

Attachment A - Mitigation Monitoring and Reporting Program Northern San Joaquin 230 Kilovolt Transmission Project

Mitigation Monitoring and Reporting Program NORTHERN SAN JOAQUIN TRANSMISSION LINE PROJECT

INTRODUCTION

The California Public Utilities Code confers authority upon the California Public Utilities Commission (CPUC) to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is CPUC practice, pursuant to its statutory responsibility, to protect the environment and to require that mitigation measures imposed as conditions of approval be properly implemented, monitored, and reported. This requirement is codified statewide in Public Resources Code (PRC) Section 21081.6, which requires a public agency to adopt a mitigation monitoring or reporting program when it approves a project that is subject to preparation of an environmental impact report (EIR) and where the EIR for the project identifies significant adverse environmental effects. CEQA Guidelines Section 15097 describes agency requirements for mitigation monitoring. This Mitigation Monitoring and Reporting Program (MMRP) implements the CPUC's responsibilities under PRC Section 21081.6.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to assist the responsible parties in implementing the commitments made through applicant-proposed measures (APMs) and mitigation measures identified in the EIR for the Northern San Joaquin 230 kV Transmission Line Project. The purpose of the MMRP is to document that the mitigation measures required by the CPUC are implemented and that mitigated environmental impacts are reduced to the level identified in the EIR and the CEQA findings adopted by the CPUC.

ROLES AND RESPONSIBILITIES

Responsibility for implementing the adopted mitigation measures rests with Pacific Gas & Electric Company (PG&E), unless otherwise specified in the mitigation measure. The CPUC will be responsible for monitoring implementation of the MMRP and for enforcing the procedures adopted herein. Generally, this will be accomplished through the CPUC Energy Division CEQA Unit. The CPUC may delegate duties and responsibilities for monitoring implementation to third-party monitors or consultants working on behalf of the CPUC (referred to as CPUC mitigation monitors). While the implementation of some of the measures will also require reporting to responsible or trustee agencies where areas or resources under their jurisdiction are potentially affected or involved, PG&E must ultimately demonstrate to the lead agencies that the mitigation measures have been appropriately implemented.

As the State's regulator of investor-owned utilities, the CPUC has the authority to halt any construction, operation, or maintenance activity associated with the project if the activity is determined to be a deviation from the approved project or from the adopted mitigation measures. As such, any member of the CPUC mitigation monitoring team has the authority to issue a Stop Work Order that requires the contractors to temporarily halt or redirect project activities if a sensitive resource is put in undue risk beyond previously authorized or permitted levels, and if mitigation measure(s) are not meeting the effectiveness criteria identified in the MMRP. In addition, a Stop Work Order may be issued if unauthorized project activities are observed, such as the use of a work area that was not approved or if significant compliance risks remain unresolved. The CPUC will make final determinations regarding Stop Work Orders for the project. In cases where PG&E is found to be in non-compliance, the CPUC may exercise the CEQA Citation Program, adopted by the Commission in Resolution E-4550, which authorizes Commission staff to efficiently issue citations and levy fines when needed to quickly address non-compliance incidents occurring on the project site.

GENERAL MONITORING PROCEDURES

Many of the mitigation measures and APMs require action on the part of the construction supervisors or crews during the construction phase of the project for successful implementation. To ensure success, the following actions, detailed in specific measures included in this MMRP, will be taken:

- PG&E shall require all contractors to comply with the conditions of project approval, including all applicable mitigation measures and APMs.
- One or more pre-construction meetings will be held to inform and train construction personnel about the requirements of the MMRP.
- A written summary of mitigation monitoring procedures will be provided by PG&E to construction supervisors for all APMs and mitigation measures requiring their attention.

Reporting Procedures

Site visits and specified monitoring procedures performed by other individuals will be reported to the CPUC mitigation monitor assigned to the construction. A monitoring record form will be submitted to the mitigation monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress tracked by the mitigation monitor. The mitigation monitor will note any problems that may occur and recommend appropriate action to rectify the problems. PG&E shall provide the CPUC with written quarterly reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project. The first report shall be submitted before the end of the first quarter in which construction begins and continue until construction is complete.

Inquiries related to this MMRP should be directed to:

Contact: Boris Sanchez, CEQA Project Manager
505 Van Ness Ave
San Francisco, CA 94102
Phone: (408) 705-6030
Email: Boris.Sanchez@cpuc.ca.gov

Project Changes

PG&E will inform the CPUC mitigation monitor team in writing of any mitigation measures that are not being, or cannot be, successfully implemented and provide alternative approaches for successful mitigation implementation. CPUC's designated Project Manager, along with the mitigation monitor(s), will evaluate any proposed deviations from the approved project to ensure they are consistent with CEQA requirements. Any proposed deviation from the approved project and adopted measures, including correction of such deviation, shall be reported immediately by PG&E to the CPUC and the CPUC's mitigation monitor for review and CPUC approval. In some cases, a variance may require approval by a CEQA responsible agency.

Depending on its nature, a requested deviation would be processed as a Minor Project Change (MPC) or a Petition for Modification (PFM). MPCs would be strictly limited to minor project changes that do not trigger additional permit requirements, do not increase the severity of an impact or create a new impact, and are within the geographic scope of the EIR. If a project change would create or have the potential to create a new significant impact, increase the severity of an impact, or occur outside the geographic area evaluated in the EIR, PG&E would be required to submit a PFM to the CPUC. The CPUC would evaluate the PFM under CEQA, as appropriate, to determine what form of supplemental environmental review, if any, would be required.

Dispute Resolution Process

Issues with mitigation monitoring and enforcement should first be addressed informally at the field level between the CPUC mitigation monitor team and PG&E, including the PG&E Project Manager or Construction Manager, as necessary. Should the issue not be resolved at the field level, disputes and complaints should be directed to the CPUC's designated Project Manager for resolution. The Project Manager will attempt to resolve the dispute. Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviation from the approved project or MMRP.

Condition Effectiveness Review

In order to fulfill its statutory mandates to mitigate or avoid significant effects on the environment and to design an MMRP to ensure compliance during project implementation (PRC Section 21081.6), the CPUC may conduct a comprehensive review of conditions which are not effectively mitigating impacts at any time it deems appropriate, including as a result of the Dispute Resolution procedure outlined above. If, in its review, the CPUC determines that any conditions are not adequately mitigating significant environmental impacts caused by the project, or that recent proven technological advances could provide more effective mitigation, then the CPUC may impose additional reasonable conditions to effectively mitigate these impacts. These reviews shall be conducted in a manner consistent with the CPUC's rules and practices.

MITIGATION MONITORING AND REPORTING PROGRAM TABLE

The attached table identifies measures, monitoring responsibility, and timing. The categories identified in the attached MMRP table are described below.

- **Applicant-Proposed Measures and Mitigation Measures**– This column provides the verbatim text of the adopted measure. Note that the table does not include APMs that are specifically superseded by mitigation measures or APMs proposed by the applicant that were not relied upon to support the analysis or conclusions in the EIR.
- **Timing** – This column identifies the time frame in which the mitigation will be implemented.
- **Monitoring/Reporting/Verification Requirements** – This column identifies the monitoring and reporting requirements of each adopted measure.

CPUC has prepared this MMRP for the components of the project proposed by PG&E that are within CPUC's jurisdiction. As indicated above, the City of Lodi, acting as a responsible agency, will oversee the fulfillment of the mitigation obligations of Lodi Electric Utility (LEU). It is assumed that the City of Lodi will adopt an MMRP as a responsible agency under CEQA for the aspects of the project that will be completed by LEU. To facilitate the City's adoption of an MMRP for the portion of the project under its authority, a separate table is provided at the end of this document that includes the best management practices (BMPs) and mitigation measures that apply to LEU.

Each utility is responsible for implementing the measures it adopts to address potentially significant impacts, as detailed in the respective tables. Because LEU is not an applicant for this proceeding, monitoring of LEU and PG&E mitigation responsibilities will be conducted separately unless shared monitoring is specifically coordinated by LEU and PG&E.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
Aesthetics		
APM AES-1: Aesthetics Impact Reduction During PG&E Construction. All PG&E project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from the public view where possible. Where this is unavoidable, construction sites, staging areas, and fly yards will be visually screened using temporary screening fencing. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of project construction, project staging and temporary work areas will be returned to pre-project conditions, including regrading of the site and revegetation or repaving of disturbed areas to match pre-existing contours and conditions.	During construction and following completion of construction.	CPUC mitigation monitor to inspect and verify compliance.
APM AES-2: Use of Dulled Galvanized Finish on PG&E Tubular Steel Poles and PG&E Non-Specular Conductors. Use of a factory-dulled galvanized finish on new PG&E TSPs and PG&E non-specular (nonreflective) conductors would reduce the potential for a new source of glare and visual contrast resulting from the PG&E TSPs and conductors.	During construction.	PG&E to include in final design documents.
Agriculture		
APM AGR-1: Minimize Impacts on Active Agricultural Areas. ▶ Prior to construction, PG&E will provide written notice to landowners outlining construction activities, preliminary schedule, and timing of restoration efforts. ▶ PG&E will coordinate with landowners to minimize construction-related disruptions to seasonal farming operations. To the extent reasonably feasible, PG&E will schedule construction activities to minimize disruptions to harvesting, planting, and crop maintenance activities, such as fertilizer application and crop dusting. ▶ PG&E will establish temporary overland access routes and work areas to minimize disruptions to agricultural infrastructure (including irrigation lines, wells, pumps, ditches, and drains) to the greatest extent reasonably feasible. If necessary, and upon agreement between PG&E and the landowners, agricultural infrastructure will be protected with temporary materials (for example, steel plates, blankets) to prevent inadvertent damage during construction. Where feasible, overland routes within orchards and vineyards will be aligned with the planting layout or otherwise to minimize tree and vine removal. ▶ If trees or other crops cannot be avoided by PG&E as specified previously, impacts will be limited to the minimum necessary to construct the project, and PG&E will provide the agricultural owner with fair market compensation for crops removed, crops unable to be harvested, lost planting cycles, and any damaged infrastructure. ▶ PG&E will restore agricultural land temporarily impacted by construction to pre-project conditions following completion of construction, including areas impacted by establishment of temporary staging, laydown and storage areas, overland access, guard structures, and pull sites. If grading occurs in actively planted agricultural areas, topsoil will be stockpiled and used to backfill excavations to pre-existing grade when construction is complete. Restoration of sites will involve removing any rock or material imported to stabilize the site, replacing topsoil, decompacting any soil that has been compacted by heavy equipment, and replanting agricultural crops. The	Prior to, during, and following completion of construction.	PG&E to include in final design documents.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
responsibility of performing these various tasks may be stipulated in an agreement between PG&E and the landowner. If a landowner is better equipped or prefers to replant crops or perform other tasks themselves, then PG&E will provide just compensation for this work.		
Air Quality		
APM AIR-1: PG&E Dust Control During Construction. ▶ PG&E will implement measures to control fugitive dust in compliance with the San Joaquin Valley Air Pollution Control District (SJVAPCD) standards. Dust control measures will include the following at a minimum: ▶ All exposed surfaces with the potential of dust-generating will be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site. ▶ The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time will be limited. Activities will be phased to reduce the amount of disturbed surfaces at any one time. ▶ Cover all haul trucks entering/leaving the site and trim their loads as necessary. ▶ Use wet power vacuum street sweepers to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. The use of dry power sweeping is prohibited. ▶ All trucks and equipment, including their tires, will be washed off prior to leaving project sites. ▶ Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at project sites. ▶ Water and/or cover soil stockpiles daily. ▶ Vegetative ground cover will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. ▶ All vehicle speeds will be limited to 15 miles per hour or less on unpaved areas. ▶ Implement dust monitoring in compliance with the standards of the local air district. ▶ Halt construction during any periods when wind speeds are in excess of 50 mph.	During construction.	CPUC mitigation monitor to inspect and verify compliance.
Archaeological, Historic, and Tribal Cultural Resources		
APM CUL-1: Develop and Implement Worker Environmental Awareness Program Prior to Construction. 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 stand-alone 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:	Prior to and during construction.	PG&E to provide CPUC with a copy of the training materials and training sign-in sheets.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
▶ A review of archaeology, history, precontact, and Native American cultures associated with historical resources in the project vicinity ▶ A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation ▶ 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 A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to CPUC.		
APM CUL-2: Archaeological Construction Monitoring in High-Sensitivity Areas. In high-sensitivity areas where survey did not identify archaeological resources (PG&E structures W12, W13 and W14), once per day during ground-disturbing activities a qualified archaeological monitor will observe the ground-disturbing activities and have the authority to halt ground-disturbing work temporarily within 100 feet of a find when safe to do so to assess the find. The assessment, and any subsequent evaluation, will follow the processes described in APM CUL-3 [replaced with Mitigation Measure 3.5-2a]. Monitoring at these locations can be reduced if, after initial monitoring, the qualified archaeological monitor has determined there is a low likelihood of identifying cultural resources.	During construction.	Qualified professional archaeologist report to CPUC.
APM CUL-4: Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during PG&E construction, work within 100 feet of the find will stop immediately and the construction supervisor will contact the PG&E cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology. Upon discovery, the Coroner Division of the San Joaquin County Sheriff's Office will be contacted for identification of human remains. The Coroner has 2 working days to examine the remains after being notified. ▶ If the remains are Native American, the Coroner must notify the NAHC of the discovery within 24 hours. The NAHC then will identify and contact a MLD. The MLD may make recommendations to the landowner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. When proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and	During construction.	PG&E to document compliance and report to CPUC.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented. ▶ If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any human remains or associated funerary objects will be determined in consultation between the landowner and the MLD.		
Mitigation Measure 3.5-2a [PG&E and LEU]: Inadvertent Archaeological Resource Discoveries The following mitigation measure shall supersede and replace APM CUL-3 and BMP CUL-3 for inadvertent discoveries: ▶ If any precontact or historic-era subsurface archaeological features or deposits (e.g., ceramic shard, trash scatters), including locally darkened soil ("midden"), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted, and a qualified professional archaeologist (one who meets the Secretary of the Interior's Professional Qualification Standards for archaeology) shall be retained to assess the significance of the find. ▶ The construction crew would protect the discovery from further disturbance until it has been assessed by a qualified archaeologist. ▶ The construction supervisor would immediately contact the project construction inspector and City of Lodi or CPUC (as appropriate). ▶ City of Lodi or CPUC would coordinate with the state lead officials to determine appropriate procedures to reduce effects on the resource. ▶ If the discovery can be preserved in place (which shall be the preferred manner of mitigating impacts on archaeological and tribal sites) and no further impacts would occur, then the resource would be documented on DPR 523 forms, and no further effort would be required. ▶ If the resource cannot be avoided and may be subjected to further impacts, a qualified archaeologist in coordination with City of Lodi or CPUC (as appropriate) would evaluate the significance of the discovery in accordance with the state laws outlined previously; personnel would implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist would complete an evaluation	During construction.	Qualified professional archaeologist report to CPUC.

