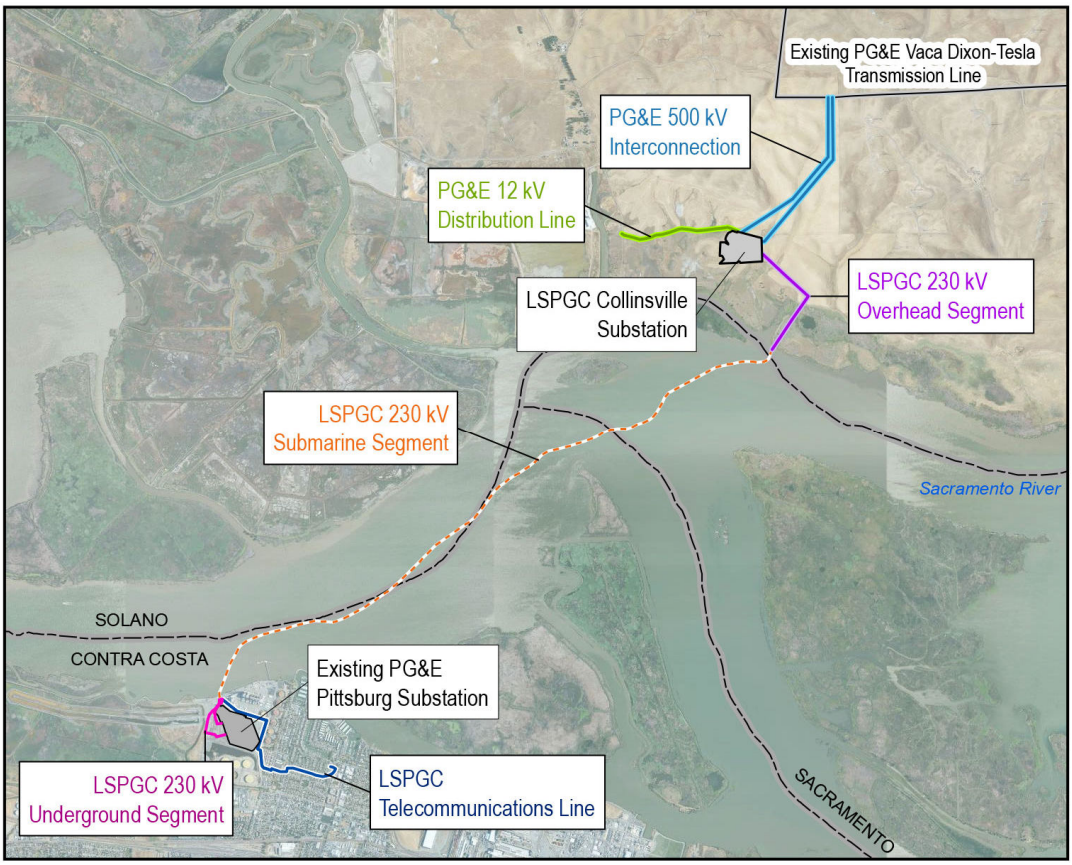

Proponent's Environmental Assessment for LS Power Grid California, LLC's

Collinsville 500/230 Kilovolt Substation Project

July 2024

The Proposed Project was approved by the California Independent System Operator (CAISO) in January 2023 to address CAISO-identified overloads on the existing 230 kilovolt (kV) corridor between Contra Costa and Newark substations and to provide additional supply from the 500 kV system into the northern Greater Bay Area to increase reliability and advance additional renewable generation in the northern area. The Proposed Project includes the LS Power Grid California's Collinsville Substation, a new approximately 6-mile-long transmission line, and a telecommunications line. The Proposed Project is located in Solano, Sacramento, and Contra Costa counties, California.

Application A.24-__-__ to the California Public Utilities Commission

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CHAPTER 1 – EXECUTIVE SUMMARY

1.1 PROPOSED PROJECT SUMMARY

LS Power Grid California, LLC (LSPGC), a wholly owned subsidiary of LS Power Associates, established to own and operate transmission projects in California, is proposing the Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project). The Proposed Project is located in Solano, Sacramento, and Contra Costa counties within an existing regional transmission system that provides electricity to the northern Greater Bay Area. The proposed LSPGC Collinsville Substation would be located to the south and west of Stratton Lane and approximately 0.75 mile northeast of the unincorporated community of Collinsville. Two approximately 1.5-mile-long single-circuit 500 kV overhead transmission line segments would be constructed to extend and interconnect Pacific Gas and Electric Company's (PG&E's) existing Vaca Dixon-Tesla 500 kV Transmission Line to the proposed LSPGC Collinsville Substation (proposed PG&E 500 kV Interconnection). An approximately 1-mile-long double-circuit 230 kV overhead transmission line (proposed LSPGC 230 kV Overhead Segment) would travel from the proposed LSPGC Collinsville Substation and connect to an in-river transition structure on the northern edge of the Sacramento River. The in-river structure would transition the overhead conductors to up to six approximately 4.5-mile-long 230 kV submarine cables running beneath the Sacramento-San Joaquin River Delta (Delta) waterways approximately 6 to 15 feet below the sediment surface (proposed LSPGC Submarine Segment). The submarine cables would connect to underground cables at an onshore underground utility vault near the southern edge of the Sacramento River and continue until reaching PG&E's existing Pittsburg Substation (proposed LSPGC 230 kV Underground Segment) in the City of Pittsburg.

The Proposed Project was identified by the California Independent System Operator (CAISO) in its 2021-2022 Transmission Plan as a policy upgrade to address transmission constraints identified in the policy on-peak deliverability assessment in the northern Greater Bay Area, as well as to allow advancement of renewable energy generation in the northern areas. CAISO's analysis, conducted through an open and stakeholder-inclusive planning process, led to the identification of the need for the Proposed Project as part of a comprehensive solution (relying in part on other upgrades already identified to meet reliability needs notwithstanding state policy objectives) to mitigate thermal overloading of the Cayetano-North Dublin 230 kV Transmission Line under N-2 conditions, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line under N-0 conditions, and Las Positas-Newark 230 kV Transmission Line under N-2 conditions,[1] which is limiting the deliverability of renewable and energy storage portfolio resources (CAISO 2022).

The Proposed Project's purpose is to address a number of identified transmission constraints within the base portfolio (Cayetano-North Dublin 230 kV Transmission Line, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line, and Las Positas-Newark 230 kV Transmission Line) and provide an additional supply from the 500 kV system into the northern Greater Bay Area to

[1] Normal or N-0 conditions refer to when the electric system is functioning normally and is not experiencing outages. N-1 contingency refers to the first contingency, or an outage occurring to a single component (e.g., a transformer or transmission circuit) of the electric system. N-2 contingency refers to when an outage occurs to two components of the electric system (CAISO 2022).

increase reliability to the area and advance additional renewable generation in the area (CAISO 2022). The Proposed Project would:

- Ensure the reliability of a major portion of the CAISO-controlled grid;
- Provide cost-effective voltage control and other electric transmission grid benefits;
- Support the provision of safe, reliable, and adequate electricity service to the PG&E service territory; and
- Facilitate the importation and use of renewable electricity to fulfill California's energy polices and goals by ensuring reliable operation of the grid.

The Proposed Project was selected because it best meets all the project objectives and minimizes environmental impacts. Major Proposed Project objectives include:

- Meet CAISO's policy-driven need for the Proposed Project to address a number of identified transmission constraints on the Cayetano-North Dublin 230 kV Transmission Line, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line, and Las Positas-Newark 230 kV Transmission Line and provide an additional supply from the 500 kV system into the northern Greater Bay Area.

- Meet the functional specifications set forth by CAISO for the proposed 500/230 kV substation and 230 kV transmission lines located near or adjacent to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. Close proximity to PG&E's existing 500 kV transmission line corridor would reduce the length of the 500 kV transmission interconnection lines, thereby reducing the right-of-way (ROW) requirements and the potential for significant environmental impacts.

- Achieve commercial operation by June 2028 in order to address critical reliability issues within the transmission system, such as high voltage under non-peak conditions and voltage that varies significantly on a daily basis.

- Improve and maintain the reliability of the transmission grid by addressing overloads on the Cayetano-North Dublin 230 kV Transmission Line, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line, and Las Positas-Newark 230 kV Transmission Line and increase deliverability of renewable power by building and operating a facility that would help keep transmission voltages within specified parameters, reduce transmission losses, increase reactive margin for the system bus, increase transmission capacity, provide a higher transient stability limit, increase damping of minor disturbances, and provide greater voltage control and stability.

- Facilitate deliverability of load from existing and proposed renewable generation projects in the northern Greater Bay Area and corresponding progress toward achieving California's Renewable Portfolio Standards goals in a timely and cost-effective manner by California utilities.

- To the extent practicable, locate the Proposed Project on land that is or has previously been disturbed, is in an existing ROW or adjacent to existing utility uses, or would

otherwise minimize environmental impacts in a manner consistent with prudent transmission planning.

- Construct and operate the facility with safety as a top priority.
- Meet the Proposed Project need in a safe, cost-effective manner and consistent with LSPGC's cost containment agreement in the Approved Project Sponsor Agreement.
- Comply with and assist CAISO in meeting applicable Reliability Standards and Criteria developed by the North American Electric Reliability Corporation, Western Electricity Coordinating Council, and CAISO.
- Design and construct the Proposed Project in conformance with LSPGC's standards, the National Electric Safety Code, and other applicable national and state codes and regulations.

1.2 LANDOWNERSHIP AND RIGHT-OF-WAY REQUIREMENTS

The parcels where the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and PG&E 500 kV Interconnection would be constructed are under private ownership. The proposed LSPGC 230 kV Submarine Segment would be located within land that is owned by the state and partially within submerged lands owned by the City of Pittsburg (City of Pittsburg 2024). PG&E owns the existing 38.4-acre parcel on which its existing Pittsburg Substation is located, as well as the parcels on which the Vaca Dixon and Tesla substations are located. The proposed LSPGC Telecommunications Line would be located on privately owned land and/or in a franchise position in existing roadways in the City of Pittsburg. LSPGC would acquire land rights for approximately 32 acres for the proposed LSPGC Collinsville Substation facility, including all considerations for site grading, fencing, staging areas, equipment, internal circulation, and other operational considerations. LSPGC would obtain the necessary permanent easements from landowners to accommodate the proposed LSGPC 230 kV Overhead Segment. PG&E would secure new rights for installation of the proposed PG&E 500 kV Interconnection by negotiating agreements with landowners.

Temporary construction easements would be required for temporary construction areas (e.g., staging areas and pulling sites) and temporary access roads located outside of the permanent easements that would be acquired. All temporary construction areas that would support the construction of the proposed LSPGC Collinsville Substation would be located on the parcel for which LSPGC would acquire rights. All temporary easements would be secured by negotiating with landowners.

Because PG&E and LSPGC are subject to the jurisdiction of the California Public Utilities Commission (CPUC), they must also comply with Public Utilities Code Section 851. Among other things, this code provision requires these utilities to obtain CPUC approval when they convey utility property, including on utility-owned property, to third parties. Obtaining CPUC approval for a Section 851 application requires compliance with the California Environmental Quality Act (CEQA). LSPGC would file a Section 851 application concurrently with the Proposed Project's Certificate of Public Convenience and Necessity (CPCN) application; PG&E

would also seek approval under Section 851 if PG&E conveys utility property rights to a third party.

1.3 AREAS OF CONTROVERSY

LSPGC met with several agencies and relevant stakeholders to solicit input on the design and potential resource and land use issues in the vicinity of the Proposed Project. Agencies and stakeholders consulted include the CPUC, State Water Resources Control Board (SWRCB), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), United States (U.S.) Army Corps of Engineers (USACE), Office of Historic Preservation (OHP), National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries), San Francisco Bay Conservation and Development Commission (BCDC), California State Lands Commission (CSLC), Central Valley Flood Protection Control Board (CVFPB), and U.S. Coast Guard (USCG). Table 2-1: Summary of Pre-Filing Consultation and Public Outreach Meetings and Correspondence in Chapter 2 – Introduction summarizes the meetings and correspondence that took place during the development of this Proponent's Environmental Assessment (PEA) and the CPCN application.

Based on the conducted outreach and consultation, areas of concern were identified. USACE shared specific permit condition requirements relating to the installation of the 230 kV submarine cables and requested that LSPGC perform a scour analysis, bury the 230 kV submarine cables at least 15 feet below the surface for safety in the navigation channel,[2] and consider the longfin smelt (*Spirinchus thaleichthys*) in consultations. As described in Chapter 3 – Project Description, applicant-proposed measure (APM) GEN-1 would require the preparation and submittal of a Scour Analysis to the USACE. Following the USACE's review, the study will be provided to the CPUC. CSLC staff shared concerns related to tribal consultation and impacts to aesthetics, recreation, and navigation associated with the in-river transition structure. In addition, CSLC staff requested that environmental justice, climate change, and sea level rise analyses be included in the lease application. USCG staff shared concerns related to the lighting and/or marking of in-water transition structures and indicated that coordination between contractors and USCG groups (including the San Francisco Waterways branch and Vessel Traffic Service) should occur during submarine cable installation. In addition, USCG staff requested that LSPGC submit a Navigational Study to the USCG. As described in Chapter 3 – Project Description, APM TRA-1 would require the preparation and submittal of a Navigational Study to the USCG. Following the USCG's review, the study will be provided to the CPUC.

LSPGC would address concerns shared by agencies and stakeholders by performing the requested analyses and integrating recommendations into the Proposed Project design to the extent feasible.

[2] The USACE indicated it would review requests for a shallower burial depth upon receipt of a completed application package, including technical documentation that justifies the proposed burial depth.

1.4 SUMMARY OF IMPACTS

No potentially significant or significant and unavoidable impacts are expected as a result of the Proposed Project. LSPGC and PG&E would be responsible for overseeing the assembly of construction and environmental teams that would implement and evaluate the APMs and PG&E's Construction Measures (CMs) for the Proposed Project. LSPGC and PG&E maintain environmental compliance management programs to allow for implementation of the measures to be monitored, documented, and enforced during each Proposed Project phase. The Proposed Project would include APMs and PG&E's CMs to ensure that impacts would be less than significant for the following resource areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards, Hazardous Materials, and Public Safety
- Hydrology and Water Quality
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

The APMs are provided in Table 3-15: Applicant-Proposed Measures and Table 3-16: PG&E Construction Measures in Chapter 3 – Project Description and are described in detail in Chapter 5 – Environmental Impact Assessment. In addition, applicable CPUC draft environmental measures are included as APMs to further reduce potential impacts.

1.5 SUMMARY OF ALTERNATIVES

Alternatives to the Proposed Project are identified in accordance with CEQA Guidelines. Section 15126.6(a) of the CEQA Guidelines states the following:

> "An [Environmental Impact Report] EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

Section 15364 of the CEQA Guidelines defines "feasible" as:

> "… capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

LSPGC conducted an extensive routing and siting process to identify solutions to meet the identified Proposed Project objectives. This process began by identifying a study area and the potential scope elements required to meet the Proposed Project objectives. Once the study area was established, existing data across 10 environmental and four engineering criteria categories were collected. Based on the analysis of the environmental and engineering criteria, routing and siting alternatives were evaluated. Compatibility ratings were assigned based on the quantitative or qualitative assessments for the environmental and engineering criteria across all routes. The possible compatibility ratings included the following:

- Opportunity (i.e., when conditions are favorable for transmission line routing),
- Compatible (i.e., when resource conflicts have the potential to occur, but can be minimized through judicious routing or siting, conventional project design, agency- or industry-prescribed best management practices [BMPs], and location-specific mitigation measures),
- Moderate compatibility (i.e., when resource conflicts are likely to occur, but resolution is possible through judicious routing or siting, conventional or innovative project design, agency- or industry-prescribed BMPs, and location-specific mitigation measures),
- Low compatibility (i.e., routes are generally not legally prohibited, but suitability for routing or siting is low and alternatives should be considered), and
- Very low compatibility (i.e., routes feature more substantial conflicts and potentially carry legal prohibitions).

Utilizing this data, LSPGC identified an extensive network of routes to create the necessary scope elements to meet the Proposed Project objectives. The routes with the most favorable compatibility ratings were then reviewed and evaluated by LSPGC.

LSPGC has identified one substation site alternative, which has one alternative route for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line interconnection and one 230 kV overhead transmission line alternative route that extends toward the northern shore of the Sacramento River. One variation for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line interconnection was identified to the proposed LSPGC Collinsville Substation. This alternative and route variation are described in greater detail in Chapter 4 – Description of Alternatives. The substation site alternative and route variation addressed in Chapter 4 – Description of Alternatives were selected by LSPGC for analysis in Chapter 6 – Comparison of Alternatives. Although alternatives were considered during the development of the Proposed Project, the Proposed Project was ultimately selected because no other Proposed Project alternatives reduced or eliminated potentially significant impacts, and the Proposed Project best meets the Proposed Project objectives.

