-ray technology to inspect internal circuit breaker components to eliminate dismantling of breakers and reduce accidental releases. New circuit breakers installed at Potrero Switchyard and Embarcadero Substation will have a manufacturer's guaranteed SF6 leakage rate of 0.5 percent per year or less and will be maintained in accordance with PG&E's maintenance guidelines.	Potential for SF_6 leaks is minimized according to a leak reduction standard	Prior to construction and during operation

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Hazards and Hazardous Materials		
APM HM-1	**Implementation of Hazardous Material and Emergency Response Procedures.** PG&E will implement construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction. These construction practices include construction worker training appropriate to the site worker's role (see APM HM-3), and containment and spill control practices in accordance with the Stormwater Pollution Prevention Plan (see APM WQ-1). If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable. Soil that is suspected of being contaminated (on the basis of existing analytical data or visual, olfactory, or other evidence) and is removed during trenching or excavation activities will be segregated, tested, and if contaminated above hazardous levels, will be contained and disposed of offsite at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. Practices during construction will include, but not be limited to, the following: ▪ Proper disposal of potentially contaminated materials. ▪ Site-specific buffers for construction vehicles and equipment located near sensitive resources/receptors. ▪ Emergency response and reporting procedures to address any potential hazardous material spills as described in PEA Section 3.9, Hydrology and Water Quality. ▪ Stopping work at that location and contacting the CUPA (SFDPH Environmental Health Section; see PEA Section 3.8.2.1 above) immediately if unanticipated visual evidence of potential contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the CUPA or other entities as specified by the CUPA. For the O&M phase of the project, existing operational hazardous substance control and emergency response plans will be updated as appropriate to incorporate necessary modifications resulting from this project. *(Also see APM WQ-1 and APM WQ-3 in PEA Section 3.9.4.2)*	Review training program materials and ensure construction personnel sign an environmental training attendance sheet; ensure that contaminated soil and hazardous materials and wastes are handled, stored, and disposed of in accordance with all applicable regulations; observe availability of material safety data sheets	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM HM-2	**Development and Implementation of a Health and Safety Plan.** PG&E will prepare a project-specific health and safety (H&S) plan prior to project construction. The purpose of the plan is to minimize potential safety hazards to site construction workers. The H&S plan will outline the project team H&S responsibilities; present job safety analyses, H&S procedures, and personal protective equipment requirements; establish worker training and monitoring requirements; and describe emergency response procedures relevant to project activities. Each contractor will be responsible for preparing and submitting to PG&E their own H&S Plan specific to their activities using the PG&E Plan for project-specific information. For the O&M phase of the project, existing H&S plans for Potrero Switchyard and Embarcadero Substation will be modified and adhered to as appropriate.	Review project-specific health and safety plan	Prior to and during construction and operation
APM HM-3	**Adherence to Applicable Site-specific RMPs and SMPs.** In addition to following its own project-specific procedures during the construction phase, PG&E will adhere to any applicable site-specific plans such as the SMP for the former Potrero Power Plant (see PEA Section 3.8.3.1), as well as the Maher Ordinance (see PEA Section 3.8.2.1).	Ensure adherence to Applicable Site-specific RMPs and SMPs	During construction
APM HM-4	**Emergency Spill Supplies and Equipment.** Oil-absorbent material, tarps, and storage drums will be available on the project site during construction and used to contain and control any minor releases of oil. In the event that excess water and liquid concrete escapes during pouring, it will be directed to lined and bermed areas adjacent to the borings, where the water will evaporate and the concrete will begin to set. Once the excess concrete has been allowed to set up, it will be removed and transported for disposal, according to applicable regulations. *(Also see APM WQ-4.)*	Ensure emergency spill supplies and equipment are on the project site and appropriate areas are lined and bermed	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM HM-5	**Soil, Groundwater, and Underground Tank Characterization.