

ATTACHMENT B

PRE-CONSTRUCTION MITIGATION MEASURES AND APMs

PRE-CONSTRUCTION MITIGATION MEASURES (MM), APMs, and Field Protocols (FP)

APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
Aesthetics			
MM AES-3a	Screen construction activities from view. Construction yards, staging areas, and material and equipment storage areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate structure, material, and color for each specific location, as determined in coordination with the appropriate local (County or City) authority. This requirement shall not apply if PG&E can demonstrate that installing temporary fencing will introduce a safety hazard or that construction yards are located away from areas of high public visibility including public roads, residential areas, and public recreational facilities. For any site that PG&E proposes to exempt from the screening requirement, PG&E shall define the site on a detailed map demonstrating its visibility from nearby roads, residences, or recreational facilities submitted to the CPUC for review and approval at least 60 days prior to the start of construction at, or use of, that site.	PG&E to install screening fencing or demonstrate that a yard should be exempt. For exemptions, PG&E to identify sites on maps demonstrating visibility and provide to CPUC at least 60 days prior to start of construction.	
Air Quality			
APM AIR-2	Asbestos Management. If any load-bearing structure (poles, towers, concrete pads) is to be removed, this project will require asbestos testing and notification to BAAQMD. Notify the Environmental Field Specialist (EFS) at least 45 days prior to work commencing. BAAQMD must be notified at least 10 working days prior to work (demolition) commencing. If the construction start date changes, notify the EFS immediately as notification to BAAQMD may need to be resubmitted. EFS is responsible for obtaining any necessary permits from BAAQMD prior to the start of work.	Notification to EFS 45 days prior to work commencing. BAAQMD notification 10 working days prior to work (demolition) commencing.	
Biological Resources			
FP-01	Field Protocol 01. Hold annual training on habitat conservation plan requirements for employees and contractors performing covered activities in the HCP Plan Area that are applicable to their job duties and work.	PG&E to hold training on habitat conservation plan	
FP-05	Field Protocol 05. Notify a conservation landowner at least 2 business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if possible or if required by other permits. If the work is an emergency, as defined in PG&E's Utility Procedure ENV-8003P-01, PG&E will notify the conservation landowner within 48 hours after initiating emergency work. While this notification is intended only to inform the conservation landowner, PG&E	PG&E to notify conservation landowner at least two business days prior to construction activities	

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	will attempt to work with the conservation landowner to address landowner concerns.		
CDFW Measures from the Bay Area O&M ITP			
5.7	Dust Control. PG&E shall implement dust control measures during construction activities to facilitate visibility for monitoring of the Covered Species by Biological Monitors and crews. PG&E shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles.	PG&E to implement dust control program prior to construction activities	
5.9	Erosion Control. PG&E shall implement and install all erosion and sediment control measures and devices prior to conducting Covered Activities that include grading, excavation, or placement of fill. PG&E shall utilize erosion measures where sediment runoff from exposed slopes or surfaces could enter a drainage, stream, wetland, or pond. PG&E shall repair and/or replace ineffective measures or contrivances whose integrity has been compromised immediately.	PG&E to implement erosion control measures prior to construction activities	
6.1	Notifications Before Commencement of Certain Activities. Notifications shall be submitted at least 45 days in advance and prior to “release to construction” by the Designated Representative for review by CDFW. Within 14 days of request by CDFW and if not possible then at least 5 days prior to the beginning of the Covered Activity, PG&E shall provide any requested additional information and provide access for a CDFW field review of the proposed Work Area. The proposed Covered Activity may not commence until PG&E has provided the additional information to the specifications of the request by CDFW, or until field review access has been provided to CDFW. If there continues to be unresolved issues or questions, then PG&E or CDFW may request to meet and confer within 10 business of the request to resolve any outstanding issues. CDFW retains the right to determine whether a proposed Covered Activity shall not be provided coverage under this ITP.	PG&E to submit notification to CDFW 45 days prior to release to construction	
7.17	Alameda Whipsnake Pre-Activity Habitat Features Survey. Preconstruction surveys for Alameda whipsnake and sheltering and sunning habitat features (e.g., burrows, rocky outcrops, fallen trees, etc.) shall be conducted in modeled core and perimeter core habitat for construction activities (also refer to ITP 7.19 for survey requirements in core habitat). These surveys shall be conducted by a Designated Biologist no more than 30 calendar days prior to any initial ground disturbance. These surveys shall consist of walking the work area and, if possible, any accessible adjacent areas within at least 50 feet of the work area. The Designated Biologist shall investigate potential cover sites when it is feasible and safe to do so. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris.	Preconstruction surveys to be conducted by a Designated Biologist 30 calendar days prior to any initial ground disturbance	