1.6 PRE-FILING CONSULTATION AND PUBLIC OUTREACH SUMMARY

As previously discussed in Section 1.3 Areas of Controversy, LSPGC met with several regulatory agencies (i.e., the CDFW, SWRCB, CPUC, RWQCB, USACE, OHP, NOAA Fisheries, BCDC, CSLC, CVFPB, and USCG) to solicit input on design and potential resource and land use issues in the vicinity of the Proposed Project. Coordination with these agencies would continue through the Proposed Project's planning process. Table 3-11: Permitting Requirements and Processes lists the permits, approvals, and licenses that LSPGC anticipates obtaining from jurisdictional agencies. No local discretionary (e.g., land use) permits would be required because the CPUC has preemptive jurisdiction over the siting and construction as well as operations and maintenance (O&M) of LSPGC facilities in California.

Throughout the approval process, LSPGC would keep area residents and property owners, government officials, Native American tribes, and interested parties informed about the scope of the Proposed Project through printed materials, one-on-one meetings, and presentations to local organizations.

During construction, LSPGC and PG&E would work to minimize disruptions from construction traffic and limit dust and noise. LSPGC and PG&E would continually communicate construction plans to government agencies, including local Native American tribes and any other applicable government officials.

1.7 CONCLUSIONS

The Proponent's Environmental Assessment (PEA) analyzes the potential environmental impacts associated with the construction and O&M of the Proposed Project. Through preparation of the PEA, it was determined that no significant impacts would occur to the 20 resource areas that were analyzed. The Proposed Project would result in no impacts or minimal impacts to the following three resource areas:

- Agriculture and Forestry Resources
- Population and Housing
- Wildfire

Any impacts that would occur have been determined to be less than significant for the following 17 resource areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards, Hazardous Materials, and Public Safety
- Hydrology and Water Quality
- Land Use and Planning

- Mineral Resources
- Noise
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

Implementation of APMs and PG&E's CMs (listed in Table 3-15: Applicant-Proposed Measures and Table 3-16: PG&E Construction Measures in Chapter 3 – Project Description) would ensure that impacts would be less than significant. The following subsections describe these impacts and summarize the conclusions and applicable APMs for the 17 resource areas.

1.7.1 Aesthetics

The Proposed Project would not impact a scenic vista or damage scenic resources. The permanent structures associated with the Proposed Project would have a less-than-significant impact on the visual character or quality of the Proposed Project area. Light and glare impacts associated with the Proposed Project would be minimal. LSPGC's APMs AES-1, AIR-2, BIO-12, and GEO-1 and PG&E's CMs AES-1, AIR-2, and GEO-1 would be implemented to ensure that impacts would be less than significant.

1.7.2 Air Quality

During construction of the Proposed Project, uncontrolled average daily emissions would exceed Bay Area Air Quality Management District (BAAQMD) applicable thresholds for nitrous oxides in 2026 and 2027; however, all other emissions would be below applicable thresholds. The nearest sensitive receptors to the planned construction activities in Solano County are 18 residences along Collinsville Road. These residences are located approximately 0.4 mile south of the proposed PG&E 12 kV Distribution Line and approximately 1 mile southwest of the proposed LSPGC Collinsville Substation. In Contra Costa County, numerous residences, the Marina Community Center, and St. Peter Martyr School would be located directly adjacent to the proposed LSPGC Telecommunications Line. With implementation of LSPGC's APMs AIR-1 and AIR-2 and PG&E's CMs AIR-1 and AIR-2, impacts associated with air quality would be less than significant.

1.7.3 Biological Resources

The Proposed Project would not cause the loss of special-status plants but would cause the permanent conversion of less than 0.1 acre and temporary disturbance of approximately 0.8 acre of sensitive plant communities. LSPGC's APMs BIO-1 through BIO-7 would ensure direct and indirect impacts to special-status plant species and sensitive natural communities, including riparian habitat, would be less than significant. LSPGC's APMs BIO-1, BIO-3, BIO-6, and BIO-8 through BIO-11 would ensure direct and indirect impacts to salt marsh harvest mouse and western pond turtle would be less than significant. PG&E's CM BIO-4 would ensure that sensitive habitat features would be avoided. Direct and indirect impacts to special-status aquatic species would be less than significant with the implementation of LSPGC's APMs BIO-1, BIO-3, and BIO-18 through BIO-25. The Proposed Project would cross jurisdictional wetlands

and water; however, implementation of LSGPC's APMs BIO-1 and BIO-4 and PG&E's CM BIO-1, as well as compliance with permits and authorizations issued for the Proposed Project, would ensure impacts would be less than significant. Although the Proposed Project would cross the Delta, which is a jurisdictional water, LSPGC would obtain all necessary permits and authorizations to ensure that impacts to waters of the U.S. and waters of the state are adequately mitigated for; thus, impacts would be less than significant. To avoid impacts to avian movement from new structures, the Proposed Project would follow practices outlined in the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 as well as Reducing Avian Collisions with Power Lines: The State of the Art in 2012. This would reduce collision or electrocution risks for birds and bats to a less-than-significant level.

1.7.4 Cultural Resources

The Proposed Project was designed to avoid known cultural resources. As discussed in Section 5.5 Cultural Resources, one of the previously recorded resources—historic transmission lines that are within the proposed Areas of Potential Impacts/Area of Potential Effects (API/APE)—is recommended as eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR). One previously recorded resource—a multi-component campsite and adobe—was nominated to the NRHP in 1972 and is outside of the proposed API/APE. The six new resources that were recorded are not recommended as eligible for listing in the NRHP or CRHR. The Proposed Project would not result in direct or indirect effects to the NRHP-nominated resource or to the transmission line that is recommended as eligible for the NRHP/CRHR. The cables of the proposed LSPGC 230 kV Submarine Segment would be located over 150 feet from the three potentially significant submerged resources located within the proposed API/APE. As a result, these resources would be avoided by the proposed LSPGC 230 kV Submarine Segment. A submerged paleolandform was identified within the proposed API/APE and would be crossed by the proposed LSPGC Submarine Segment; however, the probability is low for the presence of cultural material in the paleolandform. While the possibility exists that unknown subsurface resources or remains could be unearthed during construction, the current regulations and plans, as well as LSPGC's APMs CUL-1 through CUL-4 and PG&E's CMs CUL-1 through CUL-3, would ensure impacts to any cultural resources within the Proposed Project area would be less than significant.

1.7.5 Energy

The Proposed Project would not conflict with state or local plans for renewable energy, and it would not add capacity for the purpose of serving a non-renewable energy source. As discussed in Section 5.6 Energy, construction and O&M of the Proposed Project would utilize a relatively small amount of energy and fossil fuels, while increasing the electrical system capability for future uses of renewable energy within the region. Therefore, with respect to adverse environmental impacts resulting from wasteful, inefficient, or unnecessary consumption of energy resources, the Proposed Project would have a less-than-significant impact.

1.7.6 Geology, Soils, and Paleontological Resources

While the Proposed Project would be susceptible to earthquake forces and liquefaction, it would be designed to be consistent with CPUC General Order 95 and the California Building Code, which would ensure adequate service and safety of persons engaged in the construction, O&M, or use of the Proposed Project and the public in general. Although the Proposed Project is within

2.5 miles of subsidence-prone areas, it would not involve the permanent withdrawal of groundwater or extraction of oil and gas, and thus would not be expected to result in subsidence. While there are no documented paleontological resources within the Proposed Project area, fossils have been uncovered within 3 miles of the Proposed Project, and the Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) underlying the Proposed Project have the potential to yield fossils. As a result, construction activities involving trenching or excavation have the potential to uncover fossils. Implementation of LSPGC's APMs GEO-1, PALEO-1, and PALEO-2 and PG&E's CMs GEO-1, PALEO-1, and PALEO-2 would ensure the Proposed Project's impacts to geology, soils, and paleontological resources are less than significant.

1.7.7 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions generated during construction and O&M would result in a less-than-significant impact to climate change. As described in Section 5.8 Greenhouse Gas Emissions, the Proposed Project would have less-than-significant impacts from GHGs based on BAAQMD and Sacramento Metropolitan Air Quality Management District GHG thresholds. Additionally, the Proposed Project would ultimately increase the efficiency of integrating existing and future renewable energy projects, resulting in beneficial air quality impacts. LSPGC's APM GHG-1 and PG&E's CM GHG-1 would be implemented to ensure that impacts would be less than significant.

1.7.8 Hazards, Hazardous Materials, and Public Safety

As discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety, the Proposed Project would not significantly increase hazards to the public. The proposed LSPGC Telecommunications Line would be routed underground along Halsey Way adjacent to St. Peter Martyr School; however, use of hazardous materials or substances is not anticipated during installation of the telecommunications line. Although the Proposed Project would be within the airport influence area of the Travis Air Force Base, the Proposed Project would not create a physical hazard to flight as heights of structures along the transmission lines would be less than 200 feet above ground level. The Proposed Project would not be on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The Proposed Project would include design specifications and O&M procedures to minimize potential impacts to hazards, hazardous materials, and public safety. As a result, impacts would be less than significant, and LSPGC's APMs HAZ-1, BIO-3, PUB-1, and FIRE-1 and PG&E's CMs HAZ-1, HAZ-2, and HAZ-3 would be implemented to ensure impacts would be less than significant.

1.7.9 Hydrology and Water Quality

As described in Section 5.10 Hydrology and Water Quality, the Proposed Project is not expected to violate any water quality standards or waste discharge requirements. LSPGC would adhere to the requirements of the Construction General Permit, Stormwater Pollution Prevention Plan, and a Hazardous Materials Management Plan to ensure compliance with water quality objectives and waste discharge requirements and reduce the likelihood of pollutants discharging to receiving waters, including wetlands. The in-water components associated with the proposed LSPGC 230 kV Transmission Line would require LSPGC to obtain necessary permits that would require additional measures to avoid and minimize potential impacts to water quality. It is not

anticipated that the Proposed Project would have a significant impact on groundwater resources, and no substantial changes to the existing drainage pattern would occur. Compliance with existing laws, ordinances, regulations, and standards would ensure any impacts to hydrology and water quality within the Proposed Project area would be less than significant. LSPGC's APMs HYD-1, BIO-3, BIO-22, BIO-23, and GEO-1 and PG&E's CMs HYD-1 and HYD-2 would be implemented to ensure that impacts would be less than significant.

1.7.10 Land Use and Planning

The Proposed Project would not divide any established communities. The proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection would be inconsistent with the BCDC Suisun Marsh Protection Plan policy that requires that utility corridors be located 0.5 mile from the marsh. The proposed LSPGC 230 kV Submarine Segment would be located in the Primary Management Area of the Suisun Marsh Protection Plan and would be required to receive a Major Permit from BCDC. The policy inconsistency would be addressed during the BCDC permitting process. The proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection would be located within 0.5 mile of the marsh; however, the Proposed Project would be consistent with Solano County's Suisun Marsh Local Protection Plan. The Solano County General Plan's Land Use Element and Suisun Marsh LPP allows for utility facilities and infrastructure within the Secondary Management Area if a Marsh Development Permit is obtained. However, the CPUC has sole and exclusive state jurisdiction over the siting and design of the LSPGC and PG&E Proposed Project components pursuant to CPUC GO 131-D, Section XIV.B. Thus, local permitting is pre-empted by the state. Consequently, public utilities are directed to consider the Suisun Marsh LPP, but the regulations are not applicable. As a result, impacts would be less than significant.

1.7.11 Mineral Resources

The proposed LSPGC 230 kV Submarine Segment would cross the San Francisco Bay and Delta Sand Mining Project's sand and gravel dredging operation. As a result, Proposed Project construction may temporarily interfere with the dredging operation while the submarine cables are being installed. LSPGC is currently working with the sand mining easement holder to obtain the necessary approval to complete the installation of the proposed LSPGC 230 kV Submarine Segment. To reduce the potential impacts associated with construction, LSPGC has designed the 230 kV Submarine Segment to minimize the crossing length within the mine and would be required to obtain a lease agreement and a lease encumbrance permit/agreement from the CSLC for encumbering on the existing mining lease. Through these permit processes, additional avoidance and minimization measures may be identified to further reduce the potential impacts. As a result, the planned construction activities would be coordinated with the CSLC and the current mining lease owner, and the loss of availability of sand and gravel would be less than significant.

1.7.12 Noise

Proposed Project construction would temporarily increase noise levels; however, construction would not have the potential to generate significant short-term groundborne vibration or groundborne noise at the nearest sensitive receptors. The proposed LSPGC Collinsville Substation would be below Solano, Sacramento, and Contra Costa counties' exterior noise standards of 55 A-weighted decibels (dBA) L50 and 50 dBA L50 during daytime and nighttime

hours, respectively. Construction- and operations-related vibrations would not be noticeable at the nearest sensitive receptor. The Proposed Project site would be approximately 12 miles southeast of Travis Air Force Base and is not located within the vicinity of a private airstrip or within 2 miles of a public airport. Therefore, with respect to the generation of excessive groundborne vibration or noise levels and ambient noise levels in excess of established standards, the Proposed Project impacts would be less than significant.

1.7.13 Public Services

Construction and O&M of the Proposed Project would not adversely affect the operation of fire, police, or emergency services or create demand for additional services. It is not anticipated that Proposed Project construction would adversely affect the provision of services by schools, parks, or other public facilities in the Proposed Project vicinity. The proposed LSPGC Telecommunications Line would be routed underground along Halsey Way adjacent to St. Peter Martyr School; however, impacts would be less than significant with implementation of LSPGC's APM PUB-1, which would require that construction activities be coordinated with the school's administration. As a result, the Proposed Project would have a less than significant impact on public services.

1.7.14 Recreation

As discussed in Section 5.16 Recreation, the Proposed Project would not increase the use of existing neighborhood and regional parks such that physical deterioration of the parks would occur. In addition, the Proposed Project would not include any recreational facilities; substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas; or damage any recreational trails or facilities. Although the in-river transition structure would cause temporary access restrictions during construction and permanent access restrictions during operation, the accessible in-water recreational area temporarily and permanently lost is insignificant when compared to the extent of the Delta and impacts would be less than significant. Implementation of LSPGC's APM REC-1 would ensure that impacts would be less than significant.

1.7.15 Transportation

The Proposed Project would not result in transportation impacts related to increased vehicle miles traveled and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). In addition, the Proposed Project would not result in any noticeable long-term or permanent increases in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, would not be a development project, and would not result in any land use changes. Neither the construction phase nor the O&M phase of the Proposed Project would generate any permanent traffic hazards. Implementation of LSPGC's APM TRA-1 would ensure that impacts would be less than significant.

1.7.16 Tribal Cultural Resources

As described in Section 5.18 Tribal Cultural Resources, no recorded tribal cultural resources (TCRs) are located within the Proposed Project's survey area. However, a TCR could be damaged or destroyed by ground-disturbing activities in the event that an unknown TCR is

located within an area subject to disturbance. The Proposed Project would comply with state regulations that protect TCRs, and LSPGC's APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3 would be implemented to ensure that impacts would be less than significant.

1.7.17 Utilities and Service Systems

As discussed in Section 5.19 Utilities and Service Systems, the Proposed Project would require the temporary use of utilities such as water, wastewater facilities, and electric power during construction, and runoff would be managed by a stormwater detention basin. Construction would generate solid waste that would be disposed of in a local landfill or another approved facility in accordance with applicable federal, state, and local laws. Based on the anticipated landfill capacity, enough capacity would be available to handle the disposal of waste generated by the Proposed Project during construction. Solid waste generated during O&M of the Proposed Project would be minimal due to the frequency and nature of maintenance activities. All non-hazardous solid waste generated during O&M would be disposed of in accordance with all applicable federal, state, and local laws and transported to an appropriate waste management facility. Therefore, the impact of activities associated with O&M for the Proposed Project would be less than significant. LSPGC's APM UTIL-1 would be implemented to ensure that impacts would be less than significant.

1.8 REMAINING ISSUES

As discussed in the previous sections, no areas of controversy or public concern were identified, no significant impacts are expected as a result of the Proposed Project, and no major issues remain to be resolved.