** In areas where existing data are not available, soil and groundwater sampling and potholing will be conducted in onshore project areas before construction begins. Appropriate handling, transportation, and disposal locations will be determined based on results of the analyses performed on soil and groundwater. In addition, results will be provided to contractor and construction crews to inform them about soil and groundwater conditions and potential hazards. The location, distribution, and/or frequency of the borings will give adequate representation of the conditions in the construction area. If suspected hazardous substances are unexpectedly encountered during trenching or other construction activities (using indicators such as sheen, odor, soil discoloration), work will be stopped until the material or tank is properly characterized and appropriate measures are taken to protect human health and the environment. Appropriate personal protective equipment will be used and waste management will be performed in accordance with applicable regulations. If excavation of hazardous materials is required, the materials will be disposed of in accordance with applicable regulations. If necessary, groundwater will be collected during construction, contained, and disposed of in accordance with all applicable regulations. If underground or aboveground storage tanks are found to be located along the project route and the route cannot be adjusted to avoid disturbance, the tanks will be removed prior to project construction. If it is determined that removal and disposal of tanks is necessary, a separate workplan describing the proper decommissioning and removal of the tanks and removal of any associated impacted soil will be prepared prior to removal. *(Also see APM WQ-5.)*	Ensure work stoppage if suspected hazardous materials are encountered; ensure development of a storage tank decommissioning work plan, if required	Prior to and during construction
APM HM-6	**Horizontal Directional Drilling (HDD) Drilling Fluid and Cuttings Monitoring and Management.** HDD operations will include provisions for monitoring for loss of drilling fluids. Spill response measures shall include reducing fluid pressures and thickening the fluid mixture. Both the drilling technique and early detection and response shall be used to minimize release of fluids to the environment. A Frac-out Plan will be developed and prepared based on site specific conditions and specific contractor methods and equipment. *(Also see APM WQ-6 and APM WQ-7.)*	Ensure HDD monitoring for loss of drilling fluids and development of a Frac-out Plan	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM HM-7	**Sediment Testing Program for Submarine Cable Installation.** As discussed above, sediments along the submarine cable route are located near known contaminated sediment areas (SFEI, 2012), and a Sampling and Analysis Plan will be prepared in coordination with the Dredged Material Management Office (DMMO) of the U.S. Army Corps of Engineers. Sediment sampling shall be performed at the locations where the HDD emerges into the Bay, and the results would be considered and addressed prior to commencement of construction near these locations. Potential contaminants such as PAHs and heavy metals are generally insoluble or have low solubility in water. Conducting sediment analysis of samples before the installation of the submarine cable will establish baseline conditions along the project route. The sediment testing program will be used to develop appropriate construction control measures that may include controlling turbidity during construction through adjustment of hydroplow jet controls and flows, turbidity monitoring during construction in certain areas, and appropriate handling and disposal of any sediment that may be removed as part of the submarine transitions to HDD installation. *(Also see APM WQ-8.)*	Review Sampling and Analysis Plan and results of sampling	Prior to and during submarine cable installation

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	Hydrology and Water Quality		
APM WQ-1	**Development and Implementation of a Stormwater Pollution Prevention Plan (SWPPP).** Stormwater discharges associated with project construction activities are regulated under the General Construction Permit. Cases in which construction will disturb more than one acre of soil require submittal of a Notice of Intent, development of a SWPPP (both certified by the Legally Responsible Person (LRP)), periodic monitoring and inspections, retention of monitoring records, reporting of incidences of noncompliance, and submittal of annual compliance reports. PG&E will comply with all General Construction Permit requirements. Following project approval, PG&E will prepare and implement a SWPPP, which will address erosion and sediment control to minimize construction impacts on surface water quality. The SWPPP will be designed specifically for the hydrologic setting of the Proposed Project in proximity to the San Francisco Bay. Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will designate BMPs that will be adhered to during construction activities. Erosion and sediment control BMPs, such as straw wattles, erosion control blankets, and/or silt fences, will be installed in compliance with the SWPPP and the General Construction Permit. Suitable soil stabilization BMPs will be used to protect exposed areas during construction activities, as specified in the SWPPP. During construction activities, BMPs will be in place to address construction materials and wastes. BMPs, where applicable, will be designed by using specific criteria from recognized BMP design guidance manuals. Erosion and sediment-minimizing efforts will include measures such as the following: ▪ Defining ingress and egress within the project site to control track-out ▪ Implementing a dust control program during construction ▪ Properly containing stockpiled soil Identified erosion and sediment control measures will be installed in an area before construction begins