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of historic-period resources, while evaluation of precontact resources would be completed by a qualified archaeologist specializing in California prehistoric archaeology. ▶ If it is determined that by the qualified archaeologist in coordination with City of Lodi or CPUC (as appropriate) that the discovery has the potential to be a tribal cultural resource, then Mitigation Measure 3.5-3 shall be followed. ▶ Ground disturbance within the discovery shall resume only when City of Lodi or CPUC (as appropriate) have determined that all necessary investigation and evaluation of the resource has been completed.		
Mitigation Measure 3.5-2b [PG&E]: Establish a No-Disturbance Buffer for Unevaluated Archeological Resources The following mitigation shall be implemented prior to any ground disturbance (including grading and excavations) associated with poles 18-22 on the PG&E Industrial Tap. To ensure that unevaluated archeological resources are properly protected, fencing or stake markers (or appropriate markers) will be established around P-39-004279, P-39-004901, and BD-01. Before any project related activities are conducted in the vicinity of the resources, a qualified archaeologist and/or PG&E cultural resources specialist shall establish construction fencing or stakes immediately adjacent to each of the three archaeological resources. After it is established, the fencing or stake markers shall be checked periodically by the archaeologist to make sure it stays in place and no damage has occurred. This will ensure that the three archaeological resources continue to be avoided during project-related work. The fences or stakes shall remain in place until project work in the vicinity of the resources is complete; fence or stake removal shall be overseen by the archaeologist.	During construction.	Qualified professional archaeologist report to CPUC.
Mitigation Measure 3.5-3: Inadvertent Discoveries of Tribal Cultural Resources The following mitigation measure would be employed (after stopping work and following the procedure for determining eligibility in Mitigation Measure 3.5-2a), and shall supersede and replace APM TCR-1 and BMP TCR-1 for inadvertent discoveries: ▶ As noted on Mitigation Measure 3.5-2a, construction work shall stop within 100 feet of a resource inadvertently discovered that could potentially be a tribal cultural resource. ▶ The LEU or CPUC (as appropriate) would identify and contact the lead contact person for the California Native American Tribe(s) potentially associated with the cultural resource and with a traditional and cultural affiliation with the geographic area of the proposed project. The CPUC would communicate with the lead contact person to set up a meeting with LEU (if within LEU jurisdiction) or the CPUC. ▶ LEU or CPUC would participate in discussions with the California Native American Tribe(s) to determine whether the resource is a "tribal cultural resource" as defined by PRC Section 21074 and the tribe(s)' preferred method of mitigation, if the resource is determined to be a TCR.	During construction	PG&E to notify CPUC of any discovery. CPUC to coordinate with tribe.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
- Procedures may include preservation in place (which shall be the preferred manner of mitigating impacts on tribal sites). - If the tribal cultural resource cannot be avoided and may be subjected to further impacts, the California Native American Tribe(s) in coordination with LEU (if applicable) or CPUC would evaluate the significance of the discovery in accordance with the state laws outlined previously and shall develop the appropriate method of treatment. - Ground disturbance within the area of discovery shall resume only when LEU or CPUC (as appropriate), in coordination with the California Native American Tribe(s), has deemed appropriate to do so for tribal cultural resources.		
Biological Resources		
APM BIO-1: Develop and implement a PG&E Worker Environmental Awareness Program. A PG&E biologist familiar with resources in the area and with delivering Worker Environmental Awareness Programs will conduct an environmental awareness program for all onsite construction personnel before they begin work on the project. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of project permits. Training will include information about the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed of the presence, life history, and habitat requirements of all special-status species that may be affected by the PG&E portion of the project, and about state and federal laws protecting nesting birds, wetlands, and other water resources. An educational brochure will be produced for construction crews working on the project. Color photos of special-status species will be included, as well as a discussion of relevant APMs and specific avoidance or minimization measures for special-status species and habitats. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to CPUC.	Prior to and during construction.	PG&E to provide CPUC with a copy of the training materials and training sign-in sheets.
APM BIO-2: Avoid and protect nesting birds from PG&E impact. If construction is to occur during the avian nesting season (March 1 through August 15), a preconstruction migratory bird and raptor nesting survey will be performed by a PG&E biologist who is familiar with local avian species and nesting birds. Surveys will occur only in publicly accessible areas and areas where PG&E has existing access; private property will not be accessed and will instead be observed from adjacent accessible areas. Preconstruction nesting bird surveys will be performed in accordance with PG&E's Nesting Bird Management Plan. The preconstruction survey will cover a radius of 200 feet for non-listed raptors and 100 feet for non-listed passerines from project locations that will be actively worked at in the near term. Surveys for Swainson's hawk will cover a 0.25-mile radius from the project footprint. The survey will cover all affected areas where ground disturbance or vegetation	Prior to and during construction.	PG&E to communicate survey results to CPUC and ensure compliance. CPUC mitigation monitor to inspect and verify compliance.

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clearing is required in the near term. Subsequent surveys will be conducted in advance of other project locations becoming active. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the PG&E biologist in accordance with PG&E's Nesting Bird Management Plan. No heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active and the young have fledged. If it is not practicable to avoid work in an exclusion zone around an active nest, work activities will be modified to minimize disturbance of nesting birds but may proceed in these zones at the discretion of the biologist. As appropriate, the biologist will monitor work activities in these zones daily or periodically when construction is occurring and assess their effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work may need to be halted or redirected to other areas until the nesting and fledging is completed or the nest has otherwise failed for reasons not related to construction.		
APM BIO-3: Identify and mark sensitive biological resource areas near PG&E portion of the project. Sensitive biological resources (for example, aquatic resources and nesting birds) in or adjacent to PG&E construction work areas identified during the preconstruction surveys will be clearly marked in the field and on project maps as appropriate. Such areas will be avoided during construction to the greatest extent feasible.	Prior to and during construction.	PG&E to include in final design documents.
APM BIO-4: Install exclusion fencing near PG&E portion of the project. At the discretion of the PG&E biologist, prior to any ground-disturbing work in proximity to suitable habitat for special-status species or adjacent to wetlands or waters, exclusion fence will be installed around PG&E workspaces as appropriate. Exclusion fencing will be routinely inspected during project activities and any damage, such as holes or gaps, will be promptly repaired.	Prior to and during construction.	Directed and monitored by PG&E biologist.
APM BIO-5: Allow biological monitor onsite during PG&E construction activities in sensitive biological resource areas. At the discretion of the PG&E biologist, a qualified biologist will be onsite during construction activities in sensitive biological resource areas identified in APM BIO-4 unless the area has been protected by barrier fencing to protect sensitive biological resources and previously cleared by the qualified biologist and the PG&E biologist. The qualified biologist will ensure implementation and compliance with all avoidance and mitigation measures and have the authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.	Prior to and during construction.	Directed and monitored by PG&E biologist.
APM BIO-6: Avoid and protect special-status amphibians from PG&E impact. During wet weather or the rainy season, all open holes, pits, and trenches at PG&E work areas will be protected to ensure that wildlife does not become entrapped. Protective fencing, coverings, or ramps will be installed to either prevent wildlife from falling into excavations or to allow for escape if they do. At the end of each workday, steep-walled holes or trenches more than approximately 6 inches deep will be covered or provided with one or more escape ramps and/or fenced. Open	During construction.	Directed and monitored by PG&E biologist. CPUC mitigation monitor to inspect and verify compliance.

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excavations will be inspected, prior to the start of construction activities, to ensure that no wildlife is trapped. Construction personnel also will check underneath vehicles and within materials to be moved (that is, tires, tracks, pipes) for the presence of frogs when parked or placed near suitable aquatic or upland dispersal habitat.		
APM BIO-7: Implement general protection measures for wetlands and other waters near PG&E portion of the project. PG&E will implement the following general measures to minimize or avoid impacts on wetlands and other waters: ▶ Avoid wetlands and other waters during construction activities. ▶ Do not refuel vehicles within approximately 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed. ▶ Implement an SWPPP to minimize construction-related erosion and sediments from entering nearby waterways (refer to APM HYD-1).	During construction.	Directed and monitored by PG&E biologist. CPUC mitigation monitor to inspect and verify compliance.
APM BIO-8: Implement general resource protection measures for PG&E portion of the project. This APM consists of the following components: ▶ Hazardous materials spills. Emergency spill response and cleanup kits will be readily available for immediate containment and cleanup of an accidental spill. Construction crews will be trained in safe handling of hazardous materials and cleanup responsibilities. Any inadvertent spills into aquatic habitat will be reported to the applicable resource agencies within 24 hours. ▶ Reporting and communication. The PG&E biologist will be responsible for immediately reporting any capture and relocation, or inadvertent harm, entrapment, or death, of a federally or state-listed species under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA) to the applicable resource agencies. ▶ Restoring temporarily disturbed habitats. All habitat areas for special-status species that are temporarily disturbed as a result of project activities will be restored upon completion of construction. Disturbed areas will be restored and revegetated in coordination with landowners. Many areas are actively cultivated or grazed and landowners may request replanting of similar crops or plant species as existed previously. These may not necessarily be native plant species. For PG&E-owned parcels, revegetation would be accomplished through application of a habitat-appropriate native seed mix. Restoration is anticipated to be completed within approximately 6 to 9 months after the project, depending on landowner requests and the season in which disturbance activities and subsequent restoration activities will take place. ▶ Erosion control materials. Only tightly woven netting or similar material will be used for all geosynthetic erosion control materials such as coir rolls and geotextiles. No plastic monofilament matting will be used. Sod may be used when restoring landscaped areas.	During and following completion of construction.	Directed and monitored by PG&E biologist. CPUC mitigation monitor to inspect and verify compliance.

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▶ Minimizing grading and vegetation removal along access roads and construction work areas. PG&E will only trim, clear, or remove vegetation as necessary to establish the access routes and allow equipment use. Trees will be directionally felled away from sensitive biological resource areas and, if that is not possible, they will be removed in sections. Damage to adjacent trees will be avoided to the greatest extent possible. ▶ Weed management. Vehicles and construction equipment will be cleaned of mud and dirt as needed to minimize transport of weed plant parts or seed. Vehicles also will be cleaned at the completion of the project or when off-road use for that vehicle has been completed.		
PG&E SJVHCP AMM-1: Employees and contractors performing O&M activities will receive ongoing environmental education. Training will include review of environmental laws and guidelines that must be followed by all personnel to reduce or avoid effects on covered species during O&M activities.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-2: Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-3: The development of new access and ROW roads by PG&E will be minimized and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-4: Vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-5: Trash dumping, firearms, open fires (such as barbecues) not required by the O&M activity, hunting, and pets (except for safety in remote locations) will be prohibited in O&M work activity sites.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-6: No vehicles will be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-7: During any reconstruction of existing overhead electric facilities in areas with a high risk of wildlife electrocution (e.g., nut/fruit orchards, riparian corridors, areas along canal or creek banks, PG&E's raptor concentration zone), PG&E will use insulated jumper wires and bird/animal guards for equipment insulator bushings or will construct lines to conform to the latest revision of PG&E's Bird and Wildlife Protection Standards.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.

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PG&E SJVHCP AMM-8: During fire season in designated State Responsibility Areas, all motorized equipment will have federal or state approved spark arrestors; a backpack pump filled with water and a shovel will be carried on all vehicles; and fire-resistant mats and/or windscreens will be used when welding. In addition, during fire "red flag" conditions as determined by California Department of Forestry (CDF), welding will be curtailed, each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-9: Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, and habitat occupied by covered animal and plant species when O&M activities are the source of potential erosion problems.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-10: If an activity disturbs more than 0.25 acre in a grassland, and the landowner approves or it is within PG&E rights and standard practices, the area should be returned to pre-existing conditions and broadcast-seeded using a commercial seed mix. Seed mixtures/straw used for erosion control on projects of all sizes within grasslands will be certified weed-free. PG&E shall not broadcast-seed (or apply in other manner) any commercial seed or seed-mix to disturbance sites within other natural land-cover types, within any vernal pool community, or within occupied habitat for any plant covered species.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-11: When routine O&M activities are conducted in an area of potential VELB habitat, a qualified individual will survey for the presence of elderberry plants within a minimum of 20 feet from the work site. If elderberry plants have one or more stems measuring 1 inch or more in diameter at ground level, the qualified individual will flag those areas to avoid or minimize potential impacts on elderberry plants. If impacts (pruning/trimming, removal, ground disturbance, or damage) are unavoidable or occur, then additional measures identified in the VELB conservation plan and compliance brochure will be implemented. The VELB compliance brochure must be carried in all vehicles performing O&M activities within the potential range of VELB.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-17: If suitable habitat for covered amphibians and reptiles is present and protocol-level surveys have not been conducted, a qualified biologist will conduct preconstruction surveys prior to O&M activities involving excavation. If necessary, barrier fencing will be constructed around the worksite to prevent reentry by the covered amphibians and reptiles. A qualified biologist will stake and flag an exclusion zone of 50 feet around the potentially occupied habitat. No monofilament plastic will be used for erosion control in the vicinity of listed amphibians and reptiles. Barrier fencing will be removed upon completion of work. Crews will also inspect trenches left open for more than 24 hours for trapped amphibians and reptiles. A qualified biologist will be contacted before trapped amphibians or reptiles (excluding blunt nosed leopard lizard and limestone salamander) are moved to nearby suitable habitat.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.