CHAPTER 2 – INTRODUCTION

LS Power Grid California, LLC (LSPGC), a wholly owned subsidiary of LS Power that was established to own and operate transmission projects in California, is proposing the Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project). As required by the California Public Utilities Commission's (CPUC's) Guidelines for Energy Project Applications Requiring California Environmental Quality Act (CEQA) Compliance: Pre-Filing and Proponent's Environmental Assessments (PEAs) and the CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.), this section defines the objectives, purpose, and need for the Proposed Project. Additional information regarding the Proposed Project's purpose and need is provided in LSPGC's Certificate of Public Convenience and Necessity (CPCN) application to the CPUC in accordance with CPUC General Order (GO) 131-D.

2.1 PROJECT BACKGROUND

2.1.1 Purpose and Need

The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The Proposed Project's purpose is to address multiple overloads on the 230 kV corridor between Contra Costa and Newark substations under normal (N-0), N-1, and N-2 contingency conditions[1] and provide additional supply from the 500 kV system into the northern Greater Bay Area to increase reliability to the area and advance additional renewable generation in the northern area (California Independent System Operator [CAISO] 2022a). The Proposed Project would achieve the following:

- Ensure the reliability of a major portion of the CAISO-controlled grid.
- Provide cost-effective voltage control and other electric transmission grid benefits.
- Support the provision of safe, reliable, and adequate electricity service to the Pacific Gas and Electric Company (PG&E) service territory.
- Facilitate the importation and use of renewable electricity to fulfill California's energy polices and goals by ensuring reliable operation of the grid.

These benefits would be accomplished through the construction of the proposed Collinsville 500/230 kV Substation and a proposed approximately 6-mile-long double-circuit 230 kV line from the proposed LSPGC Collinsville Substation to PG&E's existing Pittsburg Substation. The new 230 kV transmission line would include the following:

- An approximately 1-mile-long overhead transmission line segment that would connect the proposed LSPGC Collinsville Substation to a proposed in-river transition structure (on the north side of the Sacramento River).

[1] Normal or N-0 conditions refers to when the electric system is functioning normally and is not experiencing outages. N-1 contingency refers to the first contingency, or an outage occurring to a single component (e.g., a transformer or transmission circuit) of the electric system. N-2 contingency refers to when an outage occurs to two components of the electric system (CAISO 2021).

- One steel in-river transition structure to transition the overhead conductors to submarine cables on the northern edge of the Sacramento River.

- Approximately six 4.5-mile-long submarine cables installed approximately 6 to 15 feet below the sediment surface.

- An onshore underground utility vault near PG&E's existing Pittsburg Substation to transition the submarine cables to underground cables.

- Approximately two riser poles adjacent to PG&E's existing Pittsburg Substation that would transition the underground cables to overhead lines before connecting to the Pittsburg Substation.

PG&E's existing Vaca Dixon-Tesla 500 kV Line would connect to the proposed LSPGC Collinsville Substation through two new single-circuit 500 kV transmission line segments. In post-Proposed Project configuration, series capacitors may need to be added/modified to ensure that no 500 kV line section is compensated above 75 percent to meet PG&E protection standards and that the overall compensation on Vaca Dixon-Tesla 500 kV Line would remain the same as the existing system at 75 percent. Series capacitors would be installed on the Collinsville-Tesla 500 kV Line at the proposed LSPGC Collinsville Substation, and PG&E would adjust the existing series capacitors at PG&E's existing Vaca Dixon Substation to meet these two requirements. The interconnection of the existing PG&E lines would be the responsibility of PG&E. LSPGC would be responsible for the installation of dead-end structures near the proposed LSPGC Collinsville Substation to facilitate interconnection of the 500 kV line segments. In addition, PG&E would upgrade the equipment that is currently limiting the line rating (CAISO 2022b). An overhead 12 kV electric distribution line would be installed from an existing PG&E distribution line to provide backup power for the proposed LSPGC Collinsville Substation.

A telecommunications line would be constructed by one third party or more. Two new underground fiber optic cables would be installed generally within existing streets from a residential neighborhood located east of PG&E's existing Pittsburg Substation to a new fiber hub installed adjacent to PG&E's existing Pittsburg Substation and the new utility vault associated with the proposed underground segment of the new 230 kV transmission line. CAISO is responsible for planning and managing the high-voltage transmission network (transmission grid) for approximately 80 percent of California, including the service territory of PG&E, where the Proposed Project is located. CAISO undertakes an annual transmission planning process to develop a transmission plan that identifies potential transmission system problems, such as thermal overloading and voltage and frequency variations outside acceptable limits, over a 10-year planning horizon. CAISO considers additional transmission facilities and/or changes in operation that would solve the problems, allowing the transmission grid to meet reliability objectives and criteria. In addition, CAISO evaluates the transmission grid's ability to help meet certain California government policy objectives, including the Renewables Portfolio Standard (RPS). Lastly, the CAISO transmission planners and economists examine whether transmission upgrades could save ratepayers money by reducing electric grid transmission congestion and allowing the use of lower-cost generation (CAISO 2022b).

The Proposed Project was identified by CAISO (2022) in its 2021-2022 Transmission Plan as a policy upgrade to address transmission constraints identified in the policy on-peak deliverability assessment in the northern Greater Bay Area, as well as to allow advancement of renewable energy generation.

In its 2021-2022 planning cycle, CAISO evaluated upgrades needed to successfully meet California's policy goals, in addition to examining conventional grid reliability requirements and projects that can bring economic benefits to consumers. CAISO's analysis, conducted through an open and stakeholder-inclusive planning process, led to the identification of the need for the Proposed Project as part of a comprehensive solution (relying in part on other upgrades already identified to meet reliability needs notwithstanding state policy objectives) to mitigate thermal overloading of the Cayetano-North Dublin 230 kV Line under N-2 conditions, Lone Tree-USWP-JRW-Cayetano 230 kV Line under N-0 conditions, and Las Positas-Newark 230 kV Line under N-2 conditions, which are limiting the deliverability of renewable and energy storage portfolio resources (CAISO 2022b).

Following approval of the 2021-2022 Transmission Plan, in accordance with the Federal Energy Regulatory Commission's Order No. 1000 and the CAISO open access transmission tariff, the CAISO opened a competitive bid solicitation window in April 2022, which provided project sponsors the opportunity to submit proposals to finance, construct, own, operate, and maintain the Proposed Project. The CAISO specified an in-service date for the Proposed Project of June 2028.

In January 2023, LSPGC was selected by CAISO as the approved project sponsor to finance, construct, own, operate, and maintain the Proposed Project. CAISO selected LSPGC's proposal from a total of four validated proposals. The CAISO selection report stated that LSPGC and its team are qualified, experienced, and have the financial resources to capably, cost-effectively, and reliably license, finance, construct, operate, and maintain the Proposed Project at the lowest cost and by the specified in-service date (CAISO 2023).

In April 2024, CAISO's 2023-2024 Transmission Plan was approved, and it identified the Collinsville 230 kV Reactor Project as a needed near-term, policy-driven upgrade to the proposed Collinsville – Pittsburg 230 kV transmission lines. The Collinsville 230 kV Reactor Project includes two 10-ohm series reactors per phase, to be located within the proposed LSPGC Collinsville Substation fence line, and would be constructed concurrently with the Collinsville 500/230 kV Substation Project. As such, LSPGC included the components associated with the Collinsville 230 kV Reactor Project as part of the Collinsville Substation 500/230 kV Substation Project's PEA. However, because the Collinsville 230 kV Reactor Project is considered a separate project by CAISO (approved in different Transmission Plans) it would be processed through a separate GO 131-D application and proceeding with the CPUC but would be included in the CPUC's CEQA analysis for the larger Collinsville 500/230 kV Substation Project.

2.1.2 Project Objectives

The Proposed Project was selected because it best meets all of the Proposed Project objectives and minimizes environmental impacts. The Proposed Project objectives are as follows:

- Meet CAISO's policy-driven need for the Proposed Project to address a number of identified transmission constraints on the Cayetano-North Dublin 230 kV Line, Lone Tree-USWP-JRW-Cayetano 230 kV Line, and Las Positas-Newark 230 kV Line and provide an additional supply from the 500 kV system into the northern Greater Bay Area.

- Meet the functional specifications set forth by CAISO for the Collinsville 500/230 kV Substation and 230 kV transmission lines located near or adjacent to the existing PG&E Vaca Dixon-Tesla 500 kV Line. Close proximity to the existing PG&E 500 kV transmission line corridor would reduce the length of the 500 kV transmission interconnection lines, thereby reducing the right-of-way (ROW) requirements and the potential for significant environmental impacts.

- Achieve commercial operation by June 2028 in order to address critical reliability issues within the transmission system, such as high voltage under non-peak conditions and voltage that varies significantly on a daily basis.

- Improve and maintain the reliability of the transmission grid by addressing overloads on the Cayetano-North Dublin 230 kV Line, Lone Tree-USWP-JRW-Cayetano 230 kV Line, and Las Positas-Newark 230 kV Line and increase deliverability of renewable power by building and operating a facility that would help keep transmission voltages within specified parameters, reduce transmission losses, increase reactive margin for the system bus, increase transmission capacity, provide a higher transient stability limit, increase damping of minor disturbances, and provide greater voltage control and stability.

- Facilitate deliverability of load from existing and proposed renewable generation projects in the northern Greater Bay Area and corresponding progress toward achieving California's RPS goals in a timely and cost-effective manner by California utilities.

- To the extent practicable, locate the Proposed Project on land that is or has previously been disturbed, is in an existing ROW or adjacent to existing utility uses, or would otherwise minimize environmental impacts in a manner consistent with prudent transmission planning.

- Construct and operate the facility with safety as a top priority.

- Meet the Proposed Project need in a safe, cost-effective manner and consistent with LSPGC's cost containment agreement in the Approved Project Sponsor Agreement.

- Comply with and assist CAISO in meeting applicable Reliability Standards and Criteria developed by North American Electric Reliability Corporation, Western Electricity Coordinating Council, and CAISO.

- Design and construct the Proposed Project in conformance with LSPGC's standards, the National Electric Safety Code, and other applicable national and state codes and regulations.

2.1.3 Project Applicant(s)

The Proposed Project is proposed by LSPGC, a Delaware limited liability company established to own and operate transmission projects in California. LSPGC is an indirect subsidiary of LS Power Associates, L.P., which, together with its subsidiaries and affiliates, is generally known as LS Power. Since it was founded in 1990, LS Power has developed, constructed, managed, and acquired more than 47,000 megawatts of competitive power generation and 780 miles of transmission infrastructure.

The Proposed Project would be unmanned during normal operations. The Proposed Project would be operated by LS Power's 24-hour control center in Austin, Texas. Primary maintenance activities would be provided by LSPGC's local maintenance/technical staff and, as necessary, other existing LSPGC staff and trusted contractors for maintenance and emergency response. The Proposed Project would be incorporated into LSPGC's existing operations and maintenance (O&M) and compliance programs using experienced staff and trusted contractors to provide operational and cost efficiencies with reduced risks. The Proposed Project would also be monitored by the CAISO's control center in Folsom, California, and the CAISO would have operational control of the substation facility with authority to direct LS Power's control center.

LSPGC would be responsible for overseeing the assembly of construction and environmental teams that would implement and evaluate the Proposed Project's applicant-proposed measures (APMs). LSPGC maintains an environmental compliance management program to allow for implementation of the APMs to be monitored, documented, and enforced during each Proposed Project phase, as appropriate. All those contracted by LSPGC to perform this work would be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects.

Although PG&E is not an applicant in LSPGC's application for a CPCN, PG&E's scope of work is needed to connect the proposed LSPGC Collinsville Substation to PG&E's existing electrical grid. PG&E's interconnection facilities would be included in the CPUC's CEQA analysis, and impacts would be evaluated based on PG&E's Construction Measures (CMs). PG&E would be responsible for implementing its CMs during construction.

2.2 PRE-FILING CONSULTATION AND PUBLIC OUTREACH

2.2.1 Pre-Filing Consultation and Public Outreach

LSPGC met with several regulatory agencies and relevant stakeholders in the early planning stages of the Proposed Project to solicit input on Proposed Project design and potential resource and land use issues in the vicinity. Table 2-1: Summary of Pre-Filing Consultation and Public Outreach Meetings and Correspondence summarizes the agency meetings and correspondence that took place during the development of this PEA and the CPCN application.

Table 2-1: Summary of Pre-Filing Consultation and Public Outreach Meetings and Correspondence

Agency	Meeting Dates	Attendees	Summary of Discussions
City of Pittsburg	March 29, 2023	LSPGC and City of Pittsburg Officials	LSPGC presented the Proposed Project to the City of Pittsburg to begin the coordination process on leases as the Proposed Project traverses submerged lands owned by the City of Pittsburg. The City of Pittsburg strongly opposed the proposed in-river transition structures near the southern shore and required LSPGC to come up with a different engineering solution with minimal visual impact to the riverfront.
	September 28, 2023	LSPGC and City of Pittsburg Officials	LSPGC presented the underground transition from submarine cable to underground cable into PG&E's existing Pittsburg Substation. The City of Pittsburg preferred the new proposed solution to the in-water transition structures and said they supported the Proposed Project moving forward.
CPUC	February 24, 2023	CPUC Staff and LSPGC Staff	LSPGC described the Proposed Project need and scope, the preliminary Proposed Project location, potential public agency consultations, and the overall Proposed Project schedule. LSPGC provided responses to CPUC questions relating to the Proposed Project construction schedule, additional agency outreach, level of CEQA review, and anticipated permits.
PG&E	Initial Meeting March 2, 2023, Kickoff in August with Biweekly Meetings starting in August	PG&E Staff (Substation and Transmission, Land and Environmental, etc.), LSPGC Staff	Initial, kickoff, and biweekly meetings were held to discuss connection to the PG&E regional electrical transmission system, facility studies, GO 131-D compliance and interconnection coordination related to the Vaca Dixon-Tesla 500 kV Transmission Line and the Pittsburg Substation.
Native American Heritage Commission (NAHC)	Contacted on May 5, 2023	Not Applicable	Chronicle Heritage contacted the NAHC on May 5, 2023 to request a records search of the Area of Potential Effect in the Sacred Lands File (SLF). The NAHC responded on June 1, 2023 indicating that the SLF search results were negative and provided a list of contacts representing eight tribes with traditional affiliations to the area. On June 23, 2023, Chronicle Heritage sent letters to the tribal contacts to notify representatives of the Proposed Project and to request any information of known Native American cultural resources. Two response were received in August 2023.

Agency	Meeting Dates	Attendees	Summary of Discussions
Interagency	June 8, 2023	Staff from the State Water Resources Control Board (SWRCB), California Department of Fish and Wildlife (CDFW), CPUC, Regional Water Quality Control Board (RWQCB), United States (U.S.) Army Corps of Engineers (USACE), Office of Historic Preservation, National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries), San Francisco Bay Conservation and Development Commission (BCDC), LSPGC, and Insignia Environmental (Insignia)	LSPGC described the Proposed Project construction methods, potential impacts, technical reports, and the overall Proposed Project schedule. LSPGC answered agency questions relating to in-water construction methods and scheduling. NOAA Fisheries staff advised a June 15 to November 30 work window for submarine cable installation to avoid impacts to special-status salmonids. USACE staff requested that LSPGC perform a scour analysis because of concerns that the submarine cable may become exposed due to scour.
California State Lands Commission (CSLC)	July 25, 2023	Staff from the CSLC, LSPGC, and Insignia	LSPGC presented the Proposed Project to the CSLC, and LSPGC and answered CSLC questions related to in-water construction methods and structures. CSLC staff shared concerns related to tribal consultation and impacts to aesthetics, recreation, and navigation associated with the in-water transition structures. The CSLC requested that environmental justice, climate change, and sea level rise analyses be included in the lease application.
Central Valley Flood Protection Board (CVFPB)	August 2, 2023	Staff from the CVFPB, LSPGC, and Insignia	LSPGC presented the Proposed Project to the CVFPB, and the CVFPB answered LSPGC questions related to permitting and work windows. CVFPB staff stated that the San Joaquin River and Sacramento River confluence would require permit review and approval for the Sacramento River on the Solano County side. The CVFPB did not relay any concerns during this meeting.

Agency	Meeting Dates	Attendees	Summary of Discussions
USACE	August 23, 2023	Staff from the USACE, LSPGC, and Insignia	LSPGC presented the Proposed Project to the USACE, and LSPGC answered USACE questions related to in-water construction methods. USACE staff shared concerns relating to the depth at which the submarine cables would be buried. USACE staff stated that the cable would need to be buried 15 feet below the surface for safety in the navigation channel. USACE requested that the longfin smelt (*Spirinchus thaleichthys*) be considered in consultations.
U.S. Coast Guard (USCG)	August 25, 2023	Staff from the USCG, LSPGC, and Insignia	LSPGC presented the Proposed Project to the USCG, and LSPGC answered USCG questions related to waterway restrictions and in-water construction schedules. USCG staff indicated that coordination between contractors and USCG groups (including the San Francisco Waterways branch and Vessel Traffic Service) should occur during submarine cable installation. USCG staff shared concerns related to the lighting and/or marking of in-water transition structures. USCG staff requested that LSPGC submit a Navigational Study to the USCG.