and inspected and improved as needed before any anticipated storm events. Temporary sediment control measures intended to minimize sediment transport from temporarily disturbed areas, such as silt fences or wattles, will remain in place until disturbed areas are stabilized. In areas where soil is to be temporarily stockpiled, soil will be placed in a controlled area and managed with similar erosion-control techniques. Where construction activities occur near a surface water body or drainage channel, the staging of construction materials and equipment and excavation spoil stockpiles will be placed at least 50 feet from the water body and properly contained, such as with berms and/or covers, to minimize risk of sediment transport to the drainage. Any surplus soil will be transported from the site and appropriately disposed of. A copy of the SWPPP will be provided to the CPUC for recordkeeping. The plan will be maintained and updated during construction as required by the SWRCB.	Ensure a SWPPP is prepared and implemented to minimize construction impacts on surface water and groundwater quality	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM WQ-2	**Implementation of a Worker Environmental Awareness Program.** The project's worker environmental awareness program will communicate environmental issues and appropriate work practices specific to this project to all field personnel. These will include spill prevention and response measures and proper BMP implementation. The training program will emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and will include a review of all site-specific water quality requirements, applicable portions of erosion control and sediment transport BMPs contained in the SWPPP (APM WQ-1) and the health and safety plan (see APM HM-2 in PEA Section 3.8.4.2). A copy of the project's worker environmental awareness training record will be provided to the CPUC for recordkeeping. An environmental monitoring program will also be implemented to ensure that the plans are followed throughout the construction period.	Review training program materials and ensure construction personnel sign an environmental training attendance sheet.	Prior to and during construction
APM WQ-3	**Implementation of Hazardous Material and Emergency Response Procedures.** PG&E will implement construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction. These construction practices include construction worker training appropriate to the site worker's role (see APM HM-3), containment and spill control practices in accordance with the SWPPP (see APM WQ-1), and emergency response to ensure appropriate cleanup of accidental spills. If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable. The project SWPPP (APM WQ-1) will identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials, if any, will be permitted. *(Also see APM HM-1.)*	Ensure construction personnel sign an environmental training attendance sheet; observe storage of chemicals and availability of material safety data sheets	Prior to and during construction
APM WQ-4	**Emergency Spill Supplies and Equipment.** Materials will be available on the project site during construction to contain, collect and dispose of any minor spill (for example, absorbent material, tarps, and storage drums). In the event that excess water or liquid concrete escapes during pouring activities, it will be directed to lined and bermed areas adjacent to the borings, where the water will evaporate and the concrete will begin to set. Once the excess concrete has been allowed to set up, it will be removed and transported for disposal, according to applicable regulations. *(Also see APM HM-4.)*	Ensure emergency spill supplies and equipment are on the project site and appropriate areas are lined and bermed	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM WQ-5	**Soil Sampling/Wastewater and Groundwater Characterization.** Soil sampling and potholing will be conducted in onshore project areas before construction begins, and soil information will be provided to construction crews to inform them about soil conditions and potential hazards. If hazardous substances are unexpectedly encountered during trenching, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. If excavation of hazardous materials is required, they will be handled in accordance with applicable regulations. Prior to initiating excavation activities along the underground transmission cable routes, soil borings will be advanced to identify areas where contaminated groundwater may be contacted. The location, distribution, and/or frequency of the borings will give adequate representation of the conditions in the construction area. If suspected contaminated groundwater is encountered at the depths of the proposed construction, samples will be collected and submitted for laboratory analysis of petroleum hydrocarbons, metals, volatile organic compounds, and semi-volatile organic compounds. If necessary, groundwater will be collected during construction, contained, and disposed of in accordance with all applicable regulations. Appropriate personal protective equipment will be used and waste management will be performed in accordance with applicable regulations. Non-contaminated groundwater will be released to one of the city's combined sanitary and stormwater drainage systems (with prior approval) or contained, tested, and disposed of in accordance with applicable regulations. *(Also see APM HM-5.)