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	Sheltering, sunning, or other sensitive species features identified by the Designated Biologist shall be identified with flagging. PG&E shall avoid habitat features flagged by the Designated Biologist to the extent practicable. At the recommendation of the Designated Biologist, PG&E shall install an exclusionary barrier (ITP 7.18).		
7.18	Exclusionary Barrier. PG&E shall install a temporary barrier, where feasible, to prevent the Covered Species from dispersing into the work area, including along construction access routes, prior to commencing any other construction activities. The barrier shall be installed immediately after the preconstruction surveys have been completed in accordance with ITP 7.17 and shall consist of fencing at least 42 inches tall with 36 inches above the soil surface, designed with a lip to prevent the Covered Species from climbing over the barrier, and buried to a depth of six inches below the soil surface. The soil shall be compacted against both sides of the fence to prevent the Covered Species from gaining access. The stakes shall be placed on the inside of the fence. No gaps or holes are permitted in the fencing system except for access areas as required for vehicular and pedestrian traffic. The exit/entry points shall be constructed so that it is flush to the ground and so that the Covered Species cannot access the work area. The barrier shall be designed to allow trapped individuals to leave the work area by installing one-way funnels, ramps, or other methods approved by CDFW. An alternative barrier design or directional treatment techniques in lieu of fencing may be used after receiving written authorization from CDFW. The Designated Biologist or General Monitoring Biologist shall inspect the barrier daily and the barrier shall remain in place until all construction activities have been completed or where recommended by a Designated Biologist. PG&E shall maintain and repair barrier immediately, if damaged, to ensure that it is functional and without defects. PG&E shall provide refuge opportunities along or near the outer side of the silt fence for the Covered Species (also refer to ITP 7.19).	PG&E to install temporary barriers prior to commencing construction activities; immediately following preconstruction surveys	
7.20	Alameda Whipsnake (AWS) Clearance Surveys. Immediately prior to the start of construction activities impacting greater than 0.1 acre that affects core AWS habitat, including scrub or chaparral plant communities in modeled habitat, the Designated Biologist(s) shall visually survey the work area and adjacent areas, as determined by the Designated Biologist, to clear the area of AWS. If construction activities may affect habitat features flagged per ITP 7.17 then a General Biological Monitor shall conduct daily clearance surveys in the active work area(s).	Designated Biologist(s) to conduct clearance surveys immediately prior to the start of construction activities	

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Applicant-Proposed Measures from the Incidental Take Permit (ITP) Final EIR (FEIR)			
ITP FEIR APM BIO-3	Design and site minor new construction projects activities to avoid sensitive areas. New, permanent facilities as part of minor new construction activities will be sited and designed to avoid impacts on sensitive vegetation types, sensitive natural communities, and unique plant assemblages, as well as occupied habitat and suitable habitat for special-status species, to the extent feasible. If impacts on these areas cannot be avoided, PG&E will determine if additional permitting is required to conduct the work and obtain the required permits (e.g., LSAA). If impacts are expected on covered species' habitat, Mitigation Measure BIO-1 (MM BIO-1) [replaced with ITP Habitat Management land Acquisition and Restoration measures] will be implemented to mitigate for habitat impacts. Where minor new construction will result in impacts on sensitive vegetation types, sensitive natural communities, or unique plant assemblages, PG&E will minimize the construction footprint and implement appropriate protective measures as recommended by the qualified biologist to protect the natural community. Examples of such measures include: reseedling with a California annual seed mix, installing protective fencing around sensitive natural communities or resources, and installing wattles, erosion blankets and other drainage controls to protect new or adjacent plantings.	PG&E to implement design features and site to avoid sensitive areas	
ITP FEIR APM BIO-3a	Minimize spread of invasive plant and plant pathogens in minor new construction. When conducting minor new construction activities, PG&E will avoid or minimize the spread of invasive species by taking the following actions: 1. Prior to commencement of activities located on or adjacent to non-paved surfaces, a qualified biologist will flag known populations of noxious weeds and invasive plants in the work areas. Invasive plant species include those listed as invasive by the California Invasive Plant Council (Cal IPC). 2. PG&E will stage work in areas not infested with weeds or treat for weed removal prior to using an infested area. 3. Prior to ground disturbance in areas containing species susceptible to Sudden Oak Death, a qualified professional (e.g., biologist, arborist, botanist familiar with Sudden Oak Death and the vegetation communities in the area) will assess the risk of activities and will identify and implement measures to reduce or avoid the risk of Sudden Oak Death spread. These measures will include but will not be limited to the following, and will be further developed and updated based on the best available science and site-specific conditions: a. Designate quarantine areas and implement proper measures for disposal of infested materials (e.g., branches, split wood, wood chips).	PG&E to implement invasive plant and plant pathogen spread minimization measures prior to the start of project construction	

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	b. Sanitize shoes, pruning gear, and other equipment with sanitizing materials (e.g., chlorine bleach, Clorox Clean-up, Lysol, scrub brush, boot brush) before and after ground-disturbing and vegetation removal activities are implemented. 4. Clothing, footwear, and equipment used during minor new construction will be cleaned of soil, seeds, vegetation, or other debris or seed-bearing material before entering a work site or when leaving an area with infestations of invasive plants and noxious weeds. 5. Heavy equipment and other machinery used in areas with infestations of invasive plant species or Sudden Oak Death will be inspected for the presence of invasive species before use on the project site and will be cleaned before entering the site, to reduce the risk of introducing invasive plant species or plant pathogens. 6. To minimize the introduction and spread of noxious weeds and invasive plants, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. In areas where invasive plants are removed during minor new construction or vegetation removal activities, PG&E will dispose of invasive plant biomass offsite at an appropriate waste collection facility or treat biomass onsite to eliminate seeds and propagules and prevent reestablishment; if moved offsite, PG&E will transport invasive plant material in a closed container or bag to prevent the spread of propagules during transport. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition. 7. Areas where ground disturbance has resulted in exposed soil as a result of minor new construction shall be seeded with compatible California annual species, as determined by a qualified biologist or botanist familiar with the native vegetation in the area and experienced in revegetation techniques. Revegetation will occur prior to the onset of winter rains within the year initial impacts take place. If work cannot feasibly be scheduled the rainy season, revegetation may occur as directed by the qualified biologist and no later than the onset of the next winter rains.		