Coordination with these agencies and stakeholders would continue through the Proposed Project's planning process, and applications for ministerial and discretionary permits would be completed as necessary.

No local discretionary (e.g., land use) permits are required because the CPUC has preemptive jurisdiction over the siting, construction, and O&M of LSPGC and PG&E facilities in California. The CPUC's authority does not preempt special districts, such as Air Quality Management Districts, other state agencies, or the federal government. LSPGC and PG&E would obtain all ministerial permits (i.e., grading and encroachment permits) from local jurisdictions, and the CPUC's GO 131-D requires LSPGC and PG&E to comply with local building, design, and safety standards to the greatest degree feasible to minimize Proposed Project conflicts with local conditions. LSPGC and PG&E would obtain permits, approvals, and licenses and would participate in reviews and consultations as needed with federal, state, and local agencies. No developments that would coincide or conflict with Proposed Project activities have been identified.

2.2.2 Records of Consultation and Public Outreach

A summary of LSPGC's consultations is provided in Table 2-1: Summary of Pre-Filing Consultation and Public Outreach Meetings and Correspondence. To date, LSPGC has not conducted any open houses or otherwise performed outreach to the public at large.

Throughout the approval process, LSPGC would keep area residents and property owners, government officials, Native American tribes, and interested parties informed about the scope of the Proposed Project through printed materials, one-on-one meetings, and presentations to local organizations.

During construction, LSPGC would work to minimize disruptions from construction traffic and limit dust and noise. LSPGC would continually communicate its construction plans to government agencies, including the CPUC, Contra Costa County, Sacramento County, Solano County, City of Pittsburg, local Native American tribes, and any other applicable government officials.

2.3 ENVIRONMENTAL REVIEW PROCESS

2.3.1 Environmental Review Process

Public utilities are required to obtain a permit from the CPUC for construction of certain specified infrastructure listed under Public Utilities Code Section 1001. The CPUC reviews permit applications under two concurrent processes: an environmental review pursuant to the CEQA, and the review of project need and costs pursuant to Public Utilities Code Section 1001 et seq. and CPUC GO 131-D (CPCN or Permit to Construct). Table 3-13: Permitting Requirements and Processes in Chapter 3 – Project Description provides the timing of the review process of all applicable permits.

2.3.2 California Environmental Quality Act Review Process

The CPUC conducts its environmental evaluation in accordance with both CEQA and its own environmental rules. CEQA provides guidelines to ensure a thorough environmental evaluation. Specifically, it requires the examination of particular environmental issues such as water and air quality; greenhouse gases; noise; land uses; agricultural, biological, mineral, cultural, and tribal resources; public services; recreation; population and housing; transportation; and aesthetics.

CEQA and the CEQA Guidelines (Title 14 of the CCR, Section 15000, et seq.) require that an environmental impact report describe a reasonable range of alternatives to a project or the location of the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. CEQA Guidelines Section 15126.6(d) requires that sufficient information about each alternative be included to allow meaningful evaluation and analysis.

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." The CEQA Guidelines further define three types of environmental effects (or impacts): direct or primary effects that are caused by a project and occur at the same time and place, indirect or secondary effects that are reasonably foreseeable and caused by a project but occur at a different time or place, and cumulative effects. If it is determined that a project would cause a significant direct, indirect, or cumulative impact (or contribute considerably to an existing cumulative impact), CEQA requires that the analysis disclose such impacts and identify feasible mitigation measures for each significant environmental effect identified. This PEA analyzes the potential environmental impacts associated with the construction and the O&M of the Proposed Project.

A summary of state and federal agencies that may have discretionary permitting authority over aspects of the Proposed Project is provided in Table 2-2: State and Federal Agencies with Potential Permitting Authority. This table also contains a list of permits that LSPGC anticipates would be obtained from local agencies to construct the Proposed Project. A summary of results of preliminary outreach with these agencies is provided in Table 2-1: Summary of Pre-Filing Consultation and Public Outreach Meetings and Correspondence.

2.3.3 Pre-Filing CEQA Coordination

LSPGC and the CPUC held a Pre-Filing Consultation meeting on February 24, 2023 to discuss the Proposed Project. The agenda for the meeting included: introductions, the Proposed Project background/description, and the Proposed Project schedule. During the meeting, LSPGC shared a summary of the Proposed Project and a preliminary map of the Proposed Project area. Also discussed was the Proposed Project's required in-service date of June 2028. In addition, LSPGC provided written responses to CPUC questions relating to construction milestones, agency outreach, anticipated permits, and potential Proposed Project alternatives, which are provided in Attachment 2-A: Construction Milestone Responses.

Table 2-2: State and Federal Agencies with Potential Permitting Authority

Agency	Permit	Trigger
Federal		
Federal Aviation Administration	Determination of No Hazard	Potential obstruction of air space
State Historic Preservation Office	Section 106 Consultation	Ground-disturbing activities in an area with the potential for cultural resources
NOAA Fisheries – West Coast Region	Section 7 Consultation	Activities occurring within waters of the U.S. that have the potential to impact species protected by the federal Endangered Species Act (FESA) or Essential Fish Habitat protected under the Magnuson-Stevens Fishery Conservation and Management Act
United States Fish and Wildlife Service – Region 8	Section 7 Consultation	Activities occurring within critical habitat or with the potential to impact species protected by the FESA
USACE	Section 10 Permit	Construction within navigable waters of the U.S.
	Section 404 Permit	Discharge or placement of fill within waters of the U.S.
	Section 408 Letter of Permission	Permanent or temporary alteration or use of a USACE Civil Works project
State		
CDFW – Bay Delta Region	Section 2081 Incidental Take Permit	Potential take of California Endangered Species Act-listed species (Delta smelt and longfin smelt).
	Section 1600 Lake and Streambed Alteration Agreement	Alteration of a streambed
CPUC	CPCN	Construction of an electric transmission line designed for operation at 200 kV or higher
	Public Utilities Code Section 851 Authorization	Easements on the existing Pittsburg Substation property between LSPGC and PG&E.
CSLC	Lease Agreement	Activities proposed on tidelands and submerged lands owned by the State of California
	Encumbrance Permit/Agreement	Encumbrance on an existing CSLC lease agreement
CVFPB	Encroachment Permit	Construction within or modification of a flood control waterway
San Francisco BCDC	Major Permit	Work that is more extensive than a minor repair or improvement occurring within the Primary Management Area of the Suisun Marsh

Agency	Permit	Trigger
SWRCB	National Pollutant Discharge Elimination System Construction General Permit	Construction activities resulting in the disturbance of 1 or more acre of land
	Section 401 Water Quality Certification	Activities that require a federal authorization, are located in the jurisdiction of more than on RWQCB and may result in impacts to waters of the U.S.
Regional/Local		
Solano County	Encroachment Permit	Construction activities within Solano County ROW
	Grading Permit	Grading activities in Solano County
Contra Costa County	Encroachment Permit	Construction activities within Contra Costa County ROW
City of Pittsburg	Submerged Lands Lease	Activities proposed on tidelands and submerged lands owned by the City of Pittsburg
	Encroachment Permit	Construction activities within City of Pittsburg ROW

2.4 DOCUMENT ORGANIZATION

2.4.1 PEA Organization

In accordance with the CPUC PEA Checklist, Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-Filing Proponent's Environmental Assessments, updated November 2019, the Proposed Project PEA is divided into nine sections as follows:

- **Chapter 1 – Executive Summary.** This chapter provides a Proposed Project summary, land ownership and ROW requirements, areas of controversy, summary of impacts, summary of alternatives, and a pre-filing consultation, and public outreach summary.

- **Chapter 2 – Introduction.** This chapter provides a detailed description of the Proposed Project's background, pre-filing consultation and public outreach, environmental review process, and document organization.

- **Chapter 3 – Project Description.** This chapter provides a detailed description of the Proposed Project overview and components; existing and proposed system; land ownership, ROWs, and easements; construction, construction workforce, equipment, traffic and schedule; post-construction; O&M; decommissioning; anticipated permits and approvals; LSPGC's APMs; PG&E's CMs; and Proposed Project description graphics, mapbook, and geographic information service (GIS) requirements.

- **Chapter 4 – Description of Alternatives.** This chapter describes the Proposed Project alternatives considered, the No Project alternative, and rejected alternatives.

- **Chapter 5 – Environmental Impact Assessment.** This chapter includes a description of the environmental setting, regulatory setting, and impact analysis for each resource area. The following resource areas are discussed in this chapter:

    - 5.1 Aesthetics
    - 5.2 Agriculture and Forestry Resources
    - 5.3 Air Quality
    - 5.4 Biological Resources
    - 5.5 Cultural Resources
    - 5.6 Energy
    - 5.7 Geology, Soils, and Paleontological Resources
    - 5.8 Greenhouse Gas Emissions
    - 5.9 Hazards, Hazardous Materials, and Public Safety
    - 5.10 Hydrology and Water Quality
    - 5.11 Land Use and Planning
    - 5.12 Mineral Resources
    - 5.13 Noise
    - 5.14 Population and Housing
    - 5.15 Public Services
    - 5.16 Recreation
    - 5.17 Transportation

  - 5.18 Tribal Cultural Resources
  - 5.19 Utilities and Service Systems
  - 5.20 Wildfire
  - 5.21 Mandatory Findings of Significance

- **Chapter 6 – Comparison of Alternatives.** The chapter compares the ability of each alternative described in Chapter 4 – Description of Alternatives against the Proposed Project in terms of its ability to avoid or reduce potentially significant impacts, and it also provides a ranking of the alternatives in order of environmental superiority.

- **Chapter 7 – Cumulative and Other CEQA Considerations.** This chapter discusses the cumulative and growth-inducing impacts from the Proposed Project.

- **Chapter 8 – List of Preparers.** This chapter provides a list of authors and reviewers for each chapter/section of the PEA, as well as their organizations and qualifications.

- **Chapter 9 – References.** This chapter provides a list of references.

Table 2-3: CPUC PEA Checklist identifies the section of the PEA where each item in the CPUC PEA Checklist has been addressed.

Table 2-3: CPUC PEA Checklist

CPUC PEA Checklist	PEA Section, Table, or Figure Number
1.0: Executive Summary	Chapter 1
1.1: Proposed Project Summary. Provide a summary of the proposed project and its underlying purpose and basic objectives.	1.1
1.2: Land Ownership and Right-of-Way Requirements. Provide a summary of the existing and proposed land ownership and rights-of-way for the proposed project.	1.2
1.3: Areas of Controversy. Identify areas of anticipated controversy and public concern regarding the project.	1.3 Also refer to Chapter 2
1.4: Summary of Impacts a) Identify all impacts expected by the Applicant to be potentially significant. Identify and discuss Applicant-Proposed Measures here and provide a reference to the full listing of Applicant-Proposed Measures provided in the table described in Section 3.11 of this PEA Checklist. b) Identify any significant and unavoidable impacts that may occur.	1.4 Also refer to Chapters 3 and 5
1.5: Summary of Alternatives. Summarize alternatives that were considered by the Applicant and the process and criteria that were used to select the proposed project.	1.5 Also refer to Chapters 4 and 6
1.6: Pre-Filing Consultation and Public Outreach Summary. Briefly summarize Pre-filing consultation and public outreach efforts that occurred and identify any significant outcomes that were incorporated into the proposed project.	1.6 Also refer to Section 1.3 and Chapter 3
1.7: Conclusions. Provide a summary of the major PEA conclusions.	1.7 Also refer to Chapters 3
1.8: Remaining Issues. Describe any major issues that must still be resolved.	1.8
2.0: Introduction	Chapter 2
2.1: Project Background	2.1
2.1.1: Purpose and Need a) Explain why the proposed project is needed. b) Describe localities the proposed project would serve and how the project would fit into the local and regional utility system. c) If the proposed project was identified by the California Independent System Operator (CAISO), thoroughly describe the CAISO's consideration of the proposed project and provide the following information: i. Include references to all CAISO Transmission Planning Processes that considered the proposed project. ii. Explain if the proposed project is considered an economic, reliability, or policy-driven project or a combination thereof.	2.1.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
iii. Identify whether and how the Participating Transmission Owner recommended the project in response to a CAISO identified need, if applicable. iv. Identify if the CAISO approved the original scope of the project or an alternative and the rationale for their approval either for the original scope or an alternative. v. Identify how and whether the proposed project would exceed, combine, or modify in any way the CAISO identified project need. vi. If the Applicant was selected as part of a competitive bid process, identify the factors that contributed to the selection and CAISO's requirements for in-service date. d) If the project was not considered by the CAISO, explain why.	
(Natural Gas Storage Only) e) Provide storage capacity or storage capacity increase in billion cubic feet. If the project does not increase capacity, make this statement. f) Describe how existing storage facilities will work in conjunction with the proposed project. Describe the purchasing process (injection, etc.) and transportation arrangements this facility will have with its customers.	Not Applicable (N/A)
2.1.2: Project Objectives a) Identify and describe the basic project objectives. The objectives will include reasons for constructing the project based on its purpose and need (i.e., address a specific reliability issue). The description of the project objectives will be sufficiently detailed to permit CPUC to independently evaluate the project need and benefits to accurately consider them in light of the potential environmental impacts. The basic project objectives will be used to guide the alternatives screening process, when applicable. b) Explain how implementing the project will achieve the basic project objectives and underlying purpose and need. c) Discuss the reasons why attainment of each basic objective is necessary or desirable.	2.1.2
2.1.3: Project Applicant(s): Identify the project Applicant(s) and ownership of each component of the proposed project. Describe each Applicant's utility services and their local and regional service territories.	2.1.3
2.2: Pre-Filing Consultation and Public Outreach	2.2
2.2.1: Pre-filing Consultation and Public Outreach a) Describe all Pre-filing consultation and public outreach that occurred, such as, but not limited to: i. CAISO ii. Public agencies with jurisdiction over project areas or resources that may occur in the project area iii. Native American tribes affiliated with the project area iv. Private landowners and homeowner associations	2.2.1 Table 2-1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
v. Developers for large housing or commercial projects near the project area vi. Other utility owners and operators vii. Federal, state, and local fire management agencies b) Provide meeting dates, attendees, and discussion summaries, including any preliminary concerns and how they were addressed and any project alternatives that were suggested. c) Clearly identify any significant outcomes of consultation that were incorporated into the proposed project. d) Clearly identify any developments that could coincide or conflict with project activities (i.e., developments within or adjacent to a proposed ROW).	
2.2.2: Records of Consultation and Public Outreach. Provide contact information, notification materials, meeting dates and materials, meeting notes, and records of communication organized by entity as an Appendix to the PEA (Appendix G).	2.2.2
2.3: Environmental Review Process	2.3
2.3.1: Environmental Review Process. Provide a summary of the anticipated environmental review process and schedule.	2.3.1 Also refer to Chapter 3
2.3.2: CEQA Review a) Explain why CPUC is the appropriate CEQA Lead agency. b) Identify other state agencies and any federal agencies that may have discretionary permitting authority over any aspect of the proposed project. c) Identify all potential involvement by federal, state, and local agencies not expected to have discretionary permitting authority (i.e., ministerial actions). d) Summarize the results of any preliminary outreach with these agencies as well as future plans for outreach.	2.3.2 Table 2-1 Table 2-2
2.3.3: Pre-filing CEQA Coordination. Describe the results of Pre-filing coordination with CEQA agency (refer to CPUC's Pre-Filing Consultation Guidelines). Identify major outcomes of the Pre-filing coordination process and how the information was incorporated into the PEA, including suggestions on the type of environmental documents and joint or separate processes based on discussions with agency staff.	2.3.3
2.4: Document Organization	2.4
2.4: PEA Organization. Summarize the contents of the PEA and provide an annotated list of its sections.	2.4.1 Table 2-3
3.0: Project Description	Chapter 3
3.1 Project Overview a) Provide a concise summary of the proposed project and components in a few paragraphs. b) Described the geographical location of the proposed project (i.e., county, city, etc.). c) Provide an overview map of the proposed project location.	3.1 Figure 3-1 Also refer to Chapter 2 and Section 5.11