*	Ensure soil information is provided to construction crews; ensure work stoppage if suspected hazardous materials are encountered and appropriate testing, handling, and disposal	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM WQ-6	**Horizontal Directional Drilling (HDD) Monitoring and Management.** HDD operations will include best management practices for monitoring for loss of drilling fluids, spill containment and response measures. Monitoring and response measures specific to the site subsurface conditions and construction equipment will be included in a Frac-out Plan. The objectives of this monitoring program are to quickly identify any unplanned release of drilling fluids during drilling; determine the size, extent, and location of the release; and evaluate and implement appropriate containment and cleanup measures after a release has occurred. Routine monitoring will be conducted at regular intervals during all drilling activities. More intensive monitoring will be implemented if drilling fluid circulation to the HDD endpoints is lost or an unplanned release is detected. In general, both the drilling technique and early detection and response shall be used to minimize release of fluids to the environment. Techniques to minimize potential loss of drilling fluids include termination of the pilot hole short of the exit into the bay, monitoring of fluid pressures, and adjustments to the drilling fluid mix (see PEA Section 2.6.4, Submarine Cable Installation.) To minimize any potential impacts to water quality, drilling muds (which are heavier than water) shall consist of naturally occurring materials such as water and bentonite clay, plus inert, non-toxic polymers. Monitoring measures that will be included in the Frac-out Plan include use of dyes in the fluid, use of a fluorometer to determine dye concentrations in the water column, and monitoring by divers or side scan sonar in the event of loss of circulation of the fluid; potential responses to a release include measures such as reductions in drilling pressure, thickening of the fluid mixture, and in the event of an emergency, cessation or substantial reduction of drilling and fluid circulation. On land, measures would include installation of spill control berms and pits. For a release in the water column, divers and side scan sonar will be used to track the extent and location of the release. Appropriate containment and clean-up measures will be employed depending on the amount and location of the release, including disposal of material. Waste drilling fluids will be collected in a manner that is in accordance with all local, state and federal regulations. *(Also see APM HM-6 and APM WQ-7.)*	Ensure HDD monitoring for loss of drilling fluids and development of a Frac-out Plan; observe installation of berms and pits on land and use of dyes, among other monitoring measures; ensure appropriate containment and clean-up, if necessary	Prior to and during construction
APM WQ-7	**Prevention of Contaminant Migration along HDD Route.** The project will be designed to prevent contaminants along the HDD route from leaching to the shoreline or bay via the boreholes of the HDD. In areas of contamination (as determined by soil and sediment sampling) the HDD conduit can be sealed to effectively plug voids that might permit movement of contaminants down the HDD drill path after the HDD initial drill is established and the HDD conduit is being pulled into position. In the event that contaminants are found during pre-construction sampling, in areas where contaminants are found and where there are potential voids between the conduit and surrounding soil the voids will be filled with grout or similar material to prevent any potential preferential pathway for the passage of contaminants, as described below.	Observe voids filled with grout or similar material	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM WQ-8	**Sediment Testing Program and Sediment Controls for Submarine Cable and Offshore HDD Intercept.** Sediments along the submarine cable route are located near known contaminated sediment areas (SFEI, 2012), and may be contaminated with PAHs, metals, and/or pesticides. These compounds are generally insoluble or have low solubility in water. Sediments will be temporarily disturbed during hydroplow operations and during excavation of the HDD exit pits. In coordination with the DMMO, PG&E will prepare a Sampling and Analysis Plan for the sampling and analysis of sediment along the submarine cable route and where the HDD exits into the Bay. As part of preparation and implementation of the Sampling and Analysis Plan, surveys will be conducted to examine water depths, slopes, sediment types, potential contaminants, and any other activities or obstacles. Sensitive habitats, cultural resources, existing and abandoned pipelines, old cables, and material discarded on the bottom of the Bay will be located to ensure the new cable will be installed so as to avoid these conflicts or obstacles. In cases where a cable must cross a pipeline or existing cable, arrangements will be made with the owner of the existing installation to establish necessary separations between each installation (ICPC, 2009). The HDD offshore exits were selected far enough into the Bay to minimize the potential for encountering near-shore contaminated sediments. At an HDD exit location, it is a common practice to deploy divers to excavate a collection pit approximately 100 to 400 square feet and 6 feet deep at the exit point depending on