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	8. To ensure a successful revegetation effort, onsite vegetation shall meet the following success criteria: a. PG&E shall perform pre-activity surveys to record baseline vegetative ground cover conditions and composition by a qualified biologist prior to covered activities as follows. The biologist will record the following: i. Absolute percent ground cover for the entire work area. ii. Relative percentages of ground cover within the work area by herbaceous plants, shrubs, trees, and noxious/invasive plants. iii. Develop a catalog of all invasive species present within the work area, including an estimate of percent composition by species. b. PG&E will conduct post-activity monitoring of work areas in the spring following completion of minor new construction. i. A qualified biologist will record any new invasive species that may have inadvertently been introduced to the work area. The biologist shall make special note of any new invasive plant species rated as “high” by the Cal IPC. ii. A qualified biologist will record whether there was an increase in relative cover of invasive species from baseline that may have resulted from the covered activity. iii. If relative cover of invasive plant species has increased within the work area, PG&E shall remove and/or dispose of invasive plants in an appropriate manner, as recommended by a qualified biologist and/or a Pest Control Advisor. If any new invasive plants rated by Cal IPC as “high” are found within the work area, they will be removed in an appropriate manner, as recommended by a qualified biologist and/or a Pest Control Advisor. If the relative ground cover of invasive plants exceeds baseline by 100 percent or more, PG&E will reseed the areas where invasive plants are removed and monitor for one additional year.		
Project-specific Applicant-Proposed Measures for Species Not Covered for Take In the BAHCP/ITP			
MM BIO-1a Special-Status Plants Avoidance and Impact Minimization.	Prior to vegetation removal or ground-disturbing activities, a qualified botanist(s) approved by CPUC that is knowledgeable of the plant species in the region shall conduct surveys for special-status plants within the limits of the disturbance area. The survey shall include a 250-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns. Surveys may be adjusted to reflect proposed	Surveys and survey reports to be submitted to the CPUC prior to any vegetation removal or ground disturbing activities. Survey reports to be submitted to the CPUC within 14 days of completion	

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	work schedules and locations and need not be performed all at one time. The surveys shall be conducted during the appropriate blooming period(s) according to protocols established by CDFW and CNPS (CDFW, 2018) and CNPS (CNPS, 2001) or more recent protocols, if available. All special-status plant species, including listed threatened or endangered, and those ranked CRPR 1A, 1B, 2, 3, and 4, that are located shall be documented during surveys using a precision GPS unit. Results of surveys shall be valid for a period of three years if conducted during a period of average rainfall; however, the Project shall not be delayed during a drought year and would rely on baseline or previously collected data. If vegetation removal does not occur in a previously surveyed area within three years, the surveys shall be repeated provided there is adequate rainfall to support germination. If special-status plant species are found, special-status plants shall be avoided where feasible in accordance with ITP FEIR APM BIO-3, BIO-4, and BIO-5. If vegetation removal or ground disturbing activities would have a direct impact on special-status plant species, PG&E shall implement AMM Plant-04, -05, -06, -07, and -08, as applicable. Observations will be submitted to CNDDB in accordance with O&M ITP-6.8.		
MM BIO-1b	Crotch's Bumble Bee Avoidance and Minimization. Within one year prior to any vegetation removal or ground-disturbing activities a qualified biologist(s) approved by CPUC that is knowledgeable of Crotch's bumble bee species identification and habitat shall conduct a habitat assessment evaluating the likelihood of bumble bees occurring within and adjacent to the clearance survey of area identified as potential foraging, nesting, and/or overwintering habitat within the limits of disturbance. The survey will also include a 100-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns. Surveys may be adjusted to reflect proposed work schedules, activities, and locations and need not be performed all at one time. Bumble bee identification shall include visual identification and non-lethal photo vouchers, or other methods as outlines in a 2081(a) Memorandum of Understanding with CDFW for bumble bee survey and handling. Nest sites can be determined through following bees from blooms to their nests and looking for concentrated bee activity in suitable nest habitat. For areas where suitable Crotch's bumble bee habitat is identified, Crotch's bumble bee individuals are identified, or potential habitat exists as determined by CDFW, PG&E will develop a Crotch's Bumble Bee Survey, Impact Avoidance, and Mitigation Plan and submit the plan to CPUC and CDFW. Methodologies and results of the habitat assessment will be included in the plan. The plan will	Clearance surveys to be conducted prior to any vegetation removal or ground-disturbing activities	

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	outline additional survey needs, such as overwintering or colony active period surveys, and any additional appropriate avoidance and minimization measures beyond those already accepted. If take is unavoidable, a 2081(a) MOU/ITP will be developed and appropriate mitigation, as approved by CDFW, will be implemented. <u>Colony Active Period Season Surveys:</u> If ground disturbing or vegetation management activities in any given work area occurs during the Colony Active Period (February 1 – September 30), and the work area has been identified as potential foraging or nesting habitat, the qualified biologist shall search for Crotch's bumble bee throughout the area planned for Project activities in advance of vegetation removal or ground disturbance in that area. Survey efforts for each area shall include visual surveys consisting of meandering transects occurring no more than 10 days prior to the start of ground and vegetation disturbing activities in that area or as otherwise determined by CDFW in the 2081(a) ITP/MOU. The survey duration shall be appropriate to the size of the area covered in the ITP/MOU and would include on person-hours per 3 acres of suitable habitat for areas planned for Project activities plus a 100-foot-wide buffer (unless otherwise prohibited due to legal access or safety concerns) or as otherwise determined in the MOU. The qualified biologist shall conduct surveys between 7:00 AM and 6:00 PM (Pacific Time) on sunny days between 55-and 95-degrees Fahrenheit with sustained wind speeds measuring less than 10 miles per hour or as otherwise required in the ITP/MOU.		
MM BIO-1c	Monarch Avoidance. A qualified biologist approved by CPUC that is knowledgeable of milkweed species in the region and monarch overwintering sites shall conduct surveys for within the limits of the disturbance area. The survey shall include a 250-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns. Documentation and reporting of monarch overwintering sites and milkweed species shall be conducted in accordance with O&M ITP-6.8, -6.10, and ITP FEIR APM BIO-2. Monarch observations will be submitted to CNDDB in accordance with O&M ITP-6.8. <u>Overwintering sites:</u> Surveys for overwintering sites will be conducted from October 1 through March 31 and will include wind-protected blue gum eucalyptus, pine, fir, cypress, and oak trees, particularly in canyons or drainages near water sources and southwest facing slopes. Overwintering sites will be determined by the presence of monarchs clustered together in large numbers.	Surveys to be conducted with survey reports to be submitted to the CPUC and avoidance measures implemented prior to any vegetation removal or ground disturbing activities	