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.2: Existing and Proposed System	3.2
3.2.1: Existing System a) Identify and describe the existing utility system that would be modified by the proposed project, including connected facilities to provide context. Include detailed information about substations, transmission lines, distribution lines, compressor stations, metering stations, valve stations, nearby renewable generation and energy storage facilities, telecommunications facilities, control systems, SCADA systems, etc. b) Provide information on users and the area served by the existing system features. c) Explain how the proposed project would fit into the existing local and regional systems. d) Provide a schematic diagram of the existing system features. e) Provide detailed maps and associated GIS data for existing facilities that would be modified by the proposed project.	3.2.1 Figure 3-2 GIS data provided under separate cover
3.2.2: Proposed Project System a) Describe the whole of the proposed project by component, including all new facilities and any modifications, upgrades, or expansions to existing facilities and any interrelated activities that are part of the whole of the action. b) Clearly identify system features that would be added, modified, removed, disconnected and left in place, etc. c) Identify the expected capacities of the proposed facilities, highlighting any changes from the existing system. If the project would not change existing capacities, make this statement. For electrical projects, provide the anticipated capacity increase in amps or megawatts or in the typical units for the types of facilities proposed. For gas projects, provide the total volume of gas to be delivered by the proposed facilities, anticipated system capacity increase (typically in million cubic feet per day), expected customers, delivery points and corresponding volumes, and the anticipated maximum allowable operating pressure(s). d) Describe the initial buildout and eventual full buildout of the proposed project facilities. For example, if an electrical substation or gas compressor station would be installed to accommodate additional demand in the future, then include the designs for both the initial construction based on current demand and the design for all infrastructure that could ultimately be installed within the planned footprint of an electric substation or compressor station. e) Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. f) Provide information on users and the area served by the proposed system features, highlighting any differences from the existing system. g) Provide a schematic diagram of the proposed system features. h) Provide detailed maps and associated GIS data for proposed facilities that would be installed, modified, or relocated by the proposed project.	3.2.2 Figure 3-3 Attachment 3-A GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.2.3: System Reliability. Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. Clearly explain and show how the proposed project relates to and supports the existing utility systems.	3.2.3
3.2.4: Planning Area. Describe the system planning area served or to be served by the project. Clearly define the Applicant's term for the planning area (e.g., Electrical Needs Area or Distribution Planning Area).	3.2.4
3.3: Project Components	3.3
3.3.1: Preliminary Design and Engineering a) Provide preliminary design and engineering information for all above-ground and below-ground facilities for the proposed project. The approximate locations, maximum dimensions of facilities, and limits of areas that would be needed to construction and operate the facilities should be clearly defined. b) Provide preliminary design drawings for project features and explain the level of completeness (i.e., percentage). c) Provide detailed project maps (approximately 1:3,000 scale) and associated GIS data of all facility locations and boundaries with attributes and spatial geometry that corresponds to information in the Project Description.	3.3.1 Attachment 3-A Also refer to Section 3.3.4 Also refer to Attachment 5.1-A for visual simulations of the Proposed Project GIS data provided under separate cover
3.3.2: Segments, Components, and Phases a) Define all project segments, components, and phases for the proposed project. b) Provide the length/area of each segment or component, and the timing of each development phase. c) Provide an overview map showing each segment and provide associated GIS data (may be combined with other mapping efforts).	3.3.2 Figure 3-1 Table 3-1 GIS data provided under separate cover
3.3.3: Existing Facilities a) Identify the types of existing facilities that would be removed or modified by the proposed project (i.e., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems, etc.). b) Describe the existing facilities by project segment and/or component, and provide information regarding existing dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below- ground depths. d) Explain what would happen to the existing facilities. Would they be replaced, completely removed, modified, or abandoned? Explain why. e) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of existing facilities that would be installed or modified by the proposed project. f) Provide diagrams with dimensions representing existing facilities to provide context on how the proposed facilities would be different.	3.3.3 Table 3-2 Attachment 3-A Also refer to Sections 3.2.1 and 3.3.4.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
g) Briefly describe the surface colors, textures, light reflectivity, and any lighting of existing facilities.	
3.3.4: Proposed Facilities a) Identify the types of proposed facilities to be installed or modified by the proposed project (e.g., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems). b) Describe the proposed facilities by project segment and/or component, and provide information regarding maximum dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below- ground depths. d) Identify where facilities would be different (e.g., where unique or larger poles would be located, large guy supports or snub poles). e) Provide details about civil engineering requirements (i.e., permanent roads, foundations, pads, drainage systems, detention basins, spill containment, etc.). f) Distinguish between permanent facilities and any temporary facilities (i.e., poles, shoo-fly lines, mobile substations, mobile compressors, transformers, capacitors, switch racks, compressors, valves, driveways, and lighting). g) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of proposed facilities that would be installed or modified by the proposed project. h) Provide diagrams with dimensions representing existing facilities. i) Briefly describe the surface colors, textures, light reflectivity, and any lighting of proposed facilities.	3.3.4 Figure 3-4 Figure 3-5 Figure 3-6 Figure 3-7 Figure 3-8 Figure 3-9 Figure 3-10 Figure 3-11 Figure 3-12 Table 3-3 Table 3-4 Attachment 3-A Also refer to Sections 3.5, 3.5.5, and 3.5.6
3.3.5: Other Potentially Required Facilities a) Identify and describe in detail any other actions or facilities that may be required to complete the project. For example, consider the following questions: i. Could the project require the relocation (temporary or permanent), modification, or replacement of unconnected utilities or other types of infrastructure by the Applicant or any other entity? ii. Could the project require aviation lighting and/or marking? iii. Could the project require additional civil engineering requirements to address site conditions or slope stabilization issues, such as pads and retaining walls, etc.? b) Provide the location of each facility and a description of the facility.	3.3.5 Attachment 3-A Also refer to Section 3.5.3.3

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.3.6: Future Expansions and Equipment Lifespans a) Provide detailed information about the current and reasonably foreseeable plans for expansion and future phases of development. b) Provide the expected usable life of all facilities. c) Describe all reasonably foreseeable consequences of the proposed project (e.g., future ability to upgrade gas compressor station to match added pipeline capacity).	3.3.6
Required for Certain Project Types	
3.3.7: Below-ground Conductor/Cable Installations (as Applicable) a) Describe the type of line to be installed (e.g., single circuit crosslinked polyethylene-insulated solid-dielectric, copper-conductor cables). b) Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system) and provide the dimensions of the casing. c) Describe the types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	3.3.7 Also refer to Section 3.2.2.1.3 and 3.3.9
3.3.8: Electric Substations and Switching Stations (as Applicable) a) Provide the number of transformer banks that will be added at initial and full buildout of the substation. Identify the transformer voltage and number of each transformer type. b) Identify any gas insulated switchgear that will be installed within the substation. c) Describe any operation and maintenance facilities, telecommunications equipment, and SCADA equipment that would be installed within the substation.	3.3.8 Also refer to Section 3.3.9
3.3.9: Gas Pipelines (as Applicable). For each segment: a) Identify pipe diameter, number and length of exposed sections, classes and types of pipe to be installed, pressure of pipe, and cathodic protection for each linear segment. b) Describe new and existing inspection facilities (e.g., pig launcher sites). c) Describe system cross ties and laterals/taps. d) Identify the spacing between each valve station. e) Describe the compressor station, if needed, for any new or existing pipeline. f) Describe all pipelines and interconnections with existing and proposed facilities: i. Number of interconnections and locations and sizes; ii. All below-ground and above-ground installations; and iii. All remote facility locations for metering, telemetry, control.	N/A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.3.10: Gas Storage Facilities – Background and Resource Information (as Applicable) a) Provide detailed background information on the natural gas formation contributing to the existing or proposed natural gas facility, including the following: i. Description of overlying stratigraphy, especially caps ii. Description of production, injection, and intervening strata iii. Types of rock iv. Description of types of rocks in formation, including permeability or fractures v. Thickness of strata b) Provide a graphic and/or table showing formation thicknesses. c) Identify and describe any potential gas migration pathways, such as faults, permeable contacts, abandoned wells, underground water or other pipelines. d) Provide a summary and detailed cross-section diagrams of the geologic formations and structures of the oil/gas field or area. e) Provide the first well drilling and production history, abandonment procedures, inspections, etc. f) Describe production zones, including depth, types of formations, and characteristics of field/area. g) Describe the existing and proposed storage capacity and limiting factors, such as injection or withdrawal capacities. h) Describe existing simulation studies that were used to predict the reservoir pressure response under gas injection and withdrawal operations, and simulation studies for how the system would change as proposed. Provide the studies as a PEA Appendix. i) Provide the history of the oil/gas field or area.	N/A
3.3.11: Gas Storage Facilities – Well-Head Sites (as Applicable). Describe the location, depth, size and completion information for all existing, abandoned, proposed production and injection, monitoring, and test wells.	N/A
3.3.12: Gas Storage Facilities – Production and Injection (as Applicable) a) Provide the proposed storage capacity of production and injection wells. b) Provide production and injection pressures, depths, and rates. c) Provide production and injection cycles by day, week, and year. d) Describe existing and proposed withdrawal/production wells (i.e., size, depth, formations, etc.). e) Describe existing and proposed cushion gas requirements. f) Describe any cushion gas injection—formation the well is completed in (cushion gas formation), and injection information.	N/A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.3.13: Gas Storage Facilities – Electrical Energy (as Applicable). Describe all existing and proposed electric lines, telecommunications facilities, and other utilities/facilities (e.g., administrative offices, service buildings, and non-hazardous storage), and chemical storage associated with the proposed project.	N/A
3.3.14 Telecommunication Lines (as Applicable) a) Identify the type of cable that is proposed and length in linear miles by segment. b) Identify any antenna and node facilities that are part of the project. c) For below-ground telecommunication lines, provide the depth of cable and type of conduit. d) For above-ground telecommunication lines, provide: i. Types of poles that will be installed (if new poles are required) ii. Where existing poles will be used e) Any additional infrastructure (e.g., guy wires) or pole changes required to support the additional cable on existing poles	3.3.9 Attachment 3-A Also refer to Section 3.3.4.1.1
3.4: Land Ownership, Rights-of-Way, and Easements	3.4
3.4.1: Land Ownership. Describe existing land ownership where each project component would be located. State whether the proposed project would be located on property(ies) owned by the Applicant or if additional property would be required.	3.4.1
3.4.2: Existing Rights-of-Way or Easements a) Identify and describe existing rights-of-way (ROWs) or easements where project components would be located. Provide the approximate lengths and widths in each project area. b) Clearly state if project facilities would be replaced, modified, or relocated within existing ROWs or easements.	3.4.2
3.4.3: New or Modified Rights-of-Way or Easements a) Describe new permanent or modified ROWs or easements that would be required. Provide the approximate lengths and widths in each project area. b) Describe how any new permanent or modified ROWs or easements would be acquired. c) Provide site plans identifying all properties/parcels and partial properties/parcels that may require acquisition and the anticipated ROWs or easements. Provide associated GIS data. d) Describe any development restrictions within new ROWs or easements, e.g., building clearances and height restrictions, etc. e) Describe any relocation or demolition of commercial or residential property/structures that may be necessary.	3.4.3 GIS data provided under separate cover
3.4.4: Temporary Rights-of-Ways or Easements a) Describe temporary ROWs or easements that would be required to access project areas, including ROWs or easements for temporary construction areas (i.e., staging areas or landing zones).	3.4.4

CPUC PEA Checklist	PEA Section, Table, or Figure Number
b) Explain where temporary construction areas would be located with existing ROWs or easements for the project or otherwise available to the Applicant without a temporary ROW or easement. c) Describe how any temporary ROWs or easements would be acquired.	
3.5: Construction	3.5
3.5.1: Construction Access (All Projects)	3.5.1 Table 3-5 Attachment 3-A
3.5.1.1: Existing Access Roads a) Provide the lengths, widths, ownership details (both public and private roads), and surface characteristics (i.e., paved, graveled, bare soil) of existing access roads that would be used during construction. Provide the area of existing roads that would be used (see example in Table 3 below). b) Describe any road modifications or stabilization that would be required prior to construction, including on the adjacent road shoulders or slopes. Identify any roads that would be expanded and provide the proposed width increases. c) Describe any procedures to address incidental road damage caused by project activities following construction. d) Provide detailed maps and associated GIS data for all existing access roads.	3.5.1.1 Table 3-5 Attachment 3-A GIS data provided under separate cover
3.5.1.2: New Access Roads a) Identify any new access roads that would be developed for project construction purposes, such as where any blading, grading, or gravel placement could occur to provide equipment access outside of a designated workspace. b) Provide lengths, widths, and development methods for new access roads. c) Identify any temporary or permanent gates that would be installed. d) Clearly identify any roads that would be temporary and fully restored following construction. Otherwise, it will be assumed the new access road is a permanent feature. e) Provide detailed maps and associated GIS data for all new access roads.	3.5.1.2 Table 3-5 Attachment 3-A Also refer to Section 3.5.1.4 GIS data provided under separate cover
3.5.1.3: Overland Access Routes a) Identify any overland access routes that would be used during construction, such as where vehicles and equipment would travel over existing vegetation and where blading, grading, or gravel placement would occur. b) Provide lengths and widths for new access roads. c) Provide detailed maps and associated GIS data for all overland access routes.	3.5.1.3
3.5.1.4: Watercourse Crossings a) Identify all temporary watercourse crossings that would be required during construction. Provide specific methods and procedures for temporary watercourse crossings. b) Describe any bridges or culverts that replacement or installation of would be required for construction access.	3.5.1.4 Attachment 3-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
c) Provide details about the location, design and construction methods.	
3.5.1.5: Helicopter Access. If helicopters would be used during construction: a) Describe the types and quantities of helicopters that would be used during construction (e.g., light, medium, heavy, or sky crane), and a description of the activities that each helicopter would be used for. b) Identify areas for helicopter takeoff and landing. c) Describe helicopter refueling procedures and locations. d) Describe flight paths, payloads, and expected hours and durations of helicopter operation. e) Describe any safety procedures or requirements unique to helicopter operations, such as but not limited to obtaining a congested Area Plan from the Federal Aviation Administration (FAA).	3.5.1.5
3.5.2: Staging Areas (All Projects)	3.5.2
3.5.2.1: Staging Area Locations a) Identify the locations of all staging area(s). Provide a map and GIS data for each. b) Provide the size (in acres) for each staging area and the total staging area requirements for the project.	3.5.2.1 Table 3-6 Attachment 3-A GIS data provided under separate cover
3.5.2.2: Staging Area Preparation a) Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.). b) Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.). c) Describe how the staging area would be secured. Would a fence be installed? If so, describe the type and extent of the fencing. d) Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.). e) Describe any temporary lightning facilities for the site. f) Describe any grading activities and/or slope stabilization issues.	3.5.2.2 Also refer to Section 3.5.4.2
3.5.3: Construction Work Areas (All Projects)	3.5.3
3.5.3.1: Construction Work Areas a) Describe known work areas that may be required for specific construction activities (e.g., pole assembly, hillside construction) b) Describe the types of activities that would be performed at each work area. Work areas may include but are not necessarily limited to: I. Helicopter landing zones and touchdown areas II. Vehicle and equipment parking, passing, or turnaround areas III. Railroad, bridge, or watercourse crossings	3.5.3.1 Table 3-7 Attachment 3-A Also refer to Sections 3.5.1.4, 3.5.1.5, 3.5.3.1.5, 3.5.3.1.6, 3.5.3.1.7, 3.5.3.1.9, 3.5.5.2, and 3.5.5.4