final design. The results of the sediment sampling will be used to plan the appropriate handling of sediment resulting from the excavation of the HDD pit as determined in consultation with the DMMO. As the HDD is installed, drilling muds, which are heavier than water, will collect in this excavated collection pit. A barge on the surface is used during HDD installation to pump these drilling muds into a containment tank on the barge/ship for appropriate disposal. Hydroplow installation causes temporary disturbance of sediments. Most of the fluidized material falls back behind the hydroflow jets and increases in turbidity along the narrow path of the jets are minimized. Turbidity is limited by controlling the pressure of the jets and the rate of hydroplow advancement. The hydroplow is instrumented to enable measurement and control of pressure and tow tension. *(Also see APM HM-7.)*	Review Sampling and Analysis Plan and results of sampling	Prior to and during submarine cable installation
APM WQ-9	**Project Site Restoration.** As part of the final construction activities, PG&E will restore all removed curbs and gutters, repave, and restore landscaping or vegetation as necessary.	Ensure project site restoration	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM WQ-10	**Sediment Monitoring and Response Plan.** Estimates of the amounts of material that may be suspended will vary depending on the specific type of equipment to be used. During final design, the expected equipment type will be identified and an evaluation can be made of the amount of sediment expected to be suspended. Along with the sediment quality information being gathered as described in APM WQ-8 and APM HM-7, this information will be used to determine, in coordination with the RWQCB, allowable thresholds of turbidity in the area of operations. A Sediment Monitoring and Response Plan will be developed in coordination with the RWQCB, taking into account equipment and the results of sediment sampling, that will set monitoring distance and methodology, acceptable thresholds of turbidity compared to background, and adaptive operational controls that will be used to reduce sediment suspension. These controls may include, but are not limited to, increasing or decreasing the speed of cable installation operation, increasing or decreasing the operational jet nozzle pressure, adjusting the operational angle of the jet nozzles on the burial blade, and other operational parameters that may reduce sediment suspension.	Review and ensure appropriate controls are implemented based on the Sediment Monitoring and Response Plan	Prior to and during construction
	Land Use		
APM LU-1	**Provide Construction Notification and Minimize Construction Disturbance.** A public liaison representative will provide the public with advance notification of construction activities, between two and four weeks prior to construction. The announcement shall state specifically where and when construction will occur in the area. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. PG&E shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur. All construction activities will be coordinated with the City and Port of San Francisco at least 30 days before construction begins in these areas. Work will be coordinated to minimize any potential conflicts with other construction or recreational projects.	Review notices and ensure coordination	Prior to construction
APM LU-2	**Provide Public Liaison Person and Toll-Free Information Hotline.** PG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring residents about noise, dust, and other construction disturbance. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public as described above. PG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction.	Review notices and ensure public liaison person and hotline	Prior to and during construction
	Noise		
APM NO-1	**Noise Minimization with Portable Barriers.** Compressors and other small stationary equipment used during construction will be shielded with portable barriers if located within 200 feet of a residence.	Ensure implementation of barriers such that construction noise to nearby sensitive receptors is minimized	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
APM NO-2	**Noise Minimization with Quiet Equipment.** Quiet equipment (for example, equipment that incorporates noise-control elements into the design; e.g., quiet model compressors can be specified) will be used during construction whenever possible.	Ensure implementation such that construction noise is minimized [Superseded by MM N-1]	During construction
APM NO-3	**Noise Minimization through Direction of Exhaust.** Equipment exhaust stacks and vents will be directed away from buildings where feasible.	Ensure implementation such that construction noise to nearby buildings and residents is minimized [Superseded by MM N-1]	During construction
APM NO-4	**Noise Minimization through Truck Traffic Routing.** Truck traffic will be routed away from noise-sensitive areas where feasible.	Ensure implementation such that noise-related complaints from nearby residents are minimized	During construction
APM NO-5	**Noise Disruption Minimization through Residential Notification.** In the event that nighttime construction is necessary because of clearance restrictions, affected residents will be notified in advance by mail, personal visit, or door-hanger and informed of the expected work schedule.	Review notification; noise-related complaints from nearby residents are minimized	During construction