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	<u>Milkweed Plants:</u> Surveys for milkweed plants will be conducted from March 31 through October 1 and will include any native milkweed species known from the region. Transects for milkweed species will be spaced 20 meters apart or less given the terrain and visual barriers.		
MM BIO-1d	Northwestern Pond Turtle Avoidance. Prior to any ground-disturbing or mechanical vegetation removal activities within 400 feet of any perennial waterbody (e.g., lake, pond, river, stream, wet meadow, seep, spring) that has the potential to support northwestern pond turtle as determined by the qualified biologist, a qualified biologist(s) approved by CPUC will conduct a survey within the limits of disturbance no more than 24 hours prior to commencing activities to search for the presence of northwestern pond turtle individuals.	Surveys to be conducted with survey reports to be submitted to the CPUC and avoidance measures implemented prior to any vegetation removal or ground disturbing activities	
MM BIO-5a	Tree Trimming and Removal Requirements. Trimming and removal of trees shall be conducted in accordance with the International Society of Arboriculture (ISA) American National Standards Institute (ANSI) A300 Tree Care Standards and ISA's Pruning Best Management Practices and overseen by an ISA Certified Arborist. The ISA Certified Arborist will evaluate trees that may be impacted by the Project and determine which trees can be retained and which trees shall be removed. Trees would only be proposed for removal if they would interfere with construction work areas or access safety, utility structures, trimming of the tree branches or roots would be severe enough to impact tree health and result in tree decline, trees are considered a safety hazard to structures or personnel, or retention of the tree would not be in compliance with CPUC General Order 95 for vegetation clearance around powerlines.	ISA Certified Arborist oversight and documentation of recommendations prior to construction and restoration	
Cultural Resources			
APM CUL-1	Workers Environmental Awareness Program. PG&E will design and implement a worker environmental awareness program that will be provided to all project personnel involved in earth-moving activities. This training will be administered by a qualified cultural resource professional either as a standalone training or as part of the overall environmental awareness training required by the project and may be recorded for use in subsequent training sessions. No construction worker will be involved in field operations without having participated in the worker environmental awareness program, which will include, at a minimum: ▪ A review of archaeology, history, precontact, and Native American cultures associated with historical resources near the project ▪ A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation	PG&E to design a training program prior to construction activities	

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	- A discussion of procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the project - A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies - A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies, and other applicable laws and regulations.		
Geology and Soils			
APM GEO-1	Development of Seismic Design Criteria and Appropriate Seismic Safety Design Measures Implementation. The project will be designed based on current seismic design practices and guidelines. As part of design, site-specific seismic analyses will be performed to evaluate peak ground accelerations for design of project components. Because the proposed power cables will be lifeline utilities, the 84th percentile motions (one standard deviation above the median) will be used. Additionally, the Institute of Electrical and Electronics Engineers (IEEE) Standard 693, Recommended Practices for Seismic Design of Substations, has specific requirements to mitigate past substation equipment damage. These design guidelines will be implemented during equipment replacement at substations. Substation equipment will be purchased using the seismic qualification requirements in IEEE 693.	PG&E to design project based on current seismic design practices and guidelines	
APM GEO-2	Site-Specific Landslide Assessment. As described in Section 3.7.1.3, two proposed structure locations are near active or prehistoric/older slides, with the structures typically located uphill from mapped landslides. A site-specific design-level evaluation of these locations will be performed to evaluate the potential for these landslides to impact project facilities. Appropriate design measures for the protection of the power line structure stability, which may include foundation design enhancements or adjustments to structure locations, will be incorporated into the design.	PG&E to conduct site-specific design-level evaluation	
APM GEO-3	Appropriate Design Measures Implementation. Potentially problematic subsurface conditions during project construction include soft or loose soils that could be susceptible to liquefaction, especially at and in the vicinity of stream or river crossings. Where soft or loose soils are encountered during design studies or construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils. Such measures may include the following: Over excavating soft or loose soils and replacing them with non-expansive engineered fill.	PG&E to implement design measures prior to construction activities	

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	- Increasing the density and strength of soft or loose soils through mechanical vibration and compaction. - Treating soft or loose soils in place with binding or cementing agents.		
Hazards, Hazardous Materials, and Public Safety			
APM HAZ-1	Development and 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. Construction procedures that will be implemented include worker training appropriate to the worker's role, and containment and spill control practices in accordance with the Stormwater Pollution Prevention Plan (SWPPP) (APM HYD-1).	PG&E to implement response procedures for all phases of project construction	
APM HAZ-3	Shock Hazard Safety Measures. All authorized personnel working on site, during either construction or operations and maintenance, will be trained according to PG&E standards. Training will be implemented prior to construction by PG&E or construction contractor safety managers. A record of when the safety training occurred, the safety manager delivering the training and who attended will be stored by the contractor and available for review by PG&E and the CPUC as requested. Training will include identifying electrical hazards, establishing safe distances from the lines, deenergizing lines where appropriate, and use of personal protective equipment such as arc flash-resistant apparel. The public will be excluded from work areas. When power lines are energized during construction and operation, they are suspended in the air at the requisite ground clearance distance that avoids shock or arc flash hazard to the public.	PG&E to implement training program and safety measures prior to construction activities	
APM HAZ-4	Worker Environmental Awareness Training Program. A worker environmental awareness training program (WEAP) will be developed and implemented prior to construction. The WEAP program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site specific physical conditions to improve hazard prevention and will include a review of the SWPPP, which also will address spill response and proper best management practice (BMP) implementation. The WEAP program will be provided separately to CPUC staff prior to construction. If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Safety data sheets will be maintained and kept available onsite, as applicable.	PG&E to develop a training program prior to construction activities	
MM HH-1a	Prepare and Implement a Soil Management Plan. Prepare and Implement a Soil Management Plan. A Soil Management Plan shall be developed and	Soil Management Plan to be submitted to the CPUC at least 30	