CPUC PEA Checklist	PEA Section, Table, or Figure Number
IV. Temporary work pads for facility installation, modification, or removal V. Excavations and associated equipment work areas VI. Temporary guard structures VII. Pull-and-tension/stringing sites VIII. Jack and bore pits, drilling areas and pull-back areas for horizontal directional drills IX. Retaining walls	
3.5.3.2: Work Area Disturbance a) Provide the dimensions of each work area including the maximum area that would be disturbed during construction (e.g., 100 feet by 200 feet) (see example in Table 4 below). b) Provide a table with temporary and permanent disturbance at each work area (in square feet or acres), and the total area of temporary and permanent disturbance for the entire project (in acres).	3.5.3.2 Table 3-8 Attachment 3-A
3.5.3.3: Temporary Power. Identify how power would be provided at work area (i.e., tap into existing distribution, use of diesel generators, etc.). Provide the disturbance area for any temporary power lines.	3.5.3.3
3.5.4: Site Preparation (All Projects)	3.5.4
3.5.4.1: Surveying and Staking. Describe initial surveying and staking procedures for site preparation and access.	3.5.4.1
3.5.4.2: Utilities a) Describe the process for identifying any underground utilities prior to construction (i.e., underground service alerts, etc.). b) Describe the process for relocating any existing overhead or underground utilities that aren't directly connected to the project system. c) Describe the process for installing any temporary power or other utility lines for construction.	3.5.4.2 Also refer to Sections 3.5.3.3 and 3.5.5
3.5.4.3: Vegetation Clearing a) Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.). b) Provide calculations of temporary and permanent disturbance of each vegetation community and include all areas of vegetation removal in the GIS database. Distinguish between disturbance that would occur in previously developed areas (i.e., paved, graveled, or otherwise urbanized), and naturally vegetated areas. c) Describe how each type of vegetation removal would be accomplished. d) Describe the types of equipment that would be used for vegetation removal.	3.5.4.3 GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.4.4: Tree Trimming Removal a) For electrical projects, distinguish between tree trimming as required under CPUC General Order 95-D and tree removal. b) Identify the types, locations, approximate numbers, and sizes of trees that may need to be removed or trimmed substantially. c) Identify potentially protected trees that may be removed or substantially trimmed, such as but not limited to riparian trees, oaks trees, Joshua trees, or palm trees. d) Describe the types of equipment that would typically be used for tree removal.	3.5.4.4
3.5.4.5: Work Area Stabilization. Describe the processes to stabilize temporary work areas and access roads including the materials that would be used (e.g., gravel).	3.5.4.5 Also refer to Sections 3.5.9 and 5.10
3.5.4.6: Grading a) Describe any earth moving or substantial grading activities (i.e., grading below a 6-inch depth) that would be required and identify locations where it would occur. b) Provide estimated volumes of grading (in cubic yards) including total cut, total fill, cut that would be reused, cut that would be hauled away, and clean fill that would be hauled to the site.	3.5.4.5 Table 3-9
3.5.5: Transmission Line Construction (Above Ground)	3.5.5
3.5.5.1: Poles/Towers a) Describe the process and equipment for removing poles, towers, and associated foundations for the proposed project (where applicable). Describe how they would be disconnected, demolished, and removed from the site. Describe backfilling procedures and where the material would be obtained. b) Describe the process and equipment for installing or otherwise modifying poles and towers for the proposed project. Describe how they would be put into place and connected to the system. Identify any special construction methods (e.g., helicopter installation) at specific locations or specific types of poles/towers. c) Describe how foundations, if any, would be installed. Provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc. for foundations. Describe what would be done with soil removed from a hole/foundation site. d) Describe how the poles/towers and associated hardware would be delivered to the site and assembled. e) Describe any pole topping procedures that would occur, identify specific locations and reasons, and describe how each facility would be modified. Describe any special methods that would be required to top poles that may be difficult to access.	3.5.5.1 Table 3-10

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.5.2: Aboveground and Underground Conductor/Cable a) Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable. b) Identify where conductor/cable stringing/installation activities would occur. c) Provide a diagram of the general sequencing and equipment that would be used. d) Describe the conductor/cable splicing process. e) Provide the general or average distance between pull-and-tension sites. Describe the approximate dimensions and where pull-and tension sites would generally be required (as indicated by the designated work areas), such as the approximate distance to pole/tower height ratio, at set distances, or at significant direction changes. Describe the equipment that would be required at these sites. f) For underground conductor/cable installations, describe all specialized construction methods that would be used for installing underground conductor or cable. If vaults are required, provide their dimensions and location/spacing along the alignment. Provide a detailed description for how the vaults would be delivered to the site and installed. g) Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing).	3.5.5.2 Attachment 3-A Also refer to Sections 3.5.5.4 and 3.5.6
3.5.5.3: Telecommunications. Identify the procedures for installation of proposed telecommunication cables and associated infrastructure.	3.5.5.3 Attachment 3-A Also refer to Sections 3.5.5 and 3.5.6.4
3.5.5.4: Guard Structures. Identify the types of guard structures that would be used at crossings of utility lines, roads, railroads, highways, etc. Describe the different types of guard structures or methods that may be used (i.e., buried poles and netting, poles secured to a weighted object, bucket trucks, etc.). Describe any pole installation and removal procedures associated with guard structures. Describe guard structure installation and removal process and duration that guard structures would remain in place.	3.5.5.4 Also refer to Section 3.5.3.1.6
3.5.5.5: Blasting a) Describe any blasting that may be required to construct the project. b) If blasting may be required, provide a Blasting Plan that identifies the blasting locations; types and amounts of blasting agent to be used at each location; estimated impact radii; and, noise estimates. The Blasting Plan should be provided as an Appendix to the PEA. c) Provide a map identifying the locations where blasting may be required with estimated impact radii. Provide associated GIS data.	3.5.5.5

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.6 Transmission Line Construction (Below Ground)	3.5.6
3.5.6.1: Trenching a) Describe the approximate dimensions of the trench (e.g., depth, width). b) Provide the total approximate volume of material to be removed from the trench, the amount to be used as backfill, and any amount to subsequently be removed/disposed of offsite in cubic yards. c) Describe the methods used for making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.). d) Provide off-site disposal location, if known, or describe possible option(s). e) Describe if dewatering would be anticipated and if so, how the trench would be dewatered, the anticipated flows of the water, whether there would be treatment, and how the water would be disposed of. f) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed from trenching operations. g) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal. h) Describe the state of the ground surface after backfilling the trench. i) Describe standard Best Management Practices to be implemented.	3.5.6.1 Also refer to Section 3.5.10.2
3.5.6.2: Trenchless Techniques (Microtunnel, Jack and Bore, Horizontal Directional Drilling) a) Identify any locations/features for which the Applicant expects to use a trenchless (i.e., microtunneling, jack and bore, horizontal directional drilling) crossing method and which method is planned for each crossing. b) Describe the methodology of the trenchless technique. c) Provide the approximate location and dimensions of the sending and receiving pits. d) Describe the methodology of excavating and shoring the pits. e) Provide the total volume of material to be removed from the pits, the amount to be used as backfill, and the amount subsequently to be removed/disposed of offsite in cubic yards. f) Describe process for safe handling of drilling mud and bore lubricants. g) Describe the process for detecting and avoiding “fracturing-out” during horizontal directional drilling operations. h) Describe the process for avoiding contact between drilling mud/lubricants and stream beds. i) If engineered fill would be used as backfill, indicate the type of engineered backfill and the amount that would be typically used (e.g., the top 2 feet would be filled with thermal-select backfill). j) Describe if dewatering is anticipated and, if so, how the pits would be dewatered, the anticipated flows of the water, whether there would there be treatment, and how the water would be disposed of.	3.5.6.4

CPUC PEA Checklist	PEA Section, Table, or Figure Number
k) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants. Describe the process of disposing of any pre-existing hazardous waste that is encountered during excavation. l) Describe any standard BMPs that would be implemented for trenchless construction.	
3.5.7: Substation, Switching Stations, Gas Compressor Stations	3.5.7
3.5.7.1: Installation or Facility Modification. Describe the process and equipment for removing, installing, or modifying any substations, switching stations, or compressor stations including: a) Transformers/ electric components b) Gas components c) Control and operation buildings d) Driveways e) Fences f) Gates g) Communication systems (SCADA) h) Grounding systems	3.5.7.1 Also refer to Section 3.5.1.2
3.5.7.2: Civil Works. Describe the process and equipment required to construct any slope stabilization, drainage, retention basins, and spill containment required for the facility.	3.5.7.2 Attachment 3-A
3.5.8: Gas Pipelines	N/A
3.5.8.1: Gas Pipeline Construction. Describe the process for proposed pipeline construction including site development, trenching and trenchless techniques, pipe installation, and backfilling.	N/A
3.5.8.2: Water Crossings. Describe water feature crossings that will occur during trenching, the method of trenching through stream crossings, and the process for avoiding impacts to the water features required for pipeline construction. Identify all locations where the pipeline will cross water features. Cite to any associated geotechnical or hydrological investigations completed and provide a full copy of each report as an Appendix to the PEA.	N/A
3.5.8.3: Gas Pipeline Other Requirements a) Describe hydrostatic testing process including pressures, timing, source of flushing water, discharge of water. b) Describe energy dissipation basin, and the size and length of segments to be tested. c) Describe pig launching locations and any inline inspection techniques used during or immediately post construction.	N/A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.9: Gas Storage Facilities	N/A
3.5.9.1: Gas Storage Construction a) Describe the process for constructing the gas storage facility including constructing well pads and drilling wells. b) Describe the specific construction equipment that would be used, such as the type of drill rig (i.e., size, diesel, electric, etc.), depth of drilling, well-drilling schedule and equipment.	N/A
3.5.9.2: Drilling Muds and Fluids. Describe the use of any drilling muds, fluids, and other drilling materials. Provided estimated types and quantities.	N/A
3.5.10: Public Safety and Traffic Control (All Projects)	3.5.8
3.5.10.1: Public Safety a) Describe specific public safety considerations during construction and best management practices to appropriately manage public safety. Clearly state when and where they each safety measure would be applied. b) Identify procedures for managing work sites in urban areas, covering open excavations securely, installing barriers, installing guard structures, etc. c) Identify specific project areas where public access may be restricted for safety purposes and provide the approximate durations and timing of restricted access at each location.	3.5.8.1 Also refer to Chapter 5
3.5.10.2: Traffic Control a) Describe traffic control procedures that would be implemented during construction. b) Identify the locations, process, and timing for closing any sidewalks, lanes, roads, trails, paths, or driveways to manage public access. c) Identify temporary detour routes and locations. d) Provide a preliminary Traffic Control Plan(s) for the project.	3.5.8.2
3.5.10.3: Security. Describe any security measures, such as fencing, lighting, alarms, etc. that may be required. State if security personnel will be stationed at project areas and anticipated duration of security.	3.5.8.3
3.5.10.4: Livestock. Describe any livestock fencing or guards that may be necessary to prevent livestock from entering project areas. State if the fencing would be electrified and if so, how it would be powered.	3.5.8.4
3.5.11: Dust, Erosion, and Runoff Controls (All Projects)	3.5.9
3.5.11.1: Dust. Describe specific best management practices that would be implemented to manage fugitive dust.	3.5.9.1 Also refer to Section 5.3
3.5.11.2: Erosion. Describe specific best management practices that would be implemented to manage erosion.	3.5.9.2
3.5.11.3: Runoff. Describe specific best management practices that would be implemented to manage stormwater runoff and sediment.	3.5.9.3 Attachment 3-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.12: Water Use and Dewatering (All Projects)	3.5.10
3.5.12.1: Water Use. Describe the estimated volumes of water that would be used by construction activity (e.g., dust control, compaction, etc.). State if recycled or reclaimed water would be used and provide estimated volumes. Identify the anticipated sources where the water would be acquired or purchased. Identify if the source of water is groundwater and the quantity of groundwater that could be used.	3.5.10.1
3.5.12.2: Dewatering a) Describe dewatering procedures during construction, including pumping, storing, testing, permitted discharging, and disposal requirements that would be followed. b) Describe the types of equipment and workspace considerations to be used to dewater, store, transport, or discharge extracted water.	3.5.10.2
3.5.13: Hazardous Materials and Management (All Projects)	3.5.11
3.5.13.1: Hazardous Materials a) Describe the types, uses, and volumes of all hazardous materials that would be used during construction. b) State if herbicides or pesticides may be used during construction. c) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	3.5.11.1 Also refer to Section 5.9
3.5.13.2: Hazardous Materials Management a) Identify specific best management practices that would be followed for transporting, storing, and handling hazardous materials. b) Identify specific best management practices that would be followed in the event of an incidental leak or spill of hazardous materials. c) Provide a Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan as an Appendix to the PEA, if appropriate	3.5.11.2 Also refer to Section 5.9
3.5.14: Waste Generation and Management (All Projects)	3.5.12
3.5.14.1: Solid Waste a) Describe solid waste streams from existing and proposed facilities during construction. b) Identify procedures to be implemented to manage solid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated total volumes of solid waste by construction activity or project component. d) Describe the recycling potential of solid waste materials and provide estimated volumes of recyclable materials by construction activity or project component. e) Identify the locations of appropriate disposal and recycling facilities where solid wastes would be transported.	3.5.12.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.5.14.2: Liquid Waste a) Describe liquid waste streams during construction (i.e., sanitary waste, drilling fluids, contaminated water, etc.) b) Describe procedures to be implemented to manage liquid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated volumes of liquid waste generated by construction activity or project component. d) Identify the locations of appropriate disposal facilities where liquid wastes would be transported.	3.5.12.2
3.5.14.3: Hazardous Waste a) Describe potentially hazardous waste streams during construction and procedures to be implemented to manage hazardous wastes, including collection, containment, storage, treatment, and disposal. b) If large volumes of hazardous waste are anticipated, such as from a pre-existing contaminant in the soil that must be collected and disposed of, provide estimated volumes of hazardous waste that would be generated by construction activity or project component. c) Identify the locations of appropriate disposal facilities where hazardous wastes would be transported.	3.5.12.3 Also refer to Section 3.5.11
3.5.15: Fire Prevention and Response (All Projects)	3.5.13
3.5.15.1: Fire Prevention and Response Procedures. Describe fire prevention and response procedures that would be implemented during construction. Provide a Construction Fire Prevention Plan or specific procedures as an Appendix to the PEA.	3.5.13.1
3.5.15.2: Fire Breaks. Identify any fire breaks (i.e., vegetation clearance) requirements around specific project activities (i.e., hot work). Ensure that such clearance buffers are included in the limits of the defined work areas, and the vegetation removal in that area is attributed to Fire Prevention and Response (refer to 3.5.4.3: Vegetation Clearing).	3.5.13.2
3.6: Construction Workforce, Equipment, Traffic, and Schedule	3.6
3.6.1: Construction Workforce a) Provide the estimated number of construction crew members. In the absence of project-specific data, provide estimates based on past projects of a similar size and type. b) Describe the crew deployment. Would crews work concurrently (i.e., multiple crews at different sites); would they be phased? How many crews could be working at the same time and where? c) Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e. trenching, grading, etc.), and number and types of equipment expected to be used for the activity. Include a written description of the activity. See example in Table 5.	3.6.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.6.2: Construction Equipment. Provide a tabular list of the types of equipment expected to be used during construction of the proposed project including the horsepower. Define the equipment that would be used by each phase as shown in the example (Table 5).	3.6.2 Table 3-11
3.6.3: Construction Traffic a) Describe how the construction crews and their equipment would be transported to and from the proposed project site. b) Provide vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity and phase. c) Provide estimated vehicle trips and vehicles miles traveled (VMT) for each construction activity and phase. Provide separate values for construction crews commuting, haul trips, and other types of construction traffic.	3.6.3 Attachment 3-A Also see Section 5.17 and Attachment 5.3-A
3.6.4: Construction Schedule a) Provide the proposed construction schedule (e.g., month and year) for each segment or project component, and for each construction activity and phase. b) Provide and explain the sequencing of construction activities, and if they would or would not occur concurrently. c) Provide the total duration of each construction activity and phase in days or weeks. d) Identify seasonal considerations that may affect the construction schedule, such as weather or anticipated wildlife restrictions, etc. The proposed construction should account for such factors.	3.6.4 Table 3-12
3.6.5: Work Schedule a) Describe the anticipated work schedule, including the days of the week and hours of the day when work would occur. Clearly state if work would occur at night or on weekends and identify when and where this could occur. b) Provide the estimated number of days or weeks that construction activities would occur at each type of work area. For example, construction at a stationary facility or staging area may occur for the entire duration of construction, but construction at individual work areas along a linear project would be limited to a few hours, days or weeks, and only a fraction of the total construction period.	3.6.5
3.7: Post-Construction	3.7
3.7.1: Configuring and Testing. Describe the process and duration for post-construction configuring and testing of facilities. Describe the number of personnel and types of equipment that would be involved.	3.7.1
3.7.2: Landscaping. Describe any landscaping that would be installed. Provide a conceptual landscape plan that identifies the locations and types of plantings that will be used. Identify whether plantings will include container plants or seeds. Include any water required for landscaping in the description of water use above.	3.7.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
3.7.3: Demobilization and Site Restoration	3.7.3
3.7.3.1: Demobilization. Describe the process for demobilization after construction activities, but prior to leaving the work site. For example, describe final processes for removing stationary equipment and materials, etc.	3.7.3.1
3.7.3.2: Site Restoration. Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods) on all project ROWs, sites, and extra work areas. Things to consider include, but are not limited to, restoration of the following: a) Restoring natural drainage patterns b) Recontouring disturbed soil c) Removing construction debris d) Vegetation e) Permanent and semi-permanent erosion control measures f) Restoration of all disturbed areas and access roads, including restoration of any public trails that are used as access, as well as any damaged sidewalks, agricultural infrastructure, or landscaping, etc. g) Road repaving and striping, including proposed timing of road restoration for underground construction within public roadways	3.7.3.2
3.8: Operation and Maintenance	3.8
3.8.1: Regulations and Standards a) Identify and describe all regulations and standards applicable to operation and maintenance of project facilities. b) Provide a copy of any applicable Wildfire Management Plan and describe any special procedures for wildfire management.	3.8.1 Attachment 3-B
3.8.2: System Controls and Operation Staff a) Describe the systems and methods that the Applicant would use for monitoring and control of project facilities (e.g., on-site control rooms, remote facilities, standard monitoring and protection equipment, pressure sensors, automatic shut-off valves, and site and equipment specific for monitoring and control such as at natural gas well pads). b) If new full-time staff would be required for operation and/or maintenance, provide the number of positions and purpose.	3.8.2
3.8.3: Inspection Programs a) Describe the existing and proposed inspection programs for each project component, including the type, frequency, and timing of scheduled inspections (i.e., aerial inspection, ground inspection, pipeline inline inspections). b) Describe any enhanced inspections, such as within any High Fire Threat Districts consistent with applicable Wildfire Management Plan requirements. c) Describe the inspection processes, such as the methods, number of crew members, and how access would occur (i.e., walk, vehicle, all-terrain vehicle,	3.8.3