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PG&E SJVHCP AMM-18: If western burrowing owls are present at the site, a qualified biologist will work with O&M staff to determine whether an exclusion zone of 160 feet during the non-nesting season and 250 feet during the nesting season can be established. If it cannot, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-19: If a Swainson's hawk nest or white-tailed kite nest is known to be within 0.25 mile of a planned worksite, a qualified biologist will evaluate the effects of the planned O&M activity. If the biologist determines that the activity would disrupt nesting, a buffer and limited operation period (LOP) during the nesting season (March 15–June 30) will be implemented. Evaluations will be performed in consultation with the local DFG representative.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-22: All vegetation management activities will implement the nest protection program to avoid and minimize effects on Swainson's hawk, white-tailed kite, golden eagle, bald eagle, and other nesting birds. Additionally, trained pre-inspectors will use current data from DFG and CNDDDB and professional judgment to determine whether active Swainson's hawk, golden eagle, or bald eagle nests are located near proposed work. If pre-inspectors identify an active nest near a proposed work area, they will prescribe measures to avoid nest abandonment and other adverse effects to these species, including working the line another time of year, maintaining a 500-foot setback, or if the line is in need of emergency pruning, contacting HCP Administrator.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
PG&E SJVHCP AMM-23: If medium or large disturbance covered activities take place within 0.5 miles of an active breeding colony of tricolored blackbirds or bank swallows or a small disturbance covered activities take place within 350 feet of an active breeding colony of these species a qualified biologist will evaluate the site prior to work during the breeding season (April 1–July 31). If an active colony of either species could be disrupted by the covered activity, the biologist will stake and flag an exclusion zone of at least 350 feet around the colony prior to O&M activities at the site. This exclusion zone will be established in the field based on site conditions, the covered activity, and professional judgment by a qualified PG&E biologist and will be greater than the minimum distance. Work will not occur in this exclusion zone during April 1–July 31.	Operations and maintenance.	PG&E to maintain compliance with CDFW and USFWS permit conditions.
Mitigation Measure BIO-2a [PG&E]: Conduct Survey for Estivating California Tiger Salamanders and Monitor Initial Ground Disturbance The following mitigation measure shall supersede and replace APMs BIO-3 and BIO-4 for California tiger salamander for project construction activities: ▶ Within 48 hours prior to any ground-disturbing work, vegetation removal, or staging activities associated with project construction activities in grassland habitat east of the PG&E Lockeford Substation (i.e., PG&E staging areas	Prior to construction.	Survey and monitoring by a qualified biologist. Reporting submitted to CPUC.

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and work areas adjacent to the PG&E Lockeford Substation and near E19, E20, E9, E7, and E6 shown in Appendix B to the Draft EIR), a qualified biologist approved by CPUC and with an active USFWS Section 10(a)(1)(A) recovery permit shall survey the areas for California tiger salamander. The survey will include a search for rodent burrows and cracks and inspection of these features using appropriate methods (e.g., a borescope). ▪ If California tiger salamanders are detected during the survey in an area where the activity is a covered activity under the PG&E SJVHCP (i.e., limited minor construction and O&M activities), work can continue with application of SJVHCP requirements. ▪ If California tiger salamanders are detected during the survey in an area where the activity is not a covered activity under the PG&E SJVHCP (i.e., limited minor construction and O&M activities), all project construction and staging activities shall cease within a buffer the size of which will be determined by the qualified biologist such that direct and indirect impacts on the salamander would not occur, the grassland habitat determined to be occupied is avoided, and the salamander can leave the project area into adjacent suitable habitat unimpeded by project construction and staging activities or equipment. In addition, USFWS, CDFW, and CPUC shall be notified. Project activities shall not resume in the buffer until CDFW and USFWS have provided input. PG&E shall initiate consultation with CDFW and USFWS, and if it is determined, in consultation with CDFW and USFWS, that take of California tiger salamanders could occur, then PG&E may be required to obtain incidental take authorization through Section 7 consultation or a Section 10 permit pursuant to ESA and through Section 2081 of California Fish and Game Code pursuant to CESA. Additional conservation measures to reduce the possibility of take may be required by CDFW or USFWS during the consultation process, and these measures shall be implemented by PG&E (e.g., biological monitoring, preconstruction surveys, procedures for incidental sightings of California tiger salamanders). CDFW and USFWS may also require compensatory mitigation through on-site habitat restoration or purchase of credits at an appropriate mitigation bank. ▪ If no California tiger salamanders are detected, the qualified biologist shall submit a report documenting the survey methods and results to PG&E and CPUC, and then the following measures shall be implemented. ○ After the areas described above are surveyed, and it is determined that California tiger salamanders are not present, further mitigation will not be required. ○ In an area where the activity is not a covered activity under the PG&E SJVHCP (i.e., limited minor construction and O&M activities), a qualified biologist shall be present during any initial ground-disturbing activities in work areas that contain grassland habitats as described above. If a California tiger salamander is observed or unearthed during initial ground-disturbance activities, all work shall stop immediately, and USFWS, CDFW, and CPUC shall be contacted. All project		

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activities in the work area shall cease until USFWS and CDFW have provided further guidance. The qualified biologist shall have the authority to stop or redirect work if construction activities are likely to affect California tiger salamanders. In areas where the activity is covered under the PG&E SJVHCP (i.e., limited minor construction and O&M activities), work can continue with application of PG&E SJVHCP requirements. o No exclusion fencing shall be installed in the areas described above to avoid entanglement, entrapment, and potential take of California tiger salamanders.		
Mitigation Measure BIO-2b [PG&E and LEU]: Conduct Focused Surveys for Special-Status Birds, Nesting Raptors, and Other Native Nesting Birds and Implement Protective Buffers The following mitigation measure shall supersede and replace APM BIO-2, APM BIO-3, BMP BIO-2, and BMP BIO-3 for special-status birds: ▶ To minimize the potential for loss of special-status bird species, raptors, and other native birds, PG&E and LEU project construction and LEU O&M activities (e.g., tree removal, vegetation clearing, ground disturbance, staging) shall be conducted during the nonbreeding season (approximately September 1 through January 31, as determined by a qualified biologist), if feasible. If project activities are conducted during the nonbreeding season, no further mitigation shall be required. ▶ Within 14 days before the onset of all PG&E and LEU project construction or LEU O&M activities during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), a qualified biologist approved by CPUC, familiar with birds of California and with experience conducting nesting bird surveys shall conduct focused surveys for special-status birds, other nesting raptors, and other native birds. Surveys shall be conducted in accessible areas (i.e., publicly accessible areas and areas where PG&E or LEU has existing access) within 0.25 miles of the work area for Swainson's hawk and white-tailed kite and 500 feet of the work area for other raptor species, special-status birds, and non-raptor common native bird nests. Private property will be observed (e.g., using binoculars or spotting scopes) from adjacent accessible areas. ▶ Surveys for Swainson's hawk shall be conducted according to the guidelines outlined in <i>Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley</i> (Swainson's Hawk Technical Advisory Committee 2000). ▶ If no active nests are found, the qualified biologist shall submit a report documenting the survey methods and results to PG&E or LEU and CPUC, and no further mitigation shall be required. ▶ If active nests are found, impacts on nesting birds shall be avoided by establishing appropriate buffers around active nest sites identified during focused surveys to prevent disturbance to the nest. Project activity (e.g., ground	Prior to construction.	Qualified biologist survey, reporting, and planning. CPUC to approve.

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disturbance, vegetation removal, staging, heavy equipment use, vehicle use, helicopter overflight) shall not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. Buffers typically shall be 0.25 miles for Swainson's hawk and white-tailed kite; 500 feet for tricolored blackbird, great blue heron, northern harrier, and California horned lark (consistent with the SJMSCP); 500 feet for other raptors; and 300 feet for bank swallow (consistent with the SJMSCP). Buffer size for other non-raptor bird species shall be determined by a qualified biologist. Factors to be considered for determining buffer size shall include presence of natural buffers provided by vegetation or topography, nest height above the ground, baseline levels of noise and human activity, species sensitivity, and proposed project activities. Generally, buffer size for these species shall be at least 100 feet for special-status bird species and at least 20 feet for common bird species. The size of the buffer may be adjusted if a qualified biologist determines that such an adjustment shall not be likely to adversely affect the nest. Any buffer reduction for a special-status bird species shall require coordination with CDFW. Periodic monitoring of the nest by a qualified biologist during project activities shall be required if the activity has potential to adversely affect the nest, the buffer has been reduced, or if birds within active nests are showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during project activities, as determined by the qualified biologist. ▶ PG&E and LEU shall each develop a nesting bird management plan for their individual project activities. PG&E shall submit the final plan to CPUC no less than 60 days prior to construction. CPUC approval is required before the plan is implemented. The nesting bird management plan shall include measures and an adaptive management program to avoid and minimize impacts on special-status and bird species protected by the MBTA or California Fish and Game Code during project construction. Specifically, the nesting bird management plans shall refer to the requirements listed above and shall contain the following information: ▪ Appropriate survey timing, extents, methods, and surveyor qualifications; approved nest deterrent methods, including areas where vegetation will be cleared for the purpose of deterring nesting; monitoring and reporting protocols during construction; protocols for determining whether a nest is active; and protocols for documenting, reporting, and protecting active nests within construction areas. If preconstruction survey protocols exist for a certain species, the plan shall outline the implementation of these protocols. ▪ Guidelines for determining appropriate and effective buffer distances that shall account for specific project settings, bird species, stage of nesting cycle, and construction work type. Language for the buffer reduction process shall be included in the plan and shall include substantial evidence for reducing the buffer including but not limited to relevant scientific literature, studies, and life history accounts. Buffer reduction shall include coordination with the appropriate wildlife agencies and CPUC if reducing the buffer of special-status species.		

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Mitigation Measure BIO-2c [PG&E and LEU]: Conduct Protocol-Level Surveys for Burrowing Owl and Implement Avoidance Measures The following mitigation measure shall supersede and replace APM BIO-2, APM BIO-3, BMP BIO-2, and BMP BIO-3 for burrowing owl: ▶ A qualified biologist approved by CPUC shall conduct surveys for burrowing owls in accessible areas of habitat suitable for the species on and within 1,640 feet of the work area. Inaccessible areas (e.g., adjacent private property) will not be surveyed directly, but the biologist may use binoculars or a spotting scope to survey these areas. A minimum of four surveys shall be conducted to determine whether burrowing owls occupy the site. Surveys shall be conducted according to Appendix D of the 2012 <i>Staff Report on Burrowing Owl Mitigation</i> prepared by the California Department of Fish and Game (now CDFW) (CDFG 2012) or any subsequent updated guidance. If feasible, at least one survey should be conducted between February 15 and April 15, and the remaining surveys should be conducted between April 15 and July 15, at least three weeks apart. Because burrowing owls may recolonize a site after only a few days, one of the surveys, or an additional survey, shall be conducted no more than 14 days before initiating ground disturbance activities to verify that take of burrowing owl would not occur. ▶ If no occupied burrows are found, the qualified biologist shall submit a report documenting the survey methods and results to PG&E or LEU and CPUC, and no further mitigation shall be required. ▶ If an active burrow is found within 1,640 feet of pending construction activities, PG&E or LEU shall establish and maintain a no-disturbance buffer around the occupied burrow and any identified satellite burrows (i.e., non-nesting burrows that burrowing owls use to escape predators or move young into after hatching) to prevent take of the burrowing owls, as described below. ■ During the nonbreeding season (September 1 through January 31), the minimum buffer distance shall be 164 feet (50 meters). During the breeding season (February 1 through August 31), the minimum buffer distance shall be increased to 1,640 feet (500 meters). If CDFW publishes subsequent guidance, including buffer sizes, in light of the designation of burrowing owl as a candidate for listing under CESA, these guidance and requirements shall take precedence over the buffers described in this mitigation measure. ■ The no-disturbance buffer may be adjusted to as small as 500 feet if the qualified biologist determines that an alternative buffer shall not result in take of burrowing owl adults, young, or eggs because of particular site features (e.g., topography, natural line-of-sight barriers), level of project disturbance, or other considerations, and a biological monitor is present during all project activities. The qualified biologist shall consult guidance in the 2012 <i>Staff Report on Burrowing Owl Mitigation</i> regarding recommended buffers for certain times of year, and levels of disturbance. If the buffer is reduced, the qualified biologist shall monitor	Prior to and during construction	Qualified biologist survey and reporting. CPUC mitigation monitor to implement in consultation with CDFW, if required.

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the behavior of the burrowing owls during all project activities within 1,640 feet of the burrow. If the owls are disturbed or agitated (e.g., vocalizations, bill snaps, fluffing feathers to increase body size appearance, drooping wings and rotating them forward, crouching and weaving back and forth) by the project activities, the biologist shall have the authority to halt the activities and reestablish a buffer consistent with the first item above until the agitated behavior ceases and normal behavior resumes. ▪ The buffer shall remain in place around the occupied burrow and associated satellite burrows until the qualified biologist has determined through noninvasive methods that the burrows are no longer occupied by burrowing owl. A previously occupied burrow will be considered unoccupied if surveys demonstrate that no owls have used the burrow for seven consecutive days. ▪ Locations of burrowing owls detected during surveys shall be reported to the CNDDB.		
Mitigation Measure BIO-2d [PG&E and LEU]: Implement Limited Operating Period, Conduct Focused Surveys, and Implement Avoidance Measures for Crotch's Bumble Bee The following mitigation measure shall supersede and replace APM BIO-3, APM BIO-4, BMP BIO-3, and BMP BIO-4 for Crotch's bumble bee: ▶ Initial ground-disturbing work (e.g., grading, vegetation removal, staging) in grassland habitat or edges of agricultural areas that contain grasses or forbs shall take place between August 15 and March 15, if feasible, to avoid impacts on nesting Crotch's bumble bees. ▶ If the above limited operating period is not feasible, a qualified biologist approved by CPUC, familiar with bumble bees of California, and experienced using survey methods for bumble bees, shall conduct a habitat assessment and focused survey for Crotch's bumble bee before the start of any ground-disturbing activities in grassland habitat or edges of agricultural areas that contain grasses or forbs. Surveys shall be performed when Crotch's bumble bee is most likely to be identified, typically from April through August (i.e., the colony active period) when floral resources and ideal weather conditions are present and shall follow the methods in Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW 2023). Surveys shall be conducted during the colony active period closest to the start of planned construction activities. ▶ PG&E or LEU shall submit a survey report to CDFW and CPUC within 1 month of survey completion and shall notify CDFW and CPUC within 24 hours if Crotch's bumble bees are detected. ▶ If Crotch's bumble bees are detected during the focused survey, appropriate avoidance measures shall be implemented. Avoidance measures shall include, but not be limited to, the following:	Prior to and during construction.	Qualified biologist survey and reporting. CPUC and CDFW to approve.