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	implemented for construction of the proposed Project. The objective of the Soil Management Plan is to provide procedures PG&E shall undertake in the event unanticipated contaminated soil is encountered. The Soil Management Plan shall also include requirements for documenting and reporting incidents of encountered contaminants, such as documenting locations of occurrence, sampling results, and reporting actions taken to dispose of contaminated materials. The Soil Management Plan shall be submitted to the CPUC 30 days prior to the start of construction for review and approval. The Soil Management Plan shall provide detailed processes for the following: ▪ Procedures for when unanticipated contaminated soil is encountered. ▪ Reporting and notification for contaminated soil. ▪ Description of soil testing, which shall include the collection of shallow soil samples and analyses for contamination to verify presence or absence of unknown soil contamination and the collection of soil samples at locations at and near areas of known contamination. ▪ Procedures and protocols for safe storage, stockpiling, and disposal of any contaminated soils. ▪ If contaminants are encountered, PG&E shall notify all schools, daycare facilities, elderly housing, and residences within 250 feet of the contaminated soil within 24 hours of discovery and immediately remove the contaminated soil.	days prior to the start of construction	
Hydrology and Water Quality			
	APM HYD-1 Prepare and Implement a SWPPP. Stormwater discharges associated with project construction activities are regulated under the CGP. Cases in which construction will disturb more than 1 acre of soil require submittal of a Notice of Intent, development of an SWPPP (both certified by the Legally Responsible Person), 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 CGP requirements for construction of project components. Following project approval, PG&E will prepare and implement an SWPPP, which will address erosion and sediment control concerns to minimize construction impacts on surface water quality, as well as reduce the potential for stormwater runoff to impact adjacent properties. The SWPPP will be designed specifically for the hydrologic setting of the proposed project (surface topography, storm drain configuration, and other factors). Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will	PG&E to submit a SWPPP prior to and construction activities	

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	propose BMPs that will be implemented during construction activities. Erosion and sediment control BMPs – such as straw wattles, erosion control blankets, and silt fences – will be installed in compliance with the SWPPP. Suitable soil stabilization BMPs will be used to protect exposed areas during construction activities, as specified in the SWPPP.		
	APM HYD-2 Worker Environmental Awareness Program. The worker environmental awareness program will be developed and provided separately to CPUC staff prior to construction. The worker environmental awareness program will communicate environmental issues and appropriate work practices specific to project components to all field personnel. These will include spill prevention and response measures and proper BMP implementation. A copy of the worker environmental awareness program record will be provided to CPUC for recordkeeping at the completion of the project. An environmental monitoring program also will be implemented to ensure that the plans are followed throughout the construction period for project components.	PG&E to develop a training program prior to construction activities	
Noise			
MM N-1b	Construction Notification. (Supersedes APM NOI-1.) PG&E shall provide written notice at least 1 month prior to planned construction activities as follows: ▪ Written notice shall be provided to all affected jurisdictions, including local agencies and jurisdictions, emergency service providers, and public transit agencies. ▪ Written notice shall be provided to all daycare facilities, schools, elderly housing facilities, and residences, and administrators of parks and open spaces, within 500 feet of all construction sites, structure installation and removal sites, staging yards, access roads, and areas of drone use, and within 1,000 feet of helicopter landing zones. Written notices shall provide tips on reducing noise intrusion – for example, by closing windows facing the planned construction. ▪ PG&E shall post notices in public areas, including recreational use areas, within approximately 500 feet of the project alignment and construction work areas at least 1 month prior to planned construction activities. The announcement shall state where and when construction will occur in the area, including areas of helicopter construction. ▪ PG&E shall identify a public liaison to respond to concerns of neighboring receptors during construction, including residents and schools, about construction noise disturbance.	Notification to agencies and nearby sensitive receptors and residences at least 1 month prior to planned construction activities. Notification to affected utilities at least 18 months prior to start of ground disturbance.	

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	PG&E shall provide a hotline telephone number in all posted notices and written notices to allow impacted residents, schools, or park users to call to inquire regarding schedule and noise. Throughout construction, PG&E shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. PG&E shall provide documentation to CPUC of all complaints and the actions taken to resolve complaints on a monthly basis. If a helicopter landing zone to be used will be located on East Bay Municipal Utility District (EBMUD) or East Bay Regional Park District (EBRPD) land, PG&E shall coordinate with EBMUD and EBRPD to obtain approval on the proposed location. This approval shall be documented by providing written approval at least 30 days prior to any helicopter landing. To allow adequate time for potential utility relocation in advance of Project construction, PG&E shall notify utility service providers about utilities that may require relocation at least 18 months prior the start of construction.		
MM N-2a	Vibration Assessment and Control. (Supersedes APM NOI-8). Where sonic pile drivers may be used within 40 feet of a historic structure or impact pile drivers within 115 feet of a historic structure, or if an impact pile driver is used within 60 feet of an occupied structure, PG&E shall prepare a Vibration Control Plan prior to the commencement of construction activities, meeting the following requirements: - The Vibration Control Plan shall be prepared by a licensed structural engineer and shall include all reasonable methods required to minimize vibration such that monitored vibration levels do not exceed 0.5 inches per second Peak Particle Velocity. These methods may include limiting the extent of pile driving activity near occupied structures and using alternative installation methods for piles. Final design efforts and construction methods will consider soils and hammer type and use when assessing potential for vibration. - Site-specific minimization measures such as pre-drilling pilot holes to reduce resistance, modifying the type of hammer, reducing hammer energy, modifying hammer frequency, or using vibratory pile driving will be implemented as necessary to reduce the potential effects of off-site vibration. - Vibration monitoring will be conducted during pile driving activities, or in response to a complaint, to confirm that monitored vibration levels do not exceed 0.5 inches per second Peak Particle Velocity. - If threshold levels are exceeded, vibration monitoring reports shall document the site-specific minimization measures implemented to reduce	Prepare Vibration Control Plan; final design efforts incorporate an assessment of potential for vibration	