CPUC PEA Checklist	PEA Section, Table, or Figure Number
helicopter, drone, etc.). If new access would be required, describe any restoration that would be provided for the access roads.	
3.8.4: Maintenance Programs a) Describe the existing and proposed maintenance programs for each project component. b) Describe scheduled maintenance or facility replacement after the designated lifespan of the equipment. c) Identify typical parts and materials that require regular maintenance and describe the repair procedures. d) Describe any access road maintenance that would occur. e) Describe maintenance for surface or color treatment. f) Describe cathodic protection maintenance that would occur. g) Describe ongoing landscaping maintenance that would occur.	3.8.4
3.8.5: Vegetation Management Programs a) Describe vegetation management programs within and surrounding project facilities. Distinguish between any different types of vegetation management. b) Describe any enhanced vegetation management, such as within any High Fire Threat Districts consistent with any applicable Wildfire Management Plan requirements. Identify the areas where enhanced vegetation management would be conducted.	3.8.5
3.9 Decommissioning	3.9
3.9.1: Decommissioning. Provide detailed information about the current and reasonably foreseeable plans for the disposal, recycling, or future abandonment of all project facilities.	3.9
3.10: Anticipated Permits and Approvals	3.10
3.10.1: Anticipated Permits and Approvals. Identify all necessary federal, state, regional, and local permits that may be required for the project. For each permit, list the responsible agency and district/office representative with contact information, type of permit or approval, and status of each permit with date filed or planned to file. For example: a) Federal Permits and Approvals I. U.S. Fish and Wildlife Service II. U.S. Army Corps of Engineers III. Federal Aviation Administration IV. U.S. Forest Service V. U.S. Department of Transportation – Office of Pipeline Safety VI. U.S. Environmental Protection Agency (Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act) b) State and Regional Permits I. California Department of Fish and Wildlife	3.10.1 Table 3-13

CPUC PEA Checklist	PEA Section, Table, or Figure Number
II. California Department of Transportation III. California State Lands Commission IV. California Coastal Commission V. State Historic Preservation Office, Native American Heritage Commission VI. State Water Resources Control Board VII. California Division of Oil, Gas and Geothermal Resources VIII. Regional Air Quality Management District IX. Regional Water Quality Control Board (National Pollutant Discharge Elimination System General Industrial Storm Water Discharge Permit) X. Habitat Conservation Plan Authority (if applicable) See also Table 6 of example permitting requirements and processes.	
3.10.2: Rights-of-Way or Easement Applications. Demonstrate that applications for ROWs or other proposed land use have been or soon will be filed with federal, state, or other land-managing agencies that have jurisdiction over land that would be affected by the project (if any). Discuss permitting plans and timeframes and provide the contact information at the federal agency(ies) approached.	3.10.2 Table 3-14
3.11: Applicant-Proposed Measures a) Provide a table with the full text of any Applicant-Proposed Measure. Where applicable, provide a copy of Applicant procedures, plans, and standards referenced in the Applicant-Proposed Measures. b) Within Chapter 5, describe the basis for selecting a particular Applicant-Proposed Measure and how the Applicant-Proposed Measure would reduce the impacts of the project. c) Carefully consider each CPUC Draft Environmental Measure identified in Chapter 5 of this PEA Checklist. The CPUC Draft Environmental Measures will be applied to the proposed project where applicable.	3.11 Table 3-15 Also refer to Chapter 5 Also refer to Section 3.12 and Table 3-16 for PG&E's CMs
3.12 Project Description Graphics, Mapbook, and GIS Requirements	
3.12.1: Graphics. Provide diagrams of the following as applicable: a) All pole, tower, pipe, vault, conduit, and retaining wall types b) For poles, provide typical drawings with approximate diameter at the base and tip; for towers, estimate the width at base and top. c) A typical detail for any proposed underground duct banks and vaults d) All substation, switchyard, building, and facility layouts e) Trenching, drilling, pole installation, pipe installation, vault installation, roadway construction, facility removal, helicopter uses, conductor installation, traffic control, and other construction activities where a diagram would assist the reader in visualizing the work area and construction approach	Figure 3-1 Figure 3-2 Figure 3-3 Figure 3-4 Figure 3-5 Figure 3-6 Figure 3-7 Figure 3-8 Figure 3-9 Figure 3-10 Figure 3-11

CPUC PEA Checklist	PEA Section, Table, or Figure Number
f) Typical profile views of proposed aboveground facilities and existing facilities to be modified within the existing and proposed ROW (e.g., typical cross-section of existing and proposed facilities by project segment). g) Photos of representative existing and proposed structures	Figure 3-12 Attachment 3-A Also see Attachment 5.1-A for visual simulations of the Proposed Project
3.12.2: Mapbook. Provide a detailed mapbook on an aerial imagery basemap at a scale between 1:3000 and 1:6000 (or as appropriate and legible) that show mileposts, roadways, and all project components and work areas including: a) All proposed above-ground and underground structure/facility locations (e.g., poles, conductor, substations, compressor stations, telecommunication lines, vaults, duct bank, lighting, markers, etc.) b) All existing structures/facilities that would be modified or removed c) Identify by milepost where existing ROW will be used and where new ROW or land acquisition will be required d) All permanent work areas including permanent facility access e) All access roads, including existing, temporary, and new permanent access f) All temporary work areas including staging, material storage, field offices, material laydown, temporary work areas for above ground (e.g., pole installation) and underground facility construction (e.g., trenching and duct banks), helicopter landing zones, pull and tension sites, guard structures, shoo flys, etc.) g) Areas where special construction methods (e.g., jack and bore, HDD, blasting, retaining walls etc.) may need to be employed h) Areas where vegetation removal may occur i) Areas to be heavily graded and where slope stabilization measures would be employed including any retaining walls	Attachment 3-A
3.12.3: GIS Data. Provide GIS data for all features and ROW shown on the detailed mapbook.	GIS data provided under separate cover
3.12.4: GIS Requirements. Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed: a) Unique ID number and type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice) both in a table and in the attributes of the GIS data provided b) Identify pole/tower heights and conductor sizes in the attributes of the GIS data provided.	GIS data provided under separate cover
3.12.5: Natural Gas Facilities GIS Data. For natural gas facilities, provide GIS data for system cross ties and all laterals/taps, valve stations, and new and existing inspection facilities (e.g., pig launcher sites).	N/A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
4.0: Description of Alternatives	Chapter 4 Also refer to Chapter 2
4.1: Alternatives Considered. Identify alternatives to the proposed project. Include the following: a) All alternatives to the proposed project that were suggested, considered, or studied by the CAISO or by CAISO stakeholders b) Alternatives suggested by the public or agencies during public outreach efforts conducted by the Applicant c) Reduced footprint alternatives, including, e.g., smaller diameter pipelines and space for fewer electric transformers d) Project phasing options (e.g., evaluate the full build out for environmental clearance but consider an initial, smaller buildout that would only be expanded [in phases] if needed) e) Alternative facility and construction activity sites (e.g., substation, compressor station, drilling sites, well-head sites, staging areas) f) Renewable, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage alternatives g) Alternatives that would avoid or limit the construction of new transmission-voltage facilities or new gas transmission pipelines h) Other technological alternatives (e.g., conductor type) i) Route alternatives and route variations j) Alternative engineering or technological approaches (e.g., alternative types of facilities, or materials, or configurations) k) Assign an identification label and brief, descriptive title to each alternative described in this PEA chapter (e.g., Alternative A: No Project; Alterative B: Reduced Footprint 500/115-kV Substation; Alternative C: Ringo Hills 16-inch Pipeline Alignment; Alternative D1: Lincoln Street Route Variation; etc.). Each alternative will be easily identifiable by reading the brief title. Provide a description of each alternative. The description of each alternative will discuss to what extent it would be potentially feasible, meet the project's underlying purpose, meet most of the basic project objectives, and avoid or reduce one or more potentially significant impacts. If the Applicant believes that an alternative is infeasible or the implementation is remote and speculative (CEQA Guidelines Section 15126.6(f)(3), clearly explain why. If significant environmental effects are possible without mitigation, alternatives will be provided in the PEA that are capable of avoiding or reducing any potentially significant environmental effects, even if the alternative(s) substantially impede the attainment of some project objectives or are costlier.	4.1 Figure 4-1 Also refer to Chapters 3 and 6

CPUC PEA Checklist	PEA Section, Table, or Figure Number
4.2: No Project Alternative. Include a thorough description of the No Project Alternative. The No Project Alternative needs to describe the range of actions that are reasonably foreseeable if the proposed project is not approved. The No Project Alternative will be described to meet the requirements of CEQA Guidelines Section15126.6(e).	4.2
4.3: Rejected Alternatives. Provide a detailed discussion of all alternatives considered by the Applicant that were not selected by the Applicant for a full description in the PEA and analysis in PEA Chapter 5. The detailed discussion will include the following: a) Description of the alternative and its components b) Map of any alternative sites or routes c) Discussion about the extent to which the alternative would meet the underlying purpose of the project and its basic objectives d) Discussion about the feasibility of implementing the alternative e) Discussion of whether the alternative would reduce or avoid any significant environmental impacts of the proposed project f) Discussion of any new significant impacts that could occur from implementation of the alternative g) Description of why the alternative was rejected h) Any comments from the public or agencies about the alternative during PEA preparation	4.2.1 Also refer to Section 4.1 and Chapter 6
For Natural Gas Storage Projects:	N/A
4.4 Natural Gas Storage Alternatives. In addition to the requirements included above, alternatives to be considered for proposed natural gas storage projects include the following, where applicable: a) Alternative reservoir locations considered for gas storage including other field locations and other potential storage areas b) Alternative pipelines, road, and utility siting c) Alternative suction gas requirements, and injection/withdrawal options	N/A
5.0: Environmental Analysis	Chapter 5 Also refer to Chapter 3
5.1: Aesthetics	5.1
5.1.1: Environmental Setting	5.1.1
5.1.1.1: Landscape Setting. Briefly described the regional and local landscape setting.	5.1.1.1
5.1.1.2: Scenic Resources. Identify and describe any vistas, scenic highways, national scenic areas, or other scenic resources within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary). Scenic resources may also include but are not limited to historic structures, trees, or other resources that contribute to the scenic values where the project would be located.	5.1.1.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.1.1.3: Viewshed Analysis a) Conduct a viewshed analysis for the project area (approximately 5-mile buffer but may be greater if necessary). b) Describe the project viewshed, including important visibility characteristics for the project site, such as viewing distance, viewing angle, and intervening topography, vegetation, or structures. c) Provide a supporting map (or maps) showing project area, landscape units, topography (i.e., hillshade), and the results of the viewshed analysis. Provide associated GIS data.	5.1.1.3 GIS data provided under separate cover
5.1.1.4: Landscape Units. Identify and describe landscape units (geographic zones) within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary) that categorizes different landscape types and visual characteristics, with consideration to topography, vegetation, and existing land uses. Landscape units should be developed based on the existing landscape characteristics rather than the project's features or segments.	5.1.1.4 Figure 5.1-1
5.1.1.5: Viewers and Viewer Sensitivity. Identify and describe the types of viewers expected within the viewshed and landscape units. Describe visual sensitivity to general visual change based on viewing conditions, use of the area, feedback from the public about the project, and landscape characteristics.	5.1.1.5
5.1.1.6: Representative Viewpoints a) Identify representative viewpoints from publicly accessible locations (up to approximately 5-mile buffer but may be greater if appropriate). The number and location of the viewpoints must represent a range of views of the project site from major roads, highways, trails, parks, vistas, landmarks, and other scenic resources near the project site. Multiple viewpoints should be included where the project site would be visible from sensitive scenic resources to provide context on different viewing distances, perspectives, and directions. b) Provide the following information for each viewpoint: i. Number, title, and brief description of the location ii. Types of viewers iii. Viewing direction(s) and distance(s) to the nearest proposed project features iv. Description of the existing visual conditions and visibility of the project site as seen from the viewpoint and shown in the representative photographs c) Provide a supporting map (or maps) showing project features and representative viewpoints with arrows indicating the viewing direction(s). Provide associated GIS data (may be combined with GIS data request below for representative photographs).	5.1.1.6 Figure 5.1-1 Table 5.1-1 GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.1.1.7: Representative Photographs a) Provide high resolution photographs taken from the representative viewpoints in the directions of all proposed project features. Multiple photographs should be provided where project features may be visible in different viewing directions from the same location. b) Provide the following information for each photograph: i. Capture time and date ii. Camera body and lens model iii. Lens focal length and camera height when taken c) Provide GIS data associated with each photograph location that includes coordinates (<1 meter resolution), elevations, and viewing directions, as well as the associated viewpoint.	5.1.1.7 Figure 5.1-2 Figure 5.1-3 Figure 5.1-4 Figure 5.1-5 Figure 5.1-6 Figure 5.1-7 Figure 5.1-8 Figure 5.1-9 Figure 5.1-10 Figure 5.1-11 GIS data provided under separate cover
5.1.1.8: Visual Resource Management Areas a) Identify any visual resource management areas within and surrounding the project area (approximately 5-mile buffer). b) Describe any project areas within visual resource management areas. c) Provide a supporting map (or maps) showing project features and visual resource management areas. Provide associated GIS data.	5.1.1.8
5.1.2: Regulatory Setting	5.1.2
5.1.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding aesthetics and visual resource management.	5.1.2.1
5.1.3: Impact Questions	
5.1.3.1: CEQA Impact Questions. The impact questions include all aesthetic impact questions in the current version of CEQA Guidelines, Appendix G.	5.1.3.1
5.1.3.2: Additional CEQA Impact Questions: None.	5.1.3.2
5.1.4: Impact Analysis	5.1.4
5.1.4.1: Visual Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.1.4.1
The following information will be included in the PEA or a technical Appendix to support the aesthetic impact analysis:	
5.1.4.2: Analysis of Selected Viewpoints. Identify the methodology and assumptions that were applied in selecting key observation points for visual simulation. It is recommended that viewpoints are selected where viewers may be sensitive to visual change (public views) and in areas that are visually sensitive, or heavily trafficked or visited.	Attachment 5.1-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.1.4.3: Visual Simulation a) Identify methodology and assumptions for completing the visual simulations. The simulations should include photorealistic 3-D models of project features and any land changes within the KOP view. The visual simulations should depict conditions i. Immediately following construction, and ii. After vegetation establishment in all areas of temporary impact to illustrate the visual impact from vegetation removal. b) Provide high resolution images for the visual simulations.	Attachment 5.1-A
5.1.4.4: Analysis of Visual Change a) Identify the methodology and assumptions for completing the visual change analysis. The methodology should be consistent with applicable visual resource management criteria. b) Provide a description of the visual change for each selected viewpoint. Describe any conditions that would change over time, such as vegetation growth. c) Describe the effects of visual change that would result in the entire project area, as indicated by the selected viewpoints that were simulated and analyzed.	Attachment 5.1-A
5.1.4.5: Lighting and Marking. Identify all new sources of permanent lighting. Identify any proposed structures or lines that could require FAA notification. Identify any structures or line segments that could require lighting and marking based on flight patterns and FAA or military requirements. Provide supporting documentation in an Appendix (e.g., FAA notice and criteria tool results).	N/A
5.1.5: CPUC Draft Environmental Measures	5.1.5 Refer to Section 5.1.6
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.1.6: Applicant-Proposed Measures	5.1.6 Also refer to Section 5.1.7 for PG&E's CMs
5.2: Agriculture and Forestry Resources	5.2
5.2.1: Environmental Setting	5.2.1
5.2.1.1: Agricultural Resources and GIS a) Identify all agricultural resources that occur within the project area including: i. Areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance ii. Areas under Williamson Act contracts and provide information on the status of the Williamson Act contract iii. Any areas zoned for agricultural use in local plans iv. Areas subject to active agricultural use b) Provide GIS data for all forestry resources within the proposed project area.	5.2.1.1 Figure 5.2-1 Figure 5.2-2 GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.2.1.2: Forestry Resources and GIS a) Identify all forestry resources within the project area including: i. Forest land as defined in Public Resources Code 12220(g)25 ii. Timberland as defined in Public Resource Code section 4526 iii. Timberland zoned Timberland Production as defined in Government Code section 51104(g) b) Provide GIS data for all forestry resources within the proposed project area.	5.2.1.2
5.2.2: Regulatory Setting	5.2.2
5.2.2: Regulatory Setting. Identify all federal, state, and local policies for protection of agricultural and forestry resources that apply to the proposed project.	5.2.2
5.2.3: Impact Questions	5.2.3
5.2.3.1: CEQA Impact Questions. The impact questions include all agriculture and forestry impact questions in the current version of CEQA Guidelines, Appendix G.	5.2.3.1
5.2.3.2: Additional CEQA Impact Questions: None.	5.2.3.1
5.2.4: Impact Analyses	5.2.4
5.2.4.1: Agriculture and Forestry Impacts. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.2.4.1
Incorporate the following discussions into the analysis of impacts:	
5.2.4.2: Prime Farmland Soil Impacts. Calculate the acreage of Prime Farmland soils that would be affected by construction and operation and maintenance.	5.2.4.2
5.2.4.3. Williamson Act Impacts. Describe the approach to resolve potential conflicts with Williamson Act contract (if applicable)	5.2.4.3
5.2.5: CPUC Draft Environmental Measures	5.2.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.2.6: Applicant-Proposed Measures	5.2.6 Also refer to Section 5.2.7 for PG&E's CMs
5.3: Air Quality	5.3
5.3.1: Environmental Setting	5.3.1
5.3.1.1: Air Quality Plans. Identify and describe all applicable air quality plans and attainment areas. Identify the air basin(s) for the project area. If the project is located in more than one attainment area and/or air basin, provide the extent in each attainment area and air basin.	5.3.1.1 Table 5.3-1 Also refer to Section 5.3.2.1.4