APM NO-6	**HDD Noise Minimization Measures.** Temporary barriers utilizing materials such as intermodal containers or frac tanks, plywood walls, mass-loaded vinyl (vinyl impregnated with metal) or hay bales will be used to reduce noise generated by the onshore HDD operations. If night-time HDD activities are required, the project will monitor actual noise levels from HDD activities between 8:00 p.m. and 7:00 a.m. If the noise levels created by the HDD operation are found to be in excess of the ambient noise level by 5 dBA at the nearest property plane, PG&E will, within 24 hours of the excess measurement, employ additional minimization measures necessary to limit the increase to 5 dBA. Such measures may include ensuring semi-permanent stationary equipment (generators, lights, etc.) are stationed as far from sensitive areas as practicable, utilize "quiet" or "Hollywood/Movie Studio" silencing packages, and/or modify barriers to further reduce noise levels.	Ensure implementation of barriers such that HDD construction noise to nearby sensitive receptors is minimized; review nighttime monitoring results and ensure additional measures, if necessary	During construction
APM NO-7	**Noise Minimization Equipment Specification.** PG&E will specify general construction noise reduction measures that require the contractor to ensure all equipment is in good working order, adequately muffled and maintained in accordance with the manufacturers' recommendations.	Review reduction measures to ensure implementation such that construction noise to nearby buildings and residents is minimized	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Underground Transmission Line Construction Noise	**MM N-1: Implement General Noise Control Measures**. PG&E shall implement the following general noise control measures in addition to APMs NO-1 to NO-7, with APMs NO-2 and NO-3 superseded: ▪ PG&E and contractors shall use equipment that incorporates noise-control elements into the design. ▪ PG&E and contractors shall ensure equipment exhaust stacks and vents are directed away from buildings. ▪ Where use of pneumatic tools, such as impact tools (e.g., jack hammers and pavement breakers), is unavoidable, a noise source screen such as a barrier around the activity using the tools, an external noise jacket, or an exhaust muffler on the compressed air exhaust shall be used and shall be designed to reduce noise levels from the source by 10 dBA. ▪ PG&E shall include noise control requirements in specifications provided to construction contractors. Such contract specifications would include, but not be limited to, performing all work in a manner that minimizes noise; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents, day care operations, and commercial uses; and using haul routes that avoid residential buildings inasmuch as such routes are otherwise safely available. ▪ PG&E shall respond to and track complaints pertaining to construction noise. PG&E shall provide a complaint hotline phone number that shall be answered at all times during construction and designate an on-site construction complaint and enforcement manager for the project. The noise complaint and response process shall be described in the residential notifications required under APM NO-5 and posted publicly near work areas that are within 300 feet of residential buildings or day care operations.	Ensure implementation of specified noise control elements, contract language, and timely response and tracking of complaints with public posting near work areas	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
24-Hour HDD Construction Noise	**MM N-2: Obtain Special Permit for Nighttime HDD Noise.** This mitigation measure is to supplement and ensure enforceability of APM NO-6 for noise sources at the Embarcadero HDD Transition Area. ▪ PG&E shall apply to the San Francisco Director of Public Works and obtain a special permit for nighttime or 24-hour activity at the Embarcadero HDD Transition Area, consistent with Section 2908 of the Police Code. Prior to commencing construction of the HDD, PG&E shall provide to the CPUC a copy of the special permit or evidence that no permit is required by San Francisco. ▪ PG&E shall provide to the CPUC at least 7 days prior to commencing construction of the Embarcadero HDD Transition Area the results of actual ambient hourly (Leq) noise measurements for each hour between 8:00 p.m. to 7:00 a.m. at the edge of the nearest private property containing residential use obtained from monitored noise levels as specified in APM NO-6. ▪ PG&E and contractors conducting nighttime work at the Embarcadero HDD Transition Area, between 8:00 p.m. to 7:00 a.m., shall implement noise attenuation features, including acoustical barriers, blankets and enclosures as identified in APM NO-6, to achieve no more than 5 dBA above existing local ambient noise levels at the edge of the nearest private property containing residential use, based on 1-hour Leq. ▪ PG&E shall provide a report to the CPUC actions taken to reduce the duration or level of noise within 48 hours of monitoring noise levels found to be in excess of the ambient noise level by 5 dBA, at the edge of the nearest private property containing residential use, based on 1-hour Leq.	Review correspondence related to special permit, and review results of noise measurements to establish hour-by-hour baseline and measurements taken under APM NO-6	Prior to and during nighttime construction