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▪ Protective buffers shall be implemented around active nesting colonies until these sites are no longer active. A qualified biologist, in coordination with CDFW, shall determine the appropriate buffer size to protect nesting colonies. ▪ If nesting colonies are detected, avoidance areas shall be implemented in areas near the colony location that contain significant floral resources for the colony, if present. A qualified biologist shall determine the appropriate avoidance area size to protect foraging resources. ▪ If project activities involving temporary disturbance (e.g., staging) would occur where a nesting colony was detected after the nesting colony is no longer active, the area shall be restored to original conditions after the temporary disturbance is complete such that habitat for Crotch's bumble bee would be available. ▶ If take of Crotch's bumble bee cannot be avoided, PG&E or LEU shall obtain an incidental take permit (ITP) from CDFW and shall implement all avoidance measures included in the ITP. CDFW may also require compensatory mitigation through on-site habitat restoration or purchase of credits at an appropriate mitigation bank. Avoidance measures included in the ITP would reduce the likelihood of take of Crotch's bumble bees such that impacts on the species would be fully mitigated. These measures could include: ▪ specifications for construction timing and sequencing requirements to avoid impacts on nesting Crotch's bumble bees; ▪ preconstruction surveys conducted within 30 days prior to the start of ground-disturbing activities; ▪ establishment of seasonal no-disturbance buffers around nest sites; ▪ construction monitoring; ▪ restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., BMPs to minimize the spread of invasive plant species); and ▪ Documentation of compliance with this mitigation measure and any required coordination with CDFW or acquisition of an ITP shall be provided to CPUC before commencement of any project construction activities.		
Mitigation Measure BIO-2e [PG&E]: Implement Avoidance Measures for Valley Elderberry Longhorn Beetles or Compensate for Unavoidable Impacts Associated with Construction Activities The following mitigation measure shall supersede and replace APM BIO-3 for valley elderberry longhorn beetle: ▶ Impacts on valley elderberry longhorn beetle shall be avoided and minimized by following the conservation measures outlined in the USFWS's 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Framework) for cases where the elderberry shrubs identified in the work area can be retained and protected within 165 feet of the project footprint.	Prior to and during construction.	PG&E to implement avoidance measures. CPUC to monitor compliance.

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▶ If elderberry shrubs are 165 feet or more from project construction activities, direct or indirect impacts are not expected. Shrubs shall be protected during construction by establishing and maintaining a high-visibility fence at least 20 feet from the drip line of each elderberry shrub. ▶ If PG&E determines that elderberry shrubs within the project footprint can be retained, project activities may occur up to 20 feet from the drip line of elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts. Specifically, these shall include the following minimization measures: ▪ All areas to be avoided during construction activities shall be fenced or flagged as close to construction limits as possible. ▪ A minimum avoidance area of at least 20 feet from the dripline of each elderberry plant shall be maintained to avoid direct impacts that could damage or kill the plant. ▪ A qualified biologist shall provide training for all contractors, work crews, and any on-site personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance. ▪ A qualified biologist shall monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the project specifics and will be discussed with a USFWS biologist. ▪ As much as feasible, all activities that could occur within 165 feet of an elderberry shrub shall be conducted outside of the flight season of the valley elderberry longhorn beetle (March through July). ▪ Trimming of elderberry shrubs, if required, shall occur between November and February and shall avoid removal of any branches or stems that are greater than or equal to 1 inch in diameter to avoid and minimize adverse effects to valley elderberry longhorn beetle. ▪ Project construction activities, such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs is adversely affected. Enforcement of a speed limit and watering dirt roadways are potential methods to minimize excessive dust creation. ▪ Herbicides shall not be used within the drip line of any elderberry shrub. Insecticides shall not be used within 98 feet of any elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method. Mechanical weed removal within the drip line of any elderberry shrub shall be limited to the season when adults are not active (August through February) and will avoid damaging the elderberry. ▪ Erosion control (e.g., straw wattle) shall be implemented, and the affected area shall be revegetated with appropriate native plants.		

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▶ If elderberry shrubs cannot be avoided, compliance with ESA and consultation with USFWS is required and may involve acquiring an incidental take permit through Section 10 or a take exemption through Section 7 (if the project were to establish a federal nexus). All elderberry shrubs with stems greater than 1 inch in diameter that cannot be avoided or have been adversely affected by indirect damage to stems of the entire shrub shall be transplanted. ▪ No elderberry shrub shall be removed or transplanted until authorization has been issued by USFWS and CPUC, and PG&E has abided by all pertinent conditions of the incidental take permit or biological opinion. ▪ Relocation of existing elderberry shrubs and planting of new elderberry seedlings and associated native riparian plant species shall be implemented according to the Framework (USFWS 2017b). Native associates shall include a mix of woody trees, shrubs, and other natives appropriate for the site, and would help establish historic native riparian conditions when planted with the elderberry shrubs and seedlings, once established. The Framework uses presence or absence of exit holes and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected valley elderberry longhorn beetle habitat. Compensatory mitigation may include purchasing credits at a USFWS-approved conservation bank, providing on-site mitigation, or establishing and protecting habitat for valley elderberry longhorn beetle.		
Mitigation Measure BIO-2f [PG&E]: Conduct Focused Bat Surveys and Implement Avoidance Measures The following mitigation measure shall supersede and replace APM BIO-3 for western red bat: ▶ Within 14 days before any tree removal, a qualified biologist familiar with bats and bat ecology, and experienced in conducting bat surveys, and approved by CPUC, shall conduct surveys for bat roosts in suitable habitat (e.g., large trees, crevices, cavities, exfoliating bark, foliage) on and directly adjacent to the work area. ▶ If no evidence of bat roosts is found, the qualified biologist shall submit a report summarizing the results of the survey to PG&E and CPUC and no further study shall be required. ▶ If evidence of active bat maternity roosts or hibernacula is observed, the species and number of bats using the roost shall be determined by a qualified biologist using noninvasive methods. Bat detectors (i.e., acoustic monitoring) or evening emergence surveys shall be used if deemed necessary to supplement survey efforts by the qualified biologist. ▶ A no-disturbance buffer of 250 feet shall be established around active western red bat maternity roosts or hibernacula, as well as substantial maternity roosts or hibernacula of other bat species considered to be a wildlife nursery by the qualified biologist, and project activities shall not occur within this buffer until after the roosts are unoccupied as determined by a qualified biologist.	Prior to and during construction.	Qualified biologist survey and reporting. CPUC to approve.

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▶ If potential nursery or hibernation habitat (i.e., not currently active) is found that must be removed to meet project objectives, these areas shall be removed or sealed prior to nursery season (May through August) and hibernation season (November through March) to prevent future occupation, and using the following methods. ○ If any tree(s) potentially suitable for western red bat roosting requires trimming or removal, it shall first be confirmed that avoidance is not possible. If avoidance is not possible, the tree(s) shall undergo a bat habitat assessment and two-phase trimming or removal process. If trees suitable for western red bat roosting require trimming or removal, then such activities will be conducted outside of the bat maternity (May through August) and wintering (November through March) seasons under the supervision of a qualified biologist, who will inspect all trees prior to their trimming or removal. If trees must be removed during the maternity or wintering seasons, a qualified biologist will first inspect the trees to be removed. ▪ A two-day process will then be followed: • Removal of an Entire Tree: ○ Day 1: Branches and limbs will be removed by hand (such as using chainsaws) from potential roosting trees. This will create a disturbance (such as noise and vibration) and physically alter the tree. Bats already roosting in the tree likely will either abandon the roost immediately (rarely) or after evening emergence and avoid returning to the roost. If any other nearby shrubs or trees are already planned for removal, Day 1 also could include removing those adjacent, smaller, or non-habitat trees to create noise and vibration disturbance that would cause abandonment, thereby avoiding harm and mortality risks to bats on Day 2. ○ Day 2: Under the supervision of a qualified biologist, the rest of the tree may be removed. • Trees that are only to be trimmed and not entirely removed: ○ Day 1: If a branch with a potential roost must be removed, then under supervision of a qualified bat biologist, all surrounding branches would be trimmed leaving the branch with the potential roost intact. ○ Day 2: The limb with the potential roost would be removed. ○ All downed roost trees will be searched for dead or injured bats. If dead or injured western red bats are found, then the biologist will report their findings to CDFW. ▶ If active western red bat roosts are determined to be present and must be removed, the bats shall be excluded from the roosting site before the tree is removed. A program addressing compensation, exclusion methods, and		

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roost removal procedures shall be developed in coordination with CDFW and approved by CPUC before implementation. Exclusion efforts shall be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) resulting from the project shall be replaced in coordination with CDFW and may require preservation of roost habitat. If determined necessary during coordination with CDFW, replacement roost habitat shall be implemented before bats are excluded from the original roost sites. After the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site by a qualified biologist, the roost tree may be removed. PG&E shall monitor any replacement roosts to determine whether the roosts are being used by western red bats. If the replacement roosts are not being used by the species within 1 year of construction, PG&E shall consult with CDFW to determine if additional replacement roosts are required, whether different types of artificial roosts should be constructed, or whether additional mitigation is required (e.g., planting replacement trees).		
Mitigation Measure BIO-2g [PG&E]: Conduct Focused American Badger Surveys and Establish Protective Buffers The following mitigation measure shall supersede and replace APM BIO-3 for American badger: ▶ Within 14 days before commencement of project construction activities, a qualified wildlife biologist approved by CPUC familiar with American badger and experienced using survey methods for the species shall conduct focused surveys of habitat suitable for the species in the work area to identify any American badger dens. ▶ If occupied dens are not found, the qualified biologist shall submit a report summarizing the results of the survey to PG&E and CPUC, and further mitigation shall not be required. ▶ If occupied dens are found, then dens shall be monitored to determine if occupation is by an adult badger only or if it is a natal den. Impacts on active badger dens shall be avoided by establishing exclusion zones around all active badger dens. If the qualified biologist determined that the den is a natal den, an exclusion zone of 200 feet shall be maintained around the den until the qualified biologist determines that den has been vacated. If the den is occupied by an adult badger only, the size of the buffer shall be determined by a qualified biologist. Buffer size may be reduced if a qualified biologist determines that the reduced buffer would avoid disturbance to the den. Factors to be considered for determining buffer size shall include presence of natural buffers provided by vegetation or topography, baseline levels of noise and human activity, and proposed project activities. No project construction activities (e.g., vegetation removal, ground disturbance, staging) shall occur within the exclusion zone until denning activities are complete or the den is abandoned, as confirmed by a qualified biologist. The qualified biologist shall monitor each den once per week to track the status of the den and to determine when it is no longer occupied. When it is no longer occupied, project construction activities within the exclusion zone may occur. Monitoring reports shall be submitted to CDFW and CPUC.	Prior to and during construction.	Qualified biologist survey and reporting to CPUC.

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Mitigation Measure BIO-3 [PG&E]: Implement Avoidance Measures for State and Federally Protected Wetlands The following mitigation measure shall supersede and replace APM BIO-3 and APM BIO-4 for state and federally protected wetlands: For any state or federally protected wetlands within a 25-foot buffer of PG&E project construction and O&M activities that would result in ground disturbance, a qualified biologist would establish a buffer around the wetlands and mark the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). Where PG&E does not have land rights, or physically demarcating wetlands would result in obstruction of a public road or would draw unnecessary attention to sensitive habitats, at the discretion of the qualified biologist, the boundaries of the wetlands and protective buffers would be incorporated into a single map identifying the wetland boundaries and buffers distributed to relevant project personnel, and the qualified biologist will review the map with the project personnel during their environmental training. The buffer would be a minimum width of 25 feet but may be adjusted if deemed necessary by the qualified biologist. The appropriate size and shape of the buffer would be determined by the qualified biologist and would depend on the type of wetland present (e.g., stream, fresh emergent wetland), the timing of project construction or O&M activities that would result in ground disturbance (e.g., wet or dry time of year), environmental conditions and terrain, and the project activity being implemented. All PG&E project construction and O&M activities that would result in ground disturbance (e.g., road widening, vegetation removal) would be prohibited within the established buffer. A qualified biologist would periodically inspect the materials demarcating the buffer to confirm that they are intact and visible and that wetland impacts are being avoided.	Prior to and during construction and throughout operations and maintenance.	PG&E to implement avoidance measures. CPUC to monitor compliance.
Mitigation Measure BIO-7: [PG&E and LEU] Develop and Implement an Avian Protection Plan The following mitigation measure shall supersede and replace APM BIO-9, APM BIO-10, BMP BIO-9, and BMP BIO-10. - PG&E shall implement their avian protection plan, PG&E's Program to Address Avian Electrocutions, Collisions, and Nesting Birds (PG&E 2018), including all risk-reduction measures and training and reporting requirements therein. CPUC approval is necessary prior to plan implementation for PG&E's portion of the project. - LEU must follow the recommendations outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012 or the most current version). In addition, LEU shall develop and implement an avian protection plan according to Avian Protection Plan Guidelines (APLIC and USFWS 2005). The plan shall include measures to minimize collision and execution risk to avian species during project operation. The plan shall be submitted for review to CDFW and USFWS at least 60 days before construction begins.	During final project design/prior to construction.	CPUC approval of PG&E plan. CPUC mitigation monitor to inspect and verify compliance through quarterly reports.