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	or limit the duration and level of the impact and shall document actions taken to adjust construction activities in response to field conditions. - The Vibration Control Plan shall also establish baseline conditions at potentially affected structures, provide shoring design to protect buildings and structures from damage, document damage at the conclusion of vibration generating activities, and include recommendations for repair if necessary. - Monitoring for vibration may be reduced or eliminated when it has been established that these measures, if required, are effective for the site conditions.		
Paleontological Resources			
APM PAL-2	Worker Environmental Awareness Training. Training on paleontological resources protection will be administered for excavation deeper than 3 feet below ground surface (bgs) at all work locations. Training may be provided by PG&E as a stand-alone training, or it may be included as part of the overall environmental awareness training as required by the Project. The training will include the following: - The types of fossils that could occur at the Project site - The types of lithologies in which the fossils could be preserved - The procedures that should be taken in the event of a fossil discovery - Penalties for disturbing paleontological resources.	Training program is implemented for work locations with excavation occurring deeper than 3 feet below ground surface	
Recreation			
APM REC-1	Coordinate with Park and Open Space Management and Signage. (<i>Superseded by MM R-3a</i>). PG&E will coordinate closely with park and open space landowners for temporary public land closures during project construction activities. If traditional access is temporarily unavailable, signs advising recreational facility users of construction activities, including directions to alternative trails and/or bikeways, will be posted at entrance gates to park and open space areas. Signage will be posted at least 1 week in advance of the construction activity near a park or open space area.	Signage will be posted at least 1 week in advance of the construction activity near a park or open space area.	
MM REC-3a	Coordinate with Park and Open Space management and provide signage, barriers, and monitors to ensure safety of trail and park users. PG&E shall coordinate with park and open space managers at least 30 days in advance regarding temporary closures required for project construction activities. If traditional access is temporarily unavailable, signs advising recreational facility users of construction activities, including directions to alternative trails and/or bikeways, shall be posted and clearly visible at entrance gates to park and open	PG&E to coordinate with parks 30 days in advance and post notification, signage, and barriers 1 week prior to construction activity	

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	space areas. Signage will be posted at least 1 week in advance of the construction activity near a park or open space area. Where construction activities require use of or obstruct a trail or other park area otherwise open to recreational users, barriers, tape, or other devices blocking access or warning users of construction activity shall be in place. If available, routes around the construction will be identified and clearly marked. Where a trail or site is obstructed by construction activity monitors shall be onsite to prevent unauthorized public access to the construction area and to direct recreational users around or away from the site.		
MM REC-5a	Coordinate with managers of recreation facilities to restore damaged assets. PG&E shall coordinate with managers or owners of public and private recreation facilities (including trails, camping areas, playgrounds, parking areas, and similar assets) to determine if reasonable feasible alternatives are available that would reduce impacts and disruption, and to assess and address any significant damage resulting directly from PG&E construction activities. PG&E will coordinate with park managers regarding the extent of the areas to be used, the access to such areas, and the timing and duration of use.	PG&E to notify and coordinate with	
Transportation			
APM TRA-1	PG&E Temporary Traffic Controls. PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to state route crossings and the transport of oversized loads and certain materials, and will comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. PG&E will develop traffic control plans to detail road and lane closure or width reduction or traffic diversion as required by the encroachment permits. Residents and emergency service providers will be notified of upcoming road closures consistent with the notification procedures described in APM NOI-1. Construction activities that are in, along, or cross local roadways will follow best management practices and local jurisdictional encroachment permit requirements—such as traffic controls in the form of signs, cones, and flaggers—to minimize impacts on traffic and transportation, including emergency vehicle access and evacuation routes in the project area. Where work areas will occupy the end of a street with no secondary access and residential access may be restricted, PG&E will implement residential safe transport. PG&E will provide the CPUC with copies of permits obtained prior to construction activity in each jurisdiction or location. If required for obtaining a local encroachment permit, PG&E will establish a Traffic Management Plan	PG&E to develop traffic control plans and obtain required encroachment permits. Provide the CPUC with copies of all required permits and plans	

PRE-CONSTRUCTION MITIGATION MEASURES (MM), APMs, and Field Protocols (FP)

APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
	(TMP) to address haul routes, timing of heavy equipment and building material deliveries, workers and equipment parking, potential street or lane closures, signing, lighting, and traffic control device placement. When working on state highways, PG&E will ensure traffic control operations are compliant with both the California Temporary Traffic Control Handbook, 2019 edition, and the California Manual on Uniform Traffic Control Devices, 2014 edition, and any updated versions of these documents that become available before start of construction.		
MM T-1a	Traffic Management Plan and Safe Transport. PG&E shall prepare a Traffic Management Plan (TMP) for review by local jurisdictions and agencies within the Project area at least 3 months prior to any construction activities requiring heavy vehicle and equipment traffic on public roadways or full or partial closure of public streets. Documentation of coordination with local jurisdictions and agencies issuing encroachment or traffic control permits will be provided to the CPUC at least 1 month prior to construction associated with the permit. Local jurisdictions and agencies may include Contra Costa County, Alameda County, City of Orinda, City of Piedmont, City of Oakland, EBMUD, EBRPD, AC Transit, Caltrans, or others where appropriate. The TMP must be reviewed by local jurisdictions and agencies prior to construction, which may occur separately from the approval process associated with the issuance of road encroachment or traffic control permits prior to construction. The TMP shall establish methods for minimizing construction effects on roadways, transit services, pedestrian facilities, and bicycle facilities; and address staging areas, haul routes, types of equipment anticipated to be used, timing of heavy equipment and material deliveries, workers and equipment parking, potential street or lane closures, alternative routes and detours, signing, lighting, temporary relocation or closure of bus stops, and traffic control device placement to minimize disruption and ensure safe and efficient traffic flow. The TMP shall include measures for directing delivery and haul trucks away from sensitive receptor locations (e.g., residential neighborhoods, schools) and congested intersections during construction, where reasonably feasible. The TMP shall identify routes that minimize driving of delivery and haul trucks through sensitive receptor locations as feasible. The TMP shall also establish the timing and method for notifying emergency service providers regarding Project activities and notifying the public, including wayfinding signage, regarding full or partial closure of public streets, detours, and alternative routes for various travel modes including relocated or closed bus stops.	PG&E to submit Traffic Management Plan to local jurisdictions at least 3 months prior to any construction activities	

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APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
	The Traffic Management Plan shall include a separate section entitled “Safe Transport.” This section shall define the following components: • A list of all residences (by street address) that could have access blocked by construction equipment or activities and that have no alternate or secondary routes for entry or egress (see EIR Table 2.3-6). • A defined outreach effort (stating the frequency, method, and intended audience for outreach, such as the general public or a targeted community) that identifies one or more contacts within each household to define likely transport needs during the construction timeline, including consideration of family size and age (and whether car seats or pet carriers are needed), disability or special needs, and timing of typical daily ingress and egress needs. Based on the result of the outreach efforts, PG&E shall prepare transport plan and provide all requested transport during the construction activity. • A written communication plan to be provided to each affected household prior to the start of each week’s construction that describes the anticipated daily construction activities, the specific location and type of activity, and the resulting constraints on household vehicle use.		
Tribal Cultural Resources (TCR)			
MM TCR-2a	Native American Monitoring. Prior to ground disturbing activities, a Confederated Villages of Lisjan Nation (CVLN) Tribal monitor(s) shall be retained to monitor all ground disturbing construction activity within 500 feet of a current or historic creek channel.	Retain a CVLN monitor onsite at their discretion. If a CVLN monitor does not arrive onsite when needed, the Applicant will notify the CPUC and work will be allowed to continue.	
Utilities and Service Systems			
MM US-1a	Underground Utilities Accident Response Plan. PG&E shall prepare and implement a plan to facilitate immediate response to damage caused to an underground utility. The plan shall be submitted to the CPUC for review and approval at least 60 days before the start of construction in any underground segment. The plan shall include: ▪ A list of emergency contacts for all utility providers within the Underground Power Line segment ROW and for the Cities of Oakland and Piedmont emergency response providers. This information shall be retained onsite where underground construction is taking place.	Underground Utilities Accident Response Plan to be submitted to the CPUC for approval 60 days before construction in any underground segment.	

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APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
	▪ Description of actions to be taken by PG&E's construction personnel in the event of an accident affecting each different type of underground utility (e.g., natural gas, water, telecommunications, sewer). ▪ Description of notification processes to the affected community in the event of an unanticipated service outage. ▪ Description of the service areas covered by existing underground utilities so notification to the community can be effectively communicated. Documentation of coordination with all utility owners with facilities in the immediate vicinity of proposed Project construction, including their review of PG&E's construction plans and a description of any protective measures or compensation to be implemented to protect affected utilities.		
Wildfire			
APM WFR-1	Construction Fire Prevention Plan. A project-specific Construction Fire Prevention Plan for construction of the Project will be prepared prior to initiation of construction by PG&E. The PG&E plan will be approved by the CPUC. The final plan will be approved by the CPUC at least 30 days prior to the initiation of construction activities. The plan will be fully implemented throughout the construction period, and it will include the following at a minimum: ▪ The purpose and applicability of the plan ▪ Incorporation of the requirements in PG&E's current Utility Standard TD-1464S for Preventing and Mitigating Fires While Performing PG&E Work ▪ Responsibilities and duties for compliance ▪ Preparedness training and drills ▪ Procedures for fire reporting, response, and prevention that include: ▪ Identification of daily site-specific risk conditions ▪ The tools and equipment needed on vehicles and on hand at sites ▪ Reiteration of fire prevention and safety considerations during tailboard meetings ▪ Daily monitoring of the Red-Flag Warning System with appropriate restrictions on types and levels of permissible activity ▪ Coordination procedures with federal, state, and local fire officials and emergency responders, including notifications of temporary lane or road closures ▪ Crew training, including the construction fire prevention practices described in APM WFR-2 ▪ Method(s) for verifying that all plan protocols and requirements are being followed	PG&E to submit construction fire prevention plan to the CPUC for approval at least 30 days prior to the initiation of construction activities	