	Traffic/Transportation		
APM TR-1	**Traffic Management Implementation.** PG&E will follow its standard safety practices, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. PG&E will coordinate construction traffic access at Embarcadero Substation and Potrero Switchyard with SFMTA during project construction. PG&E is a member of the California Joint Utility Traffic Control Committee, which published the California Joint Utility Traffic Control Manual (2010). PG&E will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. These recommendations include provisions for safe access of police, fire, and other rescue vehicles. In addition, PG&E will apply for an Excavation Permit and a Special Traffic Permit from the City of San Francisco, and will also submit a Traffic Management Plan to the City as part of his application. The Traffic Management Plan will include the following elements and activities: ▪ Consult with SF Muni at least one month prior to construction to coordinate bus stop relocation (as necessary) and to reduce potential interruption of transit service, especially to the Transbay Temporary Terminal. ▪ Include a discussion of work hours, haul routes, limits on lengths of open trench, work area delineation, traffic control and flagging. ▪ Identify all access and parking restrictions and signage requirements, including any bicycle	Review Traffic Management Plan; ensure traffic safety practices and coordination are implemented	During construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
	route or pedestrian detours, should the need for these arise during final design. ▪ Lay out a plan for notifications and a process for communicating with affected residents and businesses prior to the start of construction. Advance public notification would include postings of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access points/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints. ▪ Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times. ▪ Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access. ▪ Specify the street restoration requirements pursuant to PG&E's franchise agreements with the City and County of San Francisco. ▪ Identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling, or night construction) would be used to minimize impacts to traffic flow. ▪ Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone. These plans will also address loading zones.		
APM TR-2	**Marine Traffic Management Implementation.** PG&E and its contractors will coordinate with the USCG VTS to establish a Vessel Safety Zone, and will provide information for the appropriate notices to mariners for cable laying work. The USCG requires 90-day notification for establishment of the Vessel Safety Zone. This information is then disseminated by the USCG to mariners and other parties.	Review notice and observe Vessel Safety Zone	Prior to and during marine construction
	Utilities and Service Systems		
APM UTIL-1	**Coordination with SFPUC Regarding Stormwater System Facilities.** One of the extremely large SFPUC stormwater transport/storage boxes underlies The Embarcadero, where the northern HDD is planned. In this area, the HDD depth will be coordinated with SFPUC, in order to prevent damaging the storage box.	Ensure knowledge of outcome of coordination with SFPUC in order to prevent damaging the storage box	Prior to and during construction

Table 6-1. Mitigation Monitoring Plan

Impact	Applicant Proposed Measure (APM) or Mitigation Measure	Monitoring Requirement	Timing of Action
Accidental Utility Service Disruptions	**MM UT-1: Protect underground utilities.** Prior to commencing construction of the underground transmission line, PG&E shall submit to the CPUC written documentation of the following: ▪ Construction plans designed to protect existing utilities, showing the dimensions and location of the finalized alignment as well as the corrosion and induced currents study; ▪ Records that the Applicant provided the plans to the City and County of San Francisco for review, revision and final approval; ▪ Construction plans approved by the City and County of San Francisco detailing the steps taken to prevent damage to two large SFPUC storm sewers, including but not limited to an appropriate shoring plan, work zone restrictions, and setbacks for the adjacent structures, at the following locations: (1) in the intersection of Spear and Folsom; and (2) at the end of the route as it turns to enter Embarcadero Substation; ▪ Evidence of coordination with all utility owners within the approved right-of-way, including their review of construction plans, results of the induced current and corrosion potential analysis, and a description of any protection measures or compensation to be implemented to protect affected facilities; ▪ Copy of the Applicant's database of emergency contacts for utilities that may be in close proximity or require monitoring during construction of the project; ▪ Evidence that the project meets all applicable local requirements; ▪ Evidence of compliance with design standards; and ▪ Copies of any necessary permits, agreements, or conditions of approval.	Review documentation of construction plans and evidence of coordination and compliance with requirements, permits or agreements to minimize accidental disruptions	Prior to and during construction

Note: Applicant Proposed Measures (APMs) appear in the Proponent's Environmental Assessment (PG&E, 2012a).

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