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.3.1.2: Air Quality. Describe existing air quality in the project area. a) Identify existing air quality exceedance of National Ambient Air Quality Standards and California Ambient Air Quality Standards in the air basin. b) Provide the number of days that air quality in the area exceeds state and federal air standards for each criteria pollutant that where air quality standards are exceeded. c) Provide air quality data from the nearest representative air monitoring station(s).	5.3.1.2 Table 5.3-2 Table 5.3-3
5.3.1.3: Sensitive Receptor Locations. Identify the location and types of each sensitive receptor within 1,000 feet of the project area. Provide GIS data for sensitive receptor locations.	5.3.1.3 GIS data provided under separate cover
5.3.2: Regulatory Setting	5.3.2
5.3.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding aesthetics and visual resource management.	5.3.2.1 Table 5.3-4 Table 5.3-5 Table 5.3-6
5.3.2.2: Air Permits. Identify and list all necessary air permits.	5.3.2.2
5.3.3: Impact Questions	5.3.3
5.3.3.1: CEQA Impact Questions. The impact questions include all air quality impact questions in the current version of CEQA Guidelines, Appendix G.	5.3.3.1
5.3.3.2: Additional CEQA Impact Questions: None.	5.3.3.2
5.3.4: Impact Analysis	5.3.4
5.3.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.3.4.1 Table 5.3-7 Table 5.3-8 Table 5.3-9 Also refer to Section 5.14 and Chapter 3
The following information will be presented in the PEA or a technical Appendix to support the air quality impact analysis:	
5.3.4.2: Air Quality Emissions Modeling. Model project emissions using the most recent version of CalEEMod and/or a current version of other applicable modeling program. Provide all model input and output data sheets in Microsoft Excel format to allow CPUC to evaluate whether project data was entered into the modeling program accurately. The assumptions used in the air quality modeling must be consistent with all PEA information about the project's schedule, workforce, and equipment. The following information will be addressed in the emissions modeling, Air Quality Appendix, and PEA: a) Quantify the expected emissions of criteria pollutants from all project-related sources. Quantify emissions for both construction and operation (e.g.,	5.3.4.2 Attachment 5.3-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
compressor equipment). b) Identify manufacturer's specifications for all proposed new emission sources. For proposed new, additional, or modified compressor units, include the horsepower, type, and energy source. c) Describe any emission control systems that are included in the air quality analysis (e.g., installation of filters, use of EPA Tier II, III, or IV equipment, use of electric engines, etc.). d) When multiple air basins may be affected by the project, model air emissions within each air basin and provide a narrative (supported by calculations) that clearly describes the assumptions around the project activities considered for each air basin. Provide modeled emissions by attainment area or air basin (supported by calculations).	
5.3.4.3: Air Quality Emissions Summary. Provide a table summarizing the air quality emissions for the project and applicable thresholds for each applicable attainment area. Include a summary of uncontrolled emissions (prior to application of any APMs) and controlled emissions (after application of APMs). Clearly identify the assumptions that were applied in the controlled emissions estimates.	3.5.4.3 Attachment 5.3-A Also refer to Section 5.3.4
5.3.4.4: Health Risk Assessment. Complete a Health Risk Assessment when air quality emissions have the potential to lead to human health impacts. If health impacts are not anticipated from project emissions, the analysis should clearly describe why emissions would not lead to health impacts.	5.3.4.4
5.3.5: CPUC Draft Environmental Measures	5.3.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.3.6: Applicant-Proposed Measures	5.3.6 Also refer to Section 5.3.7 for PG&E's CMs
5.4: Biological Resources	5.4
5.4.1: Environmental Setting	5.4.1
5.4.1.1: Biological Resources Technical Report. Provide a Biological Resources Technical Report as an Appendix to the PEA that includes all information specified in Attachment 2.	5.4.1.1 Attachment 5.4-A Attachment 5.4-B
The following biological resources information will be presented in the PEA:	
5.4.1.2: Survey Area (Local Setting). Identify and describe the biological resources survey area as documented in the Biological Resources Technical Report. All temporary and permanent project areas must be within the survey area.	5.4.1.2 Figure 5.4-1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.4.1.3: Vegetation Communities and Land Cover a) Identify, describe, and quantify vegetation communities and land cover types within the biological resources survey area. b) Clearly identify any sensitive natural vegetation communities that meet the definition of a biological resource under CEQA (i.e., rare, designated, or otherwise protected), such as, but not limited to, riparian habitat. c) Provide a supporting map (or maps) showing project features and vegetation communities and land cover type.	5.4.1.3 Table 5.4-1 Attachment 5.4-C
5.4.1.4: Aquatic Features a) Identify, describe, and quantify aquatic features within the biological resources survey area that may provide potentially suitable aquatic habitat for rare and special-status species. b) Identify and quantify potentially jurisdictional aquatic features and delineated wetlands, according to the Wetland Delineation Report and Biological Resources Technical Report. c) Provide a supporting map (or maps) showing project features and aquatic resources.	5.4.1.4 Figure 5.4-2 Table 5.4-2 Table 5.4-3
5.4.1.5: Habitat Assessment. Identify rare and special-status species with potential to occur in the project region (approximately a 5-mile buffer but may be larger if necessary). For each species, provide the following information: a) Common and scientific name b) Status and/or rank c) Habitat characteristics (i.e., vegetation communities, elevations, seasonal changes, etc.) d) Blooming characteristics for plants e) Breeding and other dispersal (range) behavior for wildlife f) Potential to occur within the survey area (i.e., Present, High Potential, Moderate Potential, Low Potential, or Not Expected), with justification based on the results of the records search, survey findings, and presence of potentially suitable habitat g) Specific types and locations of potentially suitable habitat that correspond to the vegetation communities and land cover and aquatic features	5.4.1.5 5.4.1.6 Figure 5.4-2 Figure 5.4-3 Table 5.4-4 Table 5.4-5 Table 5.4-6 Attachment 5.4-C Attachment 5.4-D Attachment 5.4-E Attachment 5.4-F Also refer to Sections 5.4.2, 5.4.3, and 5.4.4
5.4.1.6: Critical Habitat a) Identify and describe any critical habitat for rare or special status species within and surrounding the project area (approximately a 5- mile buffer). b) Provide a supporting map (or maps) showing project features and critical habitat.	5.4.1.7

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.4.1.7: Native Wildlife Corridors and Nursery Sites a) Identify and describe regional and local wildlife corridors within and surrounding the project area (approximately a 5-mile buffer), including but not limited to, landscape and aquatic features that connect suitable habitat in regions otherwise fragmented by terrain, changes in vegetation, or human development. b) Identify and describe regional and local native wildlife nursery sites within and surrounding the project area (approximately a 5-mile buffer), as identified through the records search, surveys, and habitat assessment. c) Provide a supporting map (or maps) showing project features, native wildlife corridors, and native nursery sites.	5.4.1.8 Attachment 5.4-B
5.4.1.8: Biological Resource Management Areas a) Identify any biological resource management areas (i.e., conservation or mitigation areas, HCP or NCCP boundaries, etc.) within and surrounding the project area (approximately 5-mile buffer). b) Identify and quantify any project areas within biological resource management areas. c) Provide a supporting map (or maps) showing project features and biological resource management areas.	5.4.1.9
5.4.2: Regulatory Setting	5.4.2
5.4.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding biological resources.	5.4.2
5.4.2.2: Habitat Conservation Plan. Provide a copy of any relevant Habitat Conservation Plan.	See Attachment 5.11-A
5.4.3: Impact Questions	5.4.3
5.4.3.1: Impact Questions. The impact questions include all biological resource impact questions in the current version of CEQA Guidelines, Appendix G.	5.4.3.1
5.4.3.2: Additional CEQA Impact Question: Would the project create a substantial collision or electrocution risk for birds or bats?	5.4.3.2
5.4.4: Impact Analysis	5.4.4
5.4.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for Biological Resources and any additional impact questions listed above.	5.4.4.1 Table 5.4-8 Table 5.4-9 Table 5.4-10 Attachment 5.4-C

CPUC PEA Checklist	PEA Section, Table, or Figure Number
The following information will be included in the impact analysis:	
5.4.4.2: Quantify Habitat Impacts. Provide the area of impact in acres by each habitat type. Quantify temporary and permanent impacts. For all temporary impacts provide the following: a) Description of the restoration and revegetation approach b) Vegetation species that would be planted within the area of temporary disturbance c) Procedures to reduce invasive weed encroachment within areas of temporary disturbance d) Expected timeframe for restoration of the site	5.4.4.2 Also refer to Section 5.4.4.1.1
5.4.4.3: Special-Status Species Impacts. Identify anticipated impacts on special-status species. Identify any take permits that are anticipated for the project. If an existing habitat conservation plan (HCP) or natural communities conservation plan (NCCP) would be used for the project, provide current accounting of take coverage included in the HCP/NCCP to demonstrate that there is sufficient habitat coverage remaining under the existing permit.	5.4.4.3 Also refer to Section 5.4.4.1.1
5.4.4.4: Wetland Impacts. Quantify the area (in acres) of temporary and permanent impacts on wetlands. Include the following details: a) Provide a table identifying all wetlands, by milepost and length, crossed by the project and the total acreage of each wetland type that would be affected by construction. b) Discuss construction and restoration methods proposed for crossing wetlands. c) If wetlands would be filled or permanently lost, describe proposed measures to compensate for permanent wetland losses. d) If forested wetlands would be affected, describe proposed measures to restore forested wetlands following construction.	5.4.4.4 Also refer to Section 5.4.4.1.1
5.4.4.5: Avian Impacts. Describe avian obstructions and risk of electrocution from the project. Describe any standards that will be implemented as part of the project to reduce the risk of collision and electrocution.	5.4.4.5 Also refer to Section 5.4.4.1.1
5.4.5: CPUC Draft Environmental Measures	5.4.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.4.6: Applicant-Proposed Measures	5.4.6 Also refer to Section 5.7 for PG&E's CMs
5.5: Cultural Resources	5.5
5.5.1: Environmental Setting	5.5.1
5.5.1.1: Cultural Resource Reports. Provide a cultural resource inventory and evaluation report that addresses the technical requirement provided in Attachment 3.	Attachment 5.5-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.5.1.2: Cultural Resources Summary. Summarize cultural resource survey and inventory results and survey methods. Do not provide any confidential cultural resource information within the PEA chapter.	5.5.1.1 Attachment 5.5-A
5.5.1.3: Cultural Resource Survey Boundaries. Provide a map with mileposts showing the boundaries of all survey areas in the report. Provide the GIS data for the survey area. Provide confidential GIS data for the resource locations and boundaries separately under confidential cover.	Attachment 5.5-A GIS data provided under separate cover
5.5.2 Regulatory Setting	5.5.2
5.5.2.1: Regulatory Setting. Identify applicable federal and state regulations for protection of cultural resources.	5.5.2.1
5.5.3: Impact Questions	5.5.3
5.5.3.1: CEQA Impact Questions. The impact questions include all cultural resource impact questions in the current version of CEQA Guidelines, Appendix G.	5.3.3.1
5.5.3.2: Additional CEQA Impact Questions: None.	5.5.3.2
5.5.4: Impact Analysis	5.5.4
5.5.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.5.4.1
Include the following information in the impact analysis	
5.5.4.2: Human Remains. Describe the potential for encountering human remains or grave goods during the trenching or any other phase of construction. Describe the procedures that would be used if human remains are encountered.	5.5.4.2 Also refer to Section 5.5.4.1
5.5.4.3: Resource Avoidance. Describe avoidance procedures that would be implemented to avoid known resources.	5.5.4.3
5.5.5: CPUC Draft Environmental Measures	5.5.5 Also refer to Section 5.5.6
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.5.6: Applicant-Proposed Measures	5.5.6 Also refer to Section 5.5.7 for PG&E's CMs
5.6: Energy	5.6
5.6.1: Environmental Setting	5.6.1
5.6.1.1: Existing Energy Use. Identify energy use of existing infrastructure if the proposed project would replace or upgrade an existing facility.	5.6.1.2 Table 5.6-1 Table 5.6-2 Table 5.6-3

CPUC PEA Checklist	PEA Section, Table, or Figure Number
	Also refer to Chapter 3
5.6.2: Regulatory Setting	5.6.2
5.6.2.1: Regulatory Setting. Identify applicable federal, state, or local regulations or policies applicable to energy use for the proposed project.	5.6.2.1
5.6.3: Impact Questions	5.6.3
5.6.3.1: Impact Questions: The impact questions include all energy impact questions in the current version of CEQA Guidelines, Appendix G.	5.6.3.1 Attachment 5.6-A
5.6.3.2: Additional CEQA Impact Question: Would the project add capacity for the purpose of serving a nonrenewable energy resource?	5.6.3.2
5.6.4: Impact Analysis	5.6.4
5.6.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.6.4.1
Include the following information in the impact analysis:	
5.6.4.2: Nonrenewable Energy. Identify renewable and non-renewable energy projects that may interconnected to or be supplied by the proposed project.	5.6.4.2
5.4.6.3: Fuels and Energy Use a) Provide an estimation of the amount of fuels (gasoline, diesel, helicopter fuel, etc.) that would be used during construction and operation and maintenance of the project. Fuel estimates should be consistent with Air Quality calculations supporting the PEA. b) Provide the following information on energy use: i. Total energy requirements of the project by fuel type and end use ii. Energy conservation equipment and design features iii. Identification of energy supplies that would serve the project	5.4.6.3 Attachment 5.6-A
5.6.5: CPUC Draft Environmental Measures	5.6.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.6.6: Applicant-Proposed Measures	5.6.6 Also refer to Section 5.6.7 for PG&E's CMs
5.7: Geology, Soils, and Paleontological Resources	5.7
5.7.1: Environmental Setting	5.7.1
5.7.1.1: Regional and Local Geologic Setting. Briefly describe the regional and local physiography, topography, and geologic setting in the project area.	5.7.1.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.7.1.2: Seismic Hazards a) Provide the following information on potential seismic hazards in the project area: i. Identify and describe regional and local seismic risk including any active faults within and surrounding the project area (will be a 10-mile buffer unless otherwise instructed in writing by CEQA Unit Staff during Pre-filing) ii. Identify any areas that are prone to seismic-induced landslides iii. Provide the liquefaction potential for the project area b) Provide a supporting map (or maps) showing project features and major faults, areas of landslide risk, and areas at high risk of liquefaction. Provide GIS data for all faults, landslides, and areas