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Geology, Soils, and Mineral Resources		
APM GEO-1: Appropriate PG&E Design Measures Implementation. Based in the graded and excavated areas as project construction proceeds. Potentially problematic subsurface conditions may include soft or loose soils. Where soft or loose soils are encountered during design studies or construction on PG&E facilities, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils encountered during construction. Such measures may include the following: ▶ Locating construction facilities and operation away from areas of soft and loose soil. ▶ Overexcavating soft or loose soils and replacing them with non-expansive engineered fill. ▶ 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. 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.	During construction.	PG&E to implement.
APM PAL-1: Retain a PG&E Qualified Paleontological Principal Investigator. A PG&E Paleontological Principal Investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all APMs related to paleontological resources are properly implemented. The Paleontological Principal Investigator will have a master's degree or Ph.D. in geology or paleontology, have knowledge of the local paleontology, and be familiar with paleontological procedures and techniques.	Prior to construction.	PG&E to implement.
APM PAL-2: PG&E Workers Environmental Awareness Training. Training on paleontological resources protection will be administered for excavation deeper than 3 feet below ground surface (bgs) at all PG&E work locations. It may be provided by the PG&E project Paleontologist or Archaeologist 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 A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to CPUC.	Prior to and during construction.	PG&E to provide CPUC with a copy of the training materials and training sign-in sheets.

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APM PAL-3: Paleontological Resource Monitoring for Select PG&E Construction Activities. A paleontological monitor will be present to monitor for paleontological resources in areas where Riverbank formation or Turlock Lake formation occurs at the surface and excavation is greater than 3 feet deep and, for excavations involving drilling or augering, uses a drill diameter that is larger than 3 feet. The paleontological monitor will be able to: (1) recognize fossils and paleontological deposits, and deposits that may be paleontologically sensitive; (2) take accurate and detailed field notes, photographs, and locality coordinates; and (3) document project-related ground-disturbing activities, their locations, and other relevant information, including a photographic record.	During construction.	PG&E to monitor and document.
APM PAL-4: PG&E Unanticipated Paleontological Discovery. If significant paleontological resources are discovered during PG&E's construction activities, the following procedures will be followed: ▶ Stop work immediately within 100 feet of the fossil find. ▶ Contact the designated project inspector and PG&E Cultural Resources Specialist (CRS) immediately. ▶ Protect the site from further impacts, including looting, erosion, or other human or natural damage. ▶ Arrange for a PG&E Paleontological Principal Investigator to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approved by the paleontologist and PG&E CRS. ▶ Curate all fossils discovered in an appropriate repository. ▶ A qualified paleontologist will be notified to review the need for paleontological monitoring during subsequent ground-disturbing activities with the potential to affect paleontologically sensitive sediments at that location. The qualified paleontologist will be responsible for the reassessment of paleontological sensitivity upon the receipt of additional information from ongoing excavations, which may result in reducing, or increasing, the amount of monitoring required.	During construction.	PG&E to monitor and document.
Greenhouse Gas Emissions		
APM GHG-1: PG&E Minimize GHG Emissions. PG&E will implement the following to minimize GHG emissions: ▶ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine	During construction.	PG&E to implement.

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will be shut off. Construction supervisors will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. ▶ Maintain construction equipment in proper working conditions in accordance with manufacture specifications. ▶ Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later will be registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program. ▶ Minimize welding and cutting by using compression or mechanical applications where practical and within standards. ▶ Encourage use of natural gas-powered vehicles for passenger cars and light-duty trucks where feasible and available. ▶ On road and off-road vehicle tire pressures will be maintained to manufacturer specifications. Tires will be checked and re-inflated at regular intervals. ▶ Use line power instead of diesel generators at construction sites where line power is available. ▶ If suitable park-and-ride facilities are available in the project vicinity, construction workers will be encouraged to carpool to the job site. ▶ Encourage the recycling of construction waste where feasible.		
APM GHG-2: PG&E Minimize SF₆ Emissions. PG&E will implement the following to minimize SF₆ emissions: ▶ PG&E will employ standard best practices during PG&E operations. ▶ Comply with the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear, sections 95350 to 95359, title 17, CCR. Maintain substation breakers in accordance with PG&E's maintenance standards.	Throughout operations and maintenance.	PG&E to implement.
Hazards and Hazardous Materials		
APM HAZ-1: PG&E 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 and, as appropriate, during the O&M phase. 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 SWPPP (APM HYD-1). If required, a	During construction and throughout operations and maintenance.	PG&E to implement.

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site-specific SPCC Plan and a Hazardous Materials Business Plan (HMBP) will be developed before the operation of the expanded PG&E Lockeford Substation and new PG&E Thurman Switching Station (APM HYD-4).		
APM HAZ-2: PG&E Emergency Spill Supplies and Equipment. Materials will be available on the project site during construction to contain, collect, and dispose of any minor spill at PG&E's project components. Oil-absorbent material, tarps, and storage drums will be available on the project site during construction and will be used to contain and control any minor releases of oil. If excess water and liquid concrete escape during pouring, they will be directed to adjacent lined and bermed areas, where the concrete will dry and then be transported for disposal per applicable regulations.	During construction.	PG&E to implement.
APM HAZ-3: PG&E Shock Hazard Safety Measures. All authorized personnel working on site, during either construction or O&M, will be trained according to PG&E standards. To minimize potential exposure of the public to electric shock hazards, a 9-foot-tall chain-link fence topped with 1 foot of barbed wire (total height of approximately 10 feet) will be installed around the perimeter of the expanded PG&E Lockeford Substation and the new PG&E Thurman Switching Station before the new electric equipment is energized.	During construction and operations and maintenance.	PG&E to implement.
APM HAZ-4: PG&E Worker Environmental Awareness Training Program. A PG&E worker environmental awareness training program (WEAP) will be developed and implemented prior to construction. The WEAP training will be administered to communicate environmental concerns and appropriate work practices to all construction field personnel before they begin work on the project. 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 practices implementation. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to CPUC.	Prior to and during construction.	PG&E to provide CPUC with a copy of the training materials and training sign-in sheets.
APM HAZ-5: PG&E Potentially Contaminated Soil or Groundwater. Soil or groundwater occurring at PG&E project components that is suspected of being contaminated (based on existing analytical data or visual, olfactory, or other evidence) and is removed during excavation activities will be segregated and tested if pre-characterization has not occurred. If the soil or groundwater is contaminated above hazardous levels, it will be contained and disposed of offsite at a licensed waste facility. The presence of known or suspected contaminated soil or groundwater will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.	During construction.	PG&E to implement.
Hydrology and Water Quality		
APM HYD-1: Prepare and Implement a SWPPP for PG&E Project Components. Stormwater discharges associated with project construction activities are regulated under the Construction General Permit (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	Prior to and during construction.	PG&E to implement. CPUC to monitor compliance.

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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 PG&E project components. Following project approval, PG&E will prepare and implement a 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) at PG&E project components. Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will propose best practices that will be implemented during construction activities. Erosion and sediment control measures – such as straw wattles, erosion control blankets, and silt fences – will be installed in compliance with the SWPPP. Suitable soil stabilization measures will be used to protect exposed areas during construction activities, as specified in the SWPPP. During construction activities, measures will be implemented to reduce exposure of construction materials and wastes to stormwater. Measures will be installed following manufacturer's specifications and according to standard industry practice. Erosion and sediment control measures may include the following: ▶ Straw wattle, silt fence, or gravel bag berms ▶ Trackout control at all entrances and exits ▶ Stockpile management ▶ Effective dust control measures ▶ Good housekeeping measures ▶ Stabilization measures, which may include wood mulch, gravel, and/or seeding. Identified erosion and sediment control measures will be installed prior to the start of construction activities and will be inspected and improved as required by the CGP 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 will be managed using industry-standard stockpile management techniques. Where construction activities occur near a surface waterbody or drainage channel, the staging of construction materials and equipment and excavation spoil stockpiles will be placed and managed in a manner to minimize the risk of sediment transport to the drainage. Any surplus soil will be transported from the site and disposed of in accordance with federal, state, and local regulations.		

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The SWPPP will identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials will be permitted, if necessary. A copy of the SWPPP will be provided to CPUC for recordkeeping. The plan will be maintained and updated during construction as required by the CGP.		
APM HYD-2: PG&E Worker Environmental Awareness Program. The PG&E worker environmental awareness program will communicate environmental issues and appropriate work practices specific to PG&E project components to all field personnel before they begin work on the project. These will include spill prevention and response measures from the PG&E SWPPP and proper implementation of best practices. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to CPUC.	Prior to and during construction.	PG&E to provide CPUC with a copy of the training materials and training sign-in sheets.
APM HYD-3: 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 for its portion of the project. Within the City of Lodi, PG&E will repair or replace damaged or removed stormwater infrastructure in kind in or in conformance with current City design standards, whichever is deemed most appropriate by City staff through the encroachment permit process. Completion of the required restoration of the stormwater infrastructure will be verified by the City of Lodi.	Following completion of construction.	PG&E to implement. City of Lodi to verify completion.
APM HYD-4: SPCC Plan for PG&E Thurman Switching Station and SPCC Plan Modification for PG&E Lockeford Substation. PG&E will prepare an SPCC plan for PG&E Thurman Switching Station for implementation during operation, and the existing PG&E Lockeford Substation SPCC Plan will be modified prior to operation of the expanded facility, as required by applicable regulations (40 CFR 112). An SPCC plan includes engineered and operational methods for preventing, containing, and controlling potential releases (for example, construction of a retention pond, moats, or berms) as well as provisions for quick and safe cleanup.	Operations and maintenance.	PG&E to implement.
APM HYD-5: Project Stormwater Plan for PG&E Thurman Switching Station. PG&E will prepare a Project Stormwater Plan for PG&E's Thurman Switching Station to submit to the City of Lodi as part of its building permit and to align with the City of Lodi's Stormwater Management and Discharge Control Code, Lodi Municipal Code Chapter 13.14. The plan will include proposed site design and control measures and postconstruction stormwater runoff calculations showing pre-project and post-project volumes.	Prior to construction.	PG&E to implement. City of Lodi to verify completion.
Noise		
APM NOI-1: PG&E General Construction Noise Management. PG&E will employ standard noise-reducing construction practices such as the following: ▶ Comply with manufacturer's muffler requirements on all construction equipment engines and ensure exhaust mufflers are in good condition. ▶ Turn off construction equipment when not in use, where applicable.	During construction.	PG&E to implement.

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▶ Locate stationary equipment, construction staging areas, helicopter landing zones, and construction material areas as far as practical from sensitive receptors. ▶ Include noise control requirements for construction equipment and tools in specifications provided to construction contractors to the maximum extent practicable, including performing all work in a manner that minimizes noise. PG&E will provide written notice at least 1 week prior to planned construction activities to all sensitive receptors and residences within approximately 500 feet of construction sites, staging yards, and access roads, and within approximately 1,000 feet of helicopter landing zones. PG&E also will post notices in public areas, including recreational use areas, within approximately 500 feet of the project alignment and construction work areas. The announcement will state approximately where and when construction will occur in the area, including areas of helicopter construction. Notices will provide tips on reducing noise intrusion – for example, by closing windows facing the planned construction. PG&E will identify a public liaison to respond to concerns of neighboring receptors during construction, including residents, about construction noise disturbance. PG&E also will establish a toll-free telephone number for receiving questions or concerns during construction and develop procedures for responding to callers. Contact information for reaching the PG&E public liaison officer by telephone or in person will be included in the notices and also posted conspicuously at the construction sites. PG&E will respond to questions or concerns received.		
APM NOI-2: PG&E Noise Minimization with Portable Barriers Compressors and other small stationary equipment used during construction of PG&E project components will be shielded with portable barriers if appropriate and if located within approximately 200 feet of a residence or if determined by PG&E to be appropriate.	During construction.	PG&E to implement. CPUC to monitor compliance.
APM NOI-3: PG&E Noise Minimization with Quiet Equipment. Quiet equipment will be used during construction of PG&E project components whenever possible (for example, equipment that incorporates noise-control elements into the design, such as quiet model compressors or generators, can be specified).	During construction.	PG&E to implement.
APM NOI-4: PG&E Noise Minimization through Direction of Exhaust. When in proximity to noise-sensitive uses, PG&E equipment exhaust stacks and vents will be directed away from those noise-sensitive uses where feasible.	Operations and maintenance.	PG&E to implement.
APM NOI-5: PG&E Noise Disruption Minimization through Residential Notification. In the event that nighttime construction is necessary for PG&E project components– for instance, if certain activities such as line splicing or horizontal directional drilling in certain soil conditions need to continue to completion – affected residents will be notified in advance by mail, personal visit, or door-hanger, and will be informed of the expected work schedule.	During construction.	PG&E to implement.

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APM NOI-6: PG&E Horizontal Directional Drilling Noise Minimization Measures. Temporary barriers utilizing materials such as intermodal containers or frac tanks, plywood walls, mass-loaded vinyl (vinyl impregnated with metal), sound-absorbing blankets, hay bales, or similar materials will be used to reduce noise generated by the auger bore operations. HDD activities will be limited to daylight hours unless a situation arises where ceasing the activity would compromise safety (both human health and environmental) and the integrity of the project. If nighttime HDD activities are required, the project will monitor actual noise levels from the HDD activities between 10:00 p.m. and 7:00 a.m. If the nighttime noise levels created by the HDD operation result in outreach to PG&E public liaison officer and are in excess of the ambient noise level by approximately 5 dBA at the nearest residential property plane, PG&E will, within 24 hours of the excess measurement, employ additional minimization measures to the greatest extent practicable. Such measures may include ensuring that semipermanent stationary equipment (for example, generators) is stationed as far from sensitive areas as practicable, using sound-attenuated "quiet" or "Hollywood/Movie Studio" silencing packages, or modifying barriers to further reduce noise levels.	During construction.	PG&E to implement. CPUC to monitor compliance.
APM NOI-7: PG&E Noise Minimization Equipment Specification. PG&E will specify general construction noise reduction measures that require the contractor to ensure that all equipment is in good working order, adequately muffled, and maintained in accordance with the manufacturers' recommendations.	During construction.	PG&E to include in final design and construction documents.
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 permits 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 diversions as required by the encroachment permits. Construction activities that are in, along, or cross local roadways will follow best 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 in the project area. PG&E will provide the CPUC with copies of permits obtained prior to construction activity in a given jurisdiction or location. If required for obtaining a local encroachment permit, PG&E will establish a Traffic Management Plan (TMP) to address haul routes, timing of heavy equipment and building material deliveries, 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, 2018 edition, and the California Manual on Uniform Traffic Control Devices, 2014 edition.	During construction.	CPUC to verify permits are obtained.

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APM TRA-2: PG&E Repair of Damaged Transportation Infrastructure. As part of the final construction activities of the project, PG&E will restore all removed curbs, gutters, and sidewalks, and repave all removed or damaged paved surfaces associated with PG&E construction activities.	Following completion of construction.	PG&E to implement.
Wildfire		
APM WFR-1: PG&E 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 provided to the CPUC and the local fire agencies with jurisdiction over the areas where the project is located at least 90 days prior to the initiation of construction activities in areas designated as very high or high FHSZs. Plan reviewers also will include federal, state, or local agencies with jurisdiction over areas where the project is located. 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 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 ▪ 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 ▪ A project Fire Marshal or similar qualified person 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.	Prior to and during construction.	PG&E to prepare plan and provide to CPUC.

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APM WFR-2: PG&E Fire 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 and will follow the standard in regard to training, preparation, communication methods and means, observations of and alerts concerning weather conditions including National Weather Service (NWS) events, and PG&E's work restrictions and fire mitigation required for elevated PG&E Utility fire potential index (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. ▶ All construction personnel will carry a laminated card and be provided a hard hat sticker that list pertinent telephone numbers for reporting fires and define immediate steps to take if a fire starts. Information on laminated contact cards and hard hat stickers will be updated as needed and redistributed to all construction personnel prior to the day the information change goes into effect. ▶ PG&E will coordinate with the applicable local fire departments prior to construction activities to determine the appropriate amounts of fire equipment to be carried on vehicles and, should a fire occur, to coordinate fire suppression activities as part of the PG&E Construction Fire Prevention Plan review. ▶ Construction personnel will have fire suppression equipment on all construction vehicles 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. Communication pathways and equipment will be tested and confirmed operational each day prior to initiating construction activities at each work site. All fires will be reported to the fire agencies with jurisdiction in the area immediately 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.	During construction and operations and maintenance.	PG&E to implement.

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▶ PG&E General Requirements for wildfire mitigation (R1 to R3) apply for PG&E work areas located farther than 5 miles from a fire index area (FIA) when the nearest 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 will apply. ▶ At PG&E's Clayton Hill Repeater Station, which is 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 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, mitigation beyond R1 to R4 levels includes a dedicated fire watch at the jobsite, 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.		

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
Aesthetics		
BMP AES-1: Aesthetics Impact Reduction During LEU Construction. All LEU project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from the public view where possible. Where this is unavoidable, construction sites, staging areas, and fly yards will be visually screened using temporary screening fencing. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of project construction, project staging and temporary work areas will be returned to pre-project conditions, including regrading of the site and revegetation or repaving of disturbed areas to match pre-existing contours and conditions.	During construction and following completion of construction.	LEU mitigation monitor to inspect and verify compliance.
Air Quality		
BMP AIR-1: LEU Dust Control During Construction LEU will implement measures to control fugitive dust in compliance with SJVAPCD standards. Dust control measures will include the following at a minimum: ▶ All exposed surfaces with the potential of dust-generating will be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site. ▶ The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time will be limited. Activities will be phased to reduce the amount of disturbed surfaces at any one time. ▶ Cover all haul trucks entering/leaving the site and trim their loads as necessary. ▶ Use wet power vacuum street sweepers to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. The use of dry power sweeping is prohibited. ▶ All trucks and equipment, including their tires, will be washed off prior to leaving project sites. ▶ Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at project sites. ▶ Water and/or cover soil stockpiles daily. ▶ Vegetative ground cover will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. ▶ All vehicle speeds will be limited to 15 mph or less on unpaved areas. ▶ Implement dust monitoring in compliance with the standards of the local air district. Halt construction during any periods when wind speeds are in excess of 50 mph.	During construction.	LEU mitigation monitor to inspect and verify compliance.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
Archaeological, Historic, and Tribal Cultural Resources		
BMP CUL-1: Develop and Implement Worker Environmental Awareness Program Prior to Construction. LEU 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 stand-alone 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 in the project vicinity. ▶ A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation. ▶ 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 LEU policies. ▶ A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, LEU policies, and other applicable laws and regulations. ▶ A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the City of Lodi.	Prior to and during construction.	LEU to provide City of Lodi with a copy of the training materials and training sign-in sheets.
BMP CUL-4: Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during LEU construction, work within 100 feet of the find will stop immediately and the construction supervisor will contact the LEU cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology. Upon discovery, the Coroner Division of the San Joaquin County Sheriff's Office will be contacted for identification of human remains. The Coroner has 2 working days to examine the remains after being notified. If the remains are Native American, the Coroner must notify the NAHC of the discovery within 24 hours. The NAHC then will identify and contact an MLD. The MLD may make recommendations to the landowner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. When proper consultation has	During construction.	LEU to document compliance and report to City of Lodi.

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occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented. If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any human remains or associated funerary objects will be determined in consultation between the landowner and the MLD.		
Mitigation Measure 3.5-2a [PG&E and LEU]: Inadvertent Archaeological Resource Discoveries The following mitigation measure shall supersede and replace APM CUL-3 and BMP CUL-3 for inadvertent discoveries: ▶ If any precontact or historic-era subsurface archaeological features or deposits (e.g., ceramic shard, trash scatters), including locally darkened soil ("midden"), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted, and a qualified professional archaeologist (one who meets the Secretary of the Interior's Professional Qualification Standards for archaeology) shall be retained to assess the significance of the find. ▶ The construction crew would protect the discovery from further disturbance until it has been assessed by a qualified archaeologist. ▶ The construction supervisor would immediately contact the project construction inspector and City of Lodi or CPUC (as appropriate). ▶ City of Lodi or CPUC would coordinate with the state lead officials to determine appropriate procedures to reduce effects on the resource. ▶ If the discovery can be preserved in place (which shall be the preferred manner of mitigating impacts on archaeological and tribal sites) and no further impacts would occur, then the resource would be documented on DPR 523 forms, and no further effort would be required. ▶ If the resource cannot be avoided and may be subjected to further impacts, qualified archaeologist in coordination with City of Lodi or CPUC (as appropriate) would evaluate the significance of the discovery in accordance with the state laws outlined previously; personnel would implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist would complete an evaluation	During construction.	Qualified professional archaeologist report to City of Lodi.

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of historic-period resources, while evaluation of precontact resources would be completed by a qualified archaeologist specializing in California prehistoric archaeology. ▶ If it is determined that by the qualified archaeologist in coordination with City of Lodi or CPUC (as appropriate) that the discovery has the potential to be a tribal cultural resource, then Mitigation Measure 3.5-3 shall be followed. ▶ Ground disturbance within the discovery shall resume only when City of Lodi or CPUC (as appropriate) have determined that all necessary investigation and evaluation of the resource has been completed.		
Mitigation Measure 3.5-3: Inadvertent Discoveries of Tribal Cultural Resources The following mitigation measure would be employed (after stopping work and following the procedure for determining eligibility in Mitigation Measure 3.5-2a), and shall supersede and replace APM TCR-1 and BMP TCR-1 for inadvertent discoveries: ▶ As noted on Mitigation Measure 3.5-2a, construction work shall stop within 100 feet of a resource inadvertently discovered that could potentially be a tribal cultural resource. ▶ The LEU or CPUC (as appropriate) would identify and contact the lead contact person for the California Native American Tribe(s) potentially associated with the cultural resource and with a traditional and cultural affiliation with the geographic area of the proposed project. The CPUC would communicate with the lead contact person to set up a meeting with LEU (if within LEU jurisdiction) or the CPUC. ▶ LEU or CPUC would participate in discussions with the California Native American Tribe(s) to determine whether the resource is a "tribal cultural resource" as defined by PRC Section 21074 and the tribe(s)' preferred method of mitigation, if the resource is determined to be a TCR. ▶ Procedures may include preservation in place (which shall be the preferred manner of mitigating impacts on tribal sites). ▶ If the tribal cultural resource cannot be avoided and may be subjected to further impacts, the California Native American Tribe(s) in coordination with LEU (if applicable) or CPUC would evaluate the significance of the discovery in accordance with the state laws outlined previously and shall develop the appropriate method of treatment. ▶ Ground disturbance within the area of discovery shall resume only when LEU or CPUC (as appropriate), in coordination with the California Native American Tribe(s), have deemed appropriate to do so for tribal cultural resources.	During construction.	LEU to notify City of Lodi of any discovery. City of Lodi to coordinate with tribe.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
Biological Resources		
BMP BIO-1: Develop and Implement an LEU Worker Environmental Awareness Program. A biologist for the LEU portion of the project who is familiar with resources in the area and with delivering Worker Environmental Awareness Programs will conduct an environmental awareness program for all onsite construction personnel before they begin work on the project. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of project permits. Training will include information about the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed of the presence, life history, and habitat requirements of all special-status species that may be affected by the LEU portion of the project, and about state and federal laws protecting nesting birds, wetlands, and other water resources. An educational brochure will be produced for construction crews working on the project. Color photos of special-status species will be included, as well as a discussion of relevant best practices and specific avoidance or minimization measures for special-status species and habitats. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the City of Lodi.	Prior to and during construction.	LEU to provide City of Lodi with a copy of the training materials and training sign-in sheets.
BMP BIO-2: Avoid and Protect Nesting Birds from LEU Impact. If construction is to occur during the avian nesting season (March 1 through August 15), a preconstruction migratory bird and raptor nesting survey will be performed by a biologist for the LEU portion of the project who is familiar with local avian species and nesting birds. Surveys will occur only in publicly accessible areas and areas where LEU has existing access; private property will not be accessed and will instead be observed from adjacent accessible areas. The preconstruction survey will cover a radius of 200 feet for non-listed raptors and 100 feet for non-listed passerines from project locations that will be actively worked at in the near term. Surveys for Swainson's hawk will cover a 0.25-mile radius from the LEU project footprint. The survey will cover all affected areas where ground disturbance or vegetation clearing is required in the near term. Subsequent surveys will be conducted in advance of other project locations becoming active. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the biologist. No heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active and the young have fledged. If it is not practicable to avoid work in an exclusion zone around an active nest, work activities will be modified to minimize disturbance of nesting birds but may proceed in these zones at the discretion of the biologist. As appropriate, the biologist will monitor work activities in these zones daily or periodically when construction is occurring and assess their effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work may need to be halted or redirected to other	Prior to and during construction.	LEU to communicate survey results to City of Lodi. City of Lodi mitigation monitor to inspect and verify compliance.

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areas until the nesting and fledging is completed or the nest has otherwise failed for reasons not related to construction.		
BMP BIO-3: Identify and Mark Sensitive Biological Resource Areas near LEU Portion of the Project. Sensitive biological resources (for example, nesting birds) in or adjacent to LEU construction work areas identified during the preconstruction surveys will be clearly marked in the field and on project maps as appropriate. Such areas will be avoided during construction to the greatest extent feasible.	Prior to and during construction.	LEU to include in final design documents. City of Lodi mitigation monitor to inspect and verify compliance.
BMP BIO-4: Install Exclusion Fencing near LEU Portion of the Project. At the discretion of the LEU biologist, prior to any ground disturbing work in proximity to suitable habitat for special-status species, exclusion fence will be installed around LEU workspaces as appropriate. Exclusion fencing will be routinely inspected during project activities and any damage, such as holes or gaps, will be promptly repaired.	Prior to and during construction.	Directed and monitored by LEU biologist.
BMP BIO-5: Allow Biological Monitor Onsite during LEU Construction Activities in Sensitive Biological Resource Areas. At the discretion of the biologist for the LEU portion of project, a qualified biologist will be onsite during construction activities in sensitive biological resource areas identified in BMP BIO-4 unless the area has been protected by barrier fencing to protect sensitive biological resources and previously cleared by the qualified biologist and the biologist for the LEU portion of project. The qualified biologist will ensure implementation and compliance with all avoidance and mitigation measures and have the authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.	Prior to and during construction.	Directed and monitored by LEU biologist.
BMP BIO-8: Implement General Resource Protection Measures for LEU Portion of the Project. This BMP consists of the following components: ▶ Hazardous materials spills. Emergency spill response and cleanup kits will be readily available for immediate containment and cleanup of an accidental spill. Construction crews will be trained in safe handling of hazardous materials and cleanup responsibilities. Any inadvertent spills into aquatic habitat will be reported to the applicable resource agencies within 24 hours. ▶ Reporting and communication. The LEU biologist will be responsible for immediately reporting any capture and relocation, or inadvertent harm, entrapment, or death, of a federally or state-listed species under ESA or CESA to the applicable resource agencies. ▶ Erosion control materials. Only tightly woven netting or similar material will be used for all geosynthetic erosion control materials such as coir rolls and geotextiles. No plastic monofilament matting will be used. ▶ Minimizing grading and vegetation removal along access roads and construction work areas. LEU will only trim, clear, or remove vegetation as necessary to establish the access routes and allow equipment use. Trees will be	During and following completion of construction.	Directed and monitored by LEU biologist. City of Lodi mitigation monitor to inspect and verify compliance.

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directionally felled away from sensitive biological resource areas and, if that is not possible, they will be removed in sections. Damage to adjacent trees will be avoided to the greatest extent possible. ▶ Weed management. Vehicles and construction equipment will be cleaned of mud and dirt as needed to minimize transport of weed plant parts or seed. Vehicles also will be cleaned at the completion of the project or when off-road use for that vehicle has been completed.		
Mitigation Measure BIO-2b [PG&E and LEU]: Conduct Focused Surveys for Special-Status Birds, Nesting Raptors, and Other Native Nesting Birds and Implement Protective Buffers The following mitigation measure shall supersede and replace APM BIO-2, APM BIO-3, BMP BIO-2, and BMP BIO-3 for special-status birds: ▶ To minimize the potential for loss of special-status bird species, raptors, and other native birds, PG&E and LEU project construction and LEU O&M activities (e.g., tree removal, vegetation clearing, ground disturbance, staging) shall be conducted during the nonbreeding season (approximately September 1 through January 31, as determined by a qualified biologist), if feasible. If project activities are conducted during the nonbreeding season, no further mitigation shall be required. ▶ Within 14 days before the onset of all project construction or O&M activities during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), a qualified biologist approved by CPUC, familiar with birds of California and with experience conducting nesting bird surveys shall conduct focused surveys for special-status birds, other nesting raptors, and other native birds. Surveys shall be conducted in accessible areas (i.e., publicly accessible areas and areas where PG&E and LEU has existing access) within 0.25 miles of the work area for Swainson's hawk and white-tailed kite and 500 feet of the work area for other raptor species, special-status birds, and 100 feet of the work area for non-raptor common native bird nests. Private property will be observed (e.g., using binoculars or spotting scopes) from adjacent accessible areas. ▶ Surveys for Swainson's hawk shall be conducted according to the guidelines outlined in <i>Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley</i> (Swainson's Hawk Technical Advisory Committee 2000). ▶ If no active nests are found, the qualified biologist shall submit a report documenting the survey methods and results to PG&E or LEU and CPUC, and no further mitigation shall be required. ▶ If active nests are found, impacts on nesting birds shall be avoided by establishing appropriate buffers around active nest sites identified during focused surveys to prevent disturbance to the nest. Project activity (e.g., ground disturbance, vegetation removal, staging, heavy equipment use, vehicle use, helicopter overflight) shall not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the	Prior to construction.	Qualified biologist survey, reporting, and planning.

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nest is no longer active, or reducing the buffer would not likely result in nest abandonment. Buffers typically shall be 0.25 miles for Swainson's hawk and white-tailed kite; 500 feet for tricolored blackbird, great blue heron, northern harrier, and California horned lark (consistent with the SJMSCP); 500 feet for other raptors; and 300 feet for bank swallow (consistent with the SJMSCP). Buffer size for other non-raptor bird species shall be determined by a qualified biologist. Factors to be considered for determining buffer size shall include presence of natural buffers provided by vegetation or topography, nest height above the ground, baseline levels of noise and human activity, species sensitivity, and proposed project activities. Generally, buffer size for these species shall be at least 100 feet for special-status bird species and at least 20 feet for common bird species. The size of the buffer may be adjusted if a qualified biologist determines that such an adjustment shall not be likely to adversely affect the nest. Any buffer reduction for a special-status bird species shall require coordination with CDFW. Periodic monitoring of the nest by a qualified biologist during project activities shall be required if the activity has potential to adversely affect the nest, the buffer has been reduced, or if birds within active nests are showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during project activities, as determined by the qualified biologist. ▶ PG&E and LEU shall each develop a nesting bird management plan for their individual project activities. PG&E shall submit the final plan to CPUC no less than 60 days prior to construction. CPUC approval is required before the plan is implemented. The nesting bird management plan shall include measures and an adaptive management program to avoid and minimize impacts on special-status and bird species protected by the MBTA or California Fish and Game Code during project construction. Specifically, the nesting bird management plans shall refer to the requirements listed above and shall contain the following information: ▪ Appropriate survey timing, extents, methods, and surveyor qualifications; approved nest deterrent methods, including areas where vegetation will be cleared for the purpose of deterring nesting; monitoring and reporting protocols during construction; protocols for determining whether a nest is active; and protocols for documenting, reporting, and protecting active nests within construction areas. If preconstruction survey protocols exist for a certain species, the plan shall outline the implementation of these protocols. ▪ Guidelines for determining appropriate and effective buffer distances that shall account for specific project settings, bird species, stage of nesting cycle, and construction work type. Language for the buffer reduction process shall be included in the plan and shall include substantial evidence for reducing the buffer including but not limited to relevant scientific literature, studies, and life history accounts. Buffer reduction shall include coordination with the appropriate wildlife agencies and CPUC if reducing the buffer of a raptor or special-status species.		

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
Mitigation Measure BIO-2c [PG&E and LEU]: Conduct Protocol-Level Surveys for Burrowing Owl and Implement Avoidance Measures The following mitigation measure shall supersede and replace APM BIO-2, APM BIO-3, BMP BIO-2, and BMP BIO-3 for burrowing owl: ▶ A qualified biologist approved by CPUC shall conduct surveys for burrowing owls in accessible areas of habitat suitable for the species on and within 1,640 feet of the work area. Inaccessible areas (e.g., adjacent private property) will not be surveyed directly, but the biologist may use binoculars or a spotting scope to survey these areas. A minimum of four surveys shall be conducted to determine whether burrowing owls occupy the site. Surveys shall be conducted according to Appendix D of the 2012 <i>Staff Report on Burrowing Owl Mitigation</i> prepared by the California Department of Fish and Game (now CDFW) (CDFG 2012) or any subsequent updated guidance. If feasible, at least one survey should be conducted between February 15 and April 15, and the remaining surveys should be conducted between April 15 and July 15, at least three weeks apart. Because burrowing owls may recolonize a site after only a few days, one of the surveys, or an additional survey, shall be conducted no less than 14 days before initiating ground disturbance activities to verify that take of burrowing owl would not occur. ▶ If no occupied burrows are found, the qualified biologist shall submit a report documenting the survey methods and results to PG&E or LEU and CPUC, and no further mitigation shall be required. ▶ If an active burrow is found within 1,640 feet of pending construction activities, PG&E or LEU shall establish and maintain a buffer around the occupied burrow and any identified satellite burrows (i.e., non-nesting burrows that burrowing owls use to escape predators or move young into after hatching) to prevent take of the burrowing owls. ■ During the nonbreeding season (September 1 through January 31), the minimum buffer distance shall be 164 feet (50 meters). During the breeding season (February 1 through August 31), the minimum buffer distance shall be increased to 1,640 feet (500 meters). If CDFW publishes subsequent guidance, including buffer sizes, in light of the designation of burrowing owl as a candidate for listing under CESA, these guidance and requirements shall take precedence over the buffers described in this mitigation measure. ■ The buffer may be adjusted if, in consultation with CDFW, the qualified biologist determines that an alternative buffer shall not result in take of burrowing owl adults, young, or eggs because of particular site features (e.g., topography, natural line-of-sight barriers), level of project disturbance, or other considerations. If the buffer is reduced, the qualified biologist shall monitor the behavior of the burrowing owls during all project activities within 1,640 feet of the burrow. If the owls are disturbed or agitated (e.g., vocalizations, bill snaps, fluffing feathers to increase body size appearance, drooping wings and rotating	Prior to and during construction.	Qualified biologist survey and reporting. Construction monitor to implement in consultation with CDFW, if required.

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them forward, crouching and weaving back and forth) by the project activities, the biologist shall have the authority to halt the activities and reestablish a buffer consistent with the first item above until the agitated behavior ceases and normal behavior resumes. ▪ The buffer shall remain in place around the occupied burrow and associated satellite burrows until the qualified biologist has determined through noninvasive methods that the burrows are no longer occupied by burrowing owl. A previously occupied burrow will be considered unoccupied if surveys demonstrate that no owls have used the burrow for seven consecutive days. ▪ Locations of burrowing owls detected during surveys shall be reported to the CNDDB.		
Mitigation Measure BIO-2d [PG&E and LEU]: Implement Limited Operating Period, Conduct Focused Surveys, and Implement Avoidance Measures for Crotch's Bumble Bee The following mitigation measure shall supersede and replace APM BIO-3, APM BIO-4, BMP BIO-3, and BMP BIO-4 for Crotch's bumble bee: ▶ Initial ground-disturbing work (e.g., grading, vegetation removal, staging) in grassland habitat or edges of agricultural areas that contain grasses or forbs shall take place between August 15 and March 15, if feasible, to avoid impacts on nesting Crotch's bumble bees. ▶ If the above limited operating period is not feasible, a qualified biologist approved by CPUC, familiar with bumble bees of California, and experienced using survey methods for bumble bees, shall conduct a habitat assessment and focused survey for Crotch's bumble bee before the start of any ground-disturbing activities in grassland habitat or edges of agricultural areas that contain grasses or forbs. Surveys shall be performed when Crotch's bumble bee is most likely to be identified, typically from April through August (i.e., the colony active period) when floral resources and ideal weather conditions are present and shall follow the methods in Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW 2023). Surveys shall be conducted during the colony active period closest to the start of planned construction activities. ▶ PG&E or LEU shall submit a survey report to CDFW and CPUC within 1 month of survey completion and shall notify CDFW and CPUC within 24 hours if Crotch's bumble bees are detected. ▶ If Crotch's bumble bees are detected during the focused survey, appropriate avoidance measures shall be implemented. Avoidance measures shall include, but not be limited to, the following: ▪ Protective buffers shall be implemented around active nesting colonies until these sites are no longer active. A qualified biologist, in coordination with CDFW, shall determine the appropriate buffer size to protect nesting colonies.	Prior to and during construction.	Qualified biologist survey and reporting. CDFW to approve.

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Applicant-Proposed Measures and Mitigation Measures	Timing	Monitoring/Reporting/ Verification Requirements
▪ If nesting colonies are detected, avoidance areas shall be implemented in areas near the colony location that contain significant floral resources for the colony, if present. A qualified biologist shall determine the appropriate avoidance area size to protect foraging resources. ▪ If project activities involving temporary disturbance (e.g., staging) would occur where a nesting colony was detected after the nesting colony is no longer active, the area shall be restored to original conditions after the temporary disturbance is complete such that habitat for Crotch's bumble bee would be available. ▶ If take of Crotch's bumble bee cannot be avoided, PG&E or LEU shall obtain an incidental take permit (ITP) from CDFW and shall implement all avoidance measures included in the ITP. CDFW may also require compensatory mitigation through on-site habitat restoration or purchase of credits at an appropriate mitigation bank. Avoidance measures included in the ITP would reduce the likelihood of take of Crotch's bumble bees such that impacts on the species would be fully mitigated. These measures would include but not be limited to: ▪ specifications for construction timing and sequencing requirements to avoid impacts on nesting Crotch's bumble bees; ▪ preconstruction surveys conducted within 30 days prior to the start of ground-disturbing activities; ▪ establishment of seasonal no-disturbance buffers around nest sites; ▪ construction monitoring; ▪ restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., BMPs to minimize the spread of invasive plant species); and ▪ provisions to avoid Crotch's bumble bees or potential Crotch's bumble bees if observed away from a nest during project activity (e.g., ceasing of project activities until the animal has left the work area). ▶ Documentation of compliance with this mitigation measure and any required coordination with CDFW or acquisition of an ITP shall be provided to CPUC before commencement of any project construction activities.		
Mitigation Measure BIO-7: [PG&E and LEU] Develop and Implement an Avian Protection Plan The following mitigation measure shall supersede and replace APM BIO-9, APM BIO-10, BMP BIO-9, and BMP BIO-10. ▶ PG&E shall implement their avian protection plan, PG&E's Program to Address Avian Electrocutions, Collisions, and Nesting Birds (PG&E 2018), including all risk-reduction measures and training and reporting requirements therein. CPUC approval is necessary prior to plan implementation for PG&E's portion of the project. ▶ LEU must follow the recommendations outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012 or the most current version). In addition, LEU shall develop and implement an avian protection plan according to Avian Protection Plan Guidelines (APLIC and USFWS 2005). The plan shall include	During final project design/prior to construction.	Submit plan to CDFW and USFWS.

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measures to minimize collision and execution risk to avian species during project operation. The plan shall be submitted for review to CDFW and USFWS at least 60 days before construction begins.		
Geology, Soils, and Mineral Resources		
BMP GEO-1: Appropriate LEU Design Measures Implementation. Based on available references, sands and loamy sands are the primary soil types expected to be encountered in the graded and excavated areas as project construction proceeds. Potentially problematic subsurface conditions may include soft or loose soils. Where soft or loose soils are encountered during design studies or construction on LEU facilities, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils encountered during construction. Such measures may include the following: ▶ Locating construction facilities and operation away from areas of soft and loose soil. ▶ Overexcavating soft or loose soils and replacing them with non-expansive engineered fill. ▶ 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. ▶ 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.	During construction.	LEU to implement.
BMP PAL-1: Retain an LEU Qualified Paleontological Principal Investigator. An LEU Paleontological Principal Investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all BMPs related to paleontological resources are properly implemented. The Paleontological Principal Investigator will have a master's degree or Ph.D. in geology or paleontology, have knowledge of the local paleontology, and be familiar with paleontological procedures and techniques.	Prior to construction.	LEU to implement.
BMP PAL-2: LEU Workers Environmental Awareness Training. Training on paleontological resources protection will be administered for excavation deeper than 3 feet below ground surface at all LEU work locations. It may be provided by the LEU project Paleontologist or Archaeologist 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. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the City of Lodi.	Prior to and during construction.	LEU to provide City of Lodi with a copy of the training materials and training sign-in sheets.

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BMP PAL-3: Paleontological Resource Monitoring for Select LEU Construction Activities. A paleontological monitor will be present to monitor for paleontological resources in areas where Riverbank formation occurs at the surface and excavation is greater than 3 feet deep and, for excavations involving drilling or augering, uses a drill diameter that is larger than 3 feet. The paleontological monitor will be able to: (1) recognize fossils and paleontological deposits, and deposits that may be paleontologically sensitive; (2) take accurate and detailed field notes, photographs, and locality coordinates; and (3) document project-related ground-disturbing activities, their locations, and other relevant information, including a photographic record.	During construction.	LEU to monitor and document.
BMP PAL-4: LEU Unanticipated Paleontological Discovery. If significant paleontological resources are discovered during LEU's construction activities, the following procedures will be followed: ▶ Stop work immediately within 100 feet of the fossil find. ▶ Contact the designated project inspector and LEU Cultural Resource Lead immediately. ▶ Protect the site from further impacts, including looting, erosion, or other human or natural damage. ▶ Arrange for an LEU Paleontological Principal Investigator to evaluate the discovery. If the discovery is determined to be significant, LEU will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approved by the paleontologist and LEU Cultural Resource Lead. ▶ Curate all fossils discovered in an appropriate repository. ▶ A qualified paleontologist will be notified to review the need for paleontological monitoring during subsequent ground-disturbing activities with the potential to affect paleontologically sensitive sediments at that location. The qualified paleontologist will be responsible for the reassessment of paleontological sensitivity upon the receipt of additional information from ongoing excavations, which may result in reducing, or increasing, the amount of monitoring required.	During construction.	LEU to monitor and document.
Greenhouse Gas Emissions		
BMP GHG-1: LEU Minimize GHG Emissions. LEU will implement the following to minimize GHG emissions: ▶ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of five consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine	During construction.	LEU to implement.

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will be shut off. Construction supervisors will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. ▶ Maintain construction equipment in proper working conditions in accordance with manufacture specifications. ▶ Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program. ▶ Minimize welding and cutting by using compression or mechanical applications where practical and within standards. ▶ Encourage use of natural gas-powered vehicles for passenger cars and light-duty trucks where feasible and available. ▶ On road and off-road vehicle tire pressures will be maintained to manufacturer specifications. Tires will be checked and re-inflated at regular intervals. ▶ Use line power instead of diesel generators at construction sites where line power is available. ▶ If suitable park-and-ride facilities are available in the project vicinity, construction workers will be encouraged to carpool to the job site. ▶ Encourage the recycling of construction waste where feasible.		
BMP GHG-2: LEU Minimize SF₆ Emissions. LEU will implement the following to minimize SF₆ emissions: ▶ LEU will employ standard best practices during LEU operations. ▶ Comply with the Regulation for Reducing Greenhouse Gas Emissions from Gas Insulated Switchgear, sections 95350 to 95359.1, title 17, CCR. ▶ Maintain substation breakers in accordance with LEU's maintenance standards.	Operations and maintenance.	LEU to implement.
Hazards and Hazardous Materials		
BMP HAZ-1. LEU Development and Implementation of Hazardous Material and Emergency Response Procedures. LEU 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 and, as appropriate, during the O&M phase. 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 SWPPP (BMP HYD-1). A site-specific SPCC Plan and an HMBP will be developed before the operation of the new LEU Guild Substation (BMP HYD-4).	During construction and operations and maintenance.	LEU to implement.
BMP HAZ-2. LEU Emergency Spill Supplies and Equipment. Materials will be available on the project site during construction to contain, collect, and dispose of any minor spill at LEU's project components. Oil-absorbent material,	During construction.	LEU to implement.

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tarps, and storage drums will be available on the project site during construction and will be used to contain and control any minor releases of oil. If excess water and liquid concrete escape during pouring, they will be directed to adjacent lined and bermed areas, where the concrete will dry and then be transported for disposal per applicable regulations.		
BMP HAZ-3. LEU Shock Hazard Safety Measures. All authorized personnel working on site, during either construction or O&M, will be trained according to LEU standards. To minimize potential exposure of the public to electric shock hazards, an 8-foot-tall chain-link fence topped with 1 to 2 feet of barbed wire (up to approximately 10 feet in height) will be installed around the perimeter of the new LEU Guild Substation before the new electric equipment is energized.	During construction and operations and maintenance.	LEU to implement.
BMP HAZ-4. LEU Worker Environmental Awareness Training Program. An LEU WEAP will be developed and implemented prior to construction. The WEAP training will administered to communicate environmental concerns and appropriate work practices to all construction field personnel before they begin work on the project. 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 implementation of best practices and measures. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the City of Lodi.	Prior to and during construction.	LEU to provide City of Lodi with a copy of the training materials and training sign-in sheets.
BMP HAZ-5. LEU Potentially Contaminated Soil or Groundwater. Soil or groundwater occurring at LEU project components that is suspected of being contaminated (based on existing analytical data or visual, olfactory, or other evidence) and is removed during excavation activities will be segregated and tested if pre-characterization has not occurred. If the soil or groundwater is contaminated above hazardous levels, it will be contained and disposed of offsite at a licensed waste facility. The presence of known or suspected contaminated soil or groundwater will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.	During construction.	LEU to implement.

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Hydrology and Water Quality		
BMP HYD-1: Prepare and Implement an SWPPP for LEU Project Components. Stormwater discharges associated with project construction activities are regulated under the CGP. Cases in which construction will disturb 1 acre or greater 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. LEU will comply with all CGP requirements for construction of LEU project components. Following project approval, LEU will prepare and implement a 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 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) at LEU project components. Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will propose best practices that will be implemented during construction activities. Erosion and sediment control measures – such as straw wattles, erosion control blankets, and silt fences – will be installed in compliance with the CGP. Suitable soil stabilization measures will be used to protect exposed areas during construction activities, as specified in the SWPPP. During construction activities, measures will be implemented to reduce exposure of construction materials and waste to stormwater. These safety measures will be installed following manufacturer's specifications and according to standard industry practice. Erosion and sediment control measures may include the following: ▶ Straw wattle, silt fence, or gravel bag berms ▶ Trackout control at all entrances and exits ▶ Stockpile management ▶ Effective dust control measures ▶ Good housekeeping measures ▶ Stabilization measures, which may include wood mulch, gravel, and/or seeding. Identified erosion and sediment control measures will be installed prior to the start of construction activities and will be inspected and improved as required by the CGP. 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 will be managed using industry-standard stockpile management techniques. Where construction activities occur near a surface waterbody or drainage channel, the staging of construction materials and equipment and excavation spoil stockpiles will be placed and managed in a manner to minimize the risk of sediment transport to the drainage. Any surplus soil will be transported from the site and disposed of in accordance with federal, state, and local regulations.	Prior to and during construction.	LEU to implement.

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The SWPPP will identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials will be permitted, if necessary. The plan will be maintained and updated during construction as required by the CGP.		
BMP HYD-2: LEU Worker Environmental Awareness Program. LEU Worker Environmental Awareness Program. LEU's worker environmental awareness program will communicate environmental issues and appropriate work practices specific to LEU project components to all field personnel before they begin work on the project. These will include spill prevention and response measures from the LEU SWPPP and proper implementation of best practices. An LEU environmental monitoring program also will be implemented to ensure that the plans are followed throughout the construction period for LEU project components. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the City of Lodi.	Prior to and during construction.	LEU to provide City of Lodi with a copy of the training materials and training sign-in sheets.
BMP HYD-3: Project Site Restoration. As part of the final construction activities, LEU will restore all removed curbs and gutters, repave, and restore landscaping or vegetation as necessary for its portion of the project. Within the City of Lodi, LEU will repair or replace damaged or removed stormwater infrastructure in kind or in conformance with current City design standards, whichever is deemed most appropriate by City staff through the building permit process. Completion of the required restoration of the stormwater infrastructure will be verified by the City of Lodi.	Following completion of construction.	LEU to implement. City of Lodi to verify completion.
BMP HYD-4: SPCC Plan for LEU Guild Substation and SPCC Plan Modification for LEU Industrial Substation. LEU will prepare an SPCC plan for LEU Guild Substation for implementation during operation, and the existing LEU Industrial Substation SPCC Plan will be modified prior to operation of the expanded facility, as required by applicable regulations (40 CFR 112). An SPCC plan includes engineered and operational methods for preventing, containing, and controlling potential releases (for example, construction of a retention pond, moats, or berms) as well as provisions for quick and safe cleanup.	Operations and maintenance.	LEU to implement.
BMP HYD-5: Project Stormwater Plan for LEU Guild Substation. LEU will prepare a Project Stormwater Plan for LEU Guild Substation to align with the City of Lodi's Stormwater Management and Discharge Control Code, Lodi Municipal	Prior to construction.	LEU to implement. City of Lodi to verify completion.

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Code Chapter 13.14. The plan will include proposed site design and control measures and postconstruction stormwater runoff calculations showing pre-project and post-project volumes.		
Noise		
BMP NOI-1: LEU General Construction Noise Management LEU will employ the following standard noise-reducing construction practices: ▶ Comply with manufacturer's muffler requirements on all construction equipment engines and ensure exhaust mufflers are in good condition. ▶ Turn off construction equipment when not in use, where applicable. ▶ Locate stationary equipment, construction staging areas, and construction material areas as far as practical from sensitive receptors. ▶ Include noise control requirements for construction equipment and tools in specifications provided to construction contractors to the maximum extent practicable, including performing all work in a manner that minimizes noise. ▶ LEU will provide written notice at least 1 week prior to planned construction activities to all sensitive receptors and residences within approximately 500 feet of construction sites, staging yards, and access roads. LEU will post notices in public areas, including recreational use areas, within approximately 500 feet of the construction work areas. The announcement will state approximately where and when construction will occur in the area. Notices will provide tips on reducing noise intrusion – for example, by closing windows facing the planned construction. LEU will identify a public liaison to respond to concerns of neighboring receptors during construction, including residents, about construction noise disturbance. LEU also will establish a toll-free telephone number for receiving questions or concerns during construction and develop procedures for responding to callers. Contact information for reaching the LEU public liaison officer by telephone or in person will be included in the notices and also posted conspicuously at the construction sites. LEU will respond to questions or concerns received.	During construction.	LEU to implement.
BMP NOI-2: LEU Noise Minimization with Portable Barriers Compressors and other small stationary equipment used during construction of LEU project components will be shielded with portable barriers if appropriate and if located within approximately 200 feet of a residence.	During construction.	LEU to implement. City of Lodi to monitor compliance.
BMP NOI-3: LEU Noise Minimization with Quiet Equipment Quiet equipment will be used during construction of LEU project components whenever possible (for example, equipment that incorporates noise-control elements into the design, such as quiet model compressors or generators, can be specified).	During construction.	LEU to implement.

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BMP NOI-4: LEU Noise Minimization through Direction of Exhaust When in proximity to noise-sensitive uses, LEU equipment exhaust stacks and vents will be directed away from those noise-sensitive uses where feasible.	Operations and maintenance.	LEU to implement.
BMP NOI-5: LEU Noise Disruption Minimization through Residential Notification In the event that nighttime construction is necessary for LEU project components – for instance, if certain activities such as HDD in certain soil conditions need to continue to completion – affected residents will be notified in advance by mail, personal visit, or door-hanger, and will be informed of the expected work schedule.	During construction.	LEU to implement.
BMP NOI-6: LEU Horizontal Directional Drilling Noise Minimization Measures Temporary barriers utilizing materials such as intermodal containers or frac tanks, plywood walls, mass-loaded vinyl (vinyl impregnated with metal), sound-absorbing blankets, hay bales, or similar materials will be used to reduce noise generated by the auger bore operations. HDD activities will be limited to daylight hours unless a situation arises where ceasing the activity would compromise safety (both human health and environmental) and the integrity of the project. If nighttime HDD activities are required, the project will monitor actual noise levels from HDD activities between 10:00 p.m. and 7:00 a.m. If the nighttime noise levels created by HDD operation result in outreach to LEU public liaison officer and are in excess of the ambient noise level by approximately 5 dBA at the nearest residential property plane, LEU will, within 24 hours of the excess measurement, employ additional minimization measures to the extent practicable. Such measures may include ensuring that semi-permanent stationary equipment (for example, generators) is stationed as far from sensitive areas as practicable, using sound-attenuated “quiet” or “Hollywood/Movie Studio” silencing packages, or modifying barriers to further reduce noise levels.	During construction.	LEU to implement. City of Lodi to monitor compliance.
BMP NOI-7: LEU Noise Minimization Equipment Specification LEU will specify general construction noise reduction measures that require the contractor to ensure that all equipment is in good working order, adequately muffled, and maintained in accordance with the manufacturers’ recommendations.	During construction.	LEU to include in final design and construction documents.
Transportation		
BMP TRA-1: LEU Temporary Traffic Controls. LEU will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those permits related to the transport of oversized loads and certain materials, and will comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. LEU will develop traffic control plans to detail road and lane closure or with reduction or traffic diversions as required by the encroachment permits. Construction activities that are in, along, or cross local roadways will follow best 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 in the	During construction.	City of Lodi to verify permits are obtained.

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project area. If required for obtaining a local encroachment permit, LEU will establish a TMP to address haul routes, timing of heavy equipment, and heavy building material deliveries, potential street or lane closures, signing, lightning, and traffic control device placement.		
BMP TRA-2: LEU Repair of Damaged Transportation infrastructure. As part of the final construction activities of the project, LEU will restore all removed curbs, gutters, and sidewalks, and repave all removed or damaged paved surfaces associated with LEU construction activities.	Following completion of construction.	LEU to implement.
Wildfire		
BMP WFR-1. PG&E Construction Fire Prevention Plan. A project-specific <i>Construction Fire Prevention Plan</i> for construction of the project will be prepared prior to initiation of construction by LEU. The plan will be provided to the City of Lodi Fire Department, which has jurisdiction over the areas where LEU's project activities are located, none of which are within very high or high FHSZs. The plans will be provided to the department at least 90 days prior to the initiation of construction activities for review and approval. 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 LEU's current WMP; ▶ 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 ▶ Crew training, including the construction fire prevention practices described in BMP WFR-2; ▶ Method(s) for verifying that all plan protocols and requirements are being followed; ▶ A project Fire Marshal or similar qualified person will be responsible for training project personnel and enforcing all provisions of the LEU 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.	Prior to and during construction.	LEU to prepare plan and provide to City of Lodi Fire Department.

BMP WFR-2. LEU Construction Fire Prevention Practices. LEU will implement the following fire prevention practices at active construction sites and during maintenance activities:

- ▶ Existing LEU personnel conducting maintenance on the project are trained on the LEU WMP and will follow the plan in regard to training, preparation, communication methods and means, observations of and alerts concerning weather conditions including NWS events, and LEU's work restrictions and fire mitigation required for elevated fire potential.
- ▶ Construction personnel will be trained in fire-safe actions, including LEU project Construction Fire Prevention Plan, 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.
- ▶ All construction personnel will carry a laminated card and be provided a hard hat sticker that list pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on laminated contact cards and hard hat stickers will be updated as needed and redistributed to all construction personnel prior to the day the information change goes into effect.
- ▶ LEU will coordinate with the City of Lodi Fire Department prior to construction activities to determine the appropriate amounts of fire equipment to be carried on vehicles and, should a fire occur, to coordinate fire suppression activities as part of the LEU Construction Fire Prevention Plan review.
- ▶ Construction personnel will have fire suppression equipment on all construction vehicles 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. Communication pathways and equipment will be tested and confirmed operational each day prior to initiating construction activities at each work site. All fires will be reported to the fire agencies with jurisdiction in the area immediately 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 a fire index area (FIA) when the nearest 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 will apply.
- ▶ The risk for potential fire hazards associated with the construction of the new substation is low because the setting has no known potential wildfire risk. Given the surrounding settings of urban development, LEU does not expect any restrictions to be used for "high-risk days." LEU will continue to comply with its 2024 WMP, as updated yearly.

During construction and operations and maintenance.

LEU to implement.