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APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
	PG&E or its contractor will be responsible for training Project personnel and enforcing all provisions of the PG&E Construction Fire Prevention Plan, as well as performing other duties related to fire detection, prevention, and suppression for the Project. Construction activities will be monitored to ensure implementation and effectiveness of the plan.		
APM WFR-2	Wildfire Prevention Practices. PG&E will implement the following fire prevention practices at active construction sites and during maintenance activities: - Existing PG&E personnel conducting maintenance on the Project are trained on the PG&E Utility Standard TD-1464S for Preventing and Mitigating Fires While Performing PG&E Work or relevant current standard and will follow the standard in regard to training, preparation, communication methods and means, observations of and alerts concerning weather conditions including NWS events, and PG&E's work restrictions and fire mitigation required for elevated PG&E Utility FPI ratings (R4, R5, or R5-Plus). - Construction personnel will be trained in fire-safe actions, including PG&E's current Utility Standard for Preventing and Mitigating Fires While Performing PG&E Work, Wildfire Prevention Contract Requirements, and the Project's PG&E Construction Fire Prevention Plan concerning initial attack, firefighting, and fire reporting. Construction personnel will be trained and equipped to extinguish small fires to prevent them from growing into more serious threats. - Construction personnel will have fire suppression equipment on all construction vehicles per PG&E Utility Standard TD-1464S and will be required to park vehicles away from dry vegetation. Water tanks and/or water trucks will be sited or available at active project sites for fire protection during construction. - All construction crews and inspectors will be provided with radio and cellular telephone access that is operational in all work areas and access routes to allow for immediate reporting of fires. All fires will be reported to the fire agencies with jurisdiction in the area upon discovery of the ignition. - While performing stationary ground-level jobs or activities from which a spark, fire, or flame may originate (for example, welding, cutting, grinding), all flammable material (for example, grass, leaf litter, dead or dying tree) must be removed down to the mineral soil around the operation for a minimum of 10 feet. - PG&E General Requirements for Wildfire Mitigation (R1 to R3) apply for PG&E work areas located farther than 5 miles from an FIA when the nearest	PG&E to implement wildfire prevention training and procedures during all phases of construction	

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APM/MM/ FP	Moraga Oakland X 115 Kilovolt Rebuild APM/MM/FP Requirements	Monitoring Requirement	Status
	FIA has an elevated FPI rating (R4, R5, or R5-Plus), except during NWS Red-Flag Warnings and Fire Weather Watch events when R5 mitigations would apply. - For work within an FIA, during Red-Flag Warning and Fire Weather Watch events, as issued by the NWS, and elevated PG&E Utility FPI rating (R4, R5, or R5-Plus), all construction activities will refer to the current PG&E Standard TD-1464S and related requirements such as PG&E Wildfire Prevention Contract Requirements, Attachment 1 – Wildfire Mitigation Matrix, and Attachment 2 – Wildfire Risk Checklist Fire Mitigations. With the increased potential fire risk of R4, additional water resources are required, and a working fire watch is assigned to be able to continue work as long as the weather conditions are evaluated to ensure it remains safe to continue work. - For R5 and R5-Plus ratings, measures beyond R1 to R4 levels include posting a dedicated fire watch at the jobsite, making available a trailer-mounted water tank or alternative water delivery method at the jobsite, and modifying the fuel sources surrounding the jobsite. All planned work is suspended during an R5-Plus fire rating. During all emergency work being performed for an R5-Plus fire rating, personnel must have a PG&E Safety and Infrastructure Protection Team on standby or a 300-gallon water tender available. Use of heavy equipment (blades, dozers, skid steers, excavators, back hoes), construction hot work, and electrical equipment work (including tasks related to conductors, pole, and overhead equipment from which a spark, fire, or flames may originate) are allowed with the R5 mitigations in place but not allowed during R5-Plus conditions.		
MM WF-1	Prepare Emergency Evacuation Plan. At least 90 days before the start of construction on affected roadways, PG&E shall submit to the California Public Utilities Commission (CPUC) for review and approval a Construction Coordination Emergency Evacuation Plan that defines the following information: - Documentation of coordination with each affected jurisdiction, and incorporation of each jurisdiction’s requirements. - Identification and mapping of all designated evacuation routes defined by jurisdictions in the Project area. Evacuation route signage shall be installed and updated on a regular basis as construction activity moves. This signage would identify “critical” and “non-critical” evacuation routes. Critical evacuation routes are defined as evacuation routes that, if partially or entirely closed, would lead to an increase in evacuation times or blockage (dead-end). Non-critical evacuation routes are defined as short (less than	PG&E coordination with affected jurisdictions; Emergency Evacuation Plan and draft notification letters are submitted to CPUC at least 90 days before the start of construction on affected roadways	

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	0.25 miles) evacuation routes that, if partially or entirely closed, would not affect evacuation times or road capacity. The evacuation routes shall be based on net evacuation time for affected populations considering factors including, but not limited to, each jurisdiction's identified evacuation routes, which will be determined in coordination with each applicable jurisdiction. Affected populations will also be determined in coordination with each applicable jurisdiction based on the proximity of residents to affected evacuation routes. ▪ Identification of all roads that will support any type of construction activity (including definition of construction vehicle access routes to all work areas). Maps and descriptions shall define the activity that would occur on each affected road (e.g., access only, parking, crane set-up, guard structure installation) and map the specific extent of each activity at an appropriate level of detail, including identification of all residential driveways. ▪ Provide for CPUC review of draft notification letters, which, pursuant to MM N-1b, will be provided to all affected residents a least one month prior to the start of construction, including all residents, emergency service responders, and other affected local agencies that would use affected roads in an evacuation situation. Notification shall include information on detours and schedule of road closures and shall be coordinated with requirements of other mitigation measures (including MM N-1b). ▪ PG&E shall provide information of closures to the City of Oakland to connect with Genasys Protect to provide real-time information on Project-related road closures to the public.		
	MM WF-1c School Session Construction Timing Restriction. At least 30 days prior to planned construction of the underground rebuild segment of the Project, PG&E shall coordinate with all schools within 0.25 miles of underground power line installation to determine restricted hours of construction to avoid peak school traffic hours on weekday school days during the school year. Restricted hours shall generally avoid the one hour period for morning drop off and one hour period for afternoon pick-up or as otherwise determined by each school. If Alternative 4 (Skyline-Ascot Underground Alternative) is selected, the construction of the underground segment along Ascot Drive between Scout Road and Mountain Boulevard shall not be constructed while school is in session at either Montera Middle School or Joaquin Miller Elementary School.	PG&E to coordinate and restrict construction timing at least 30 days prior to the start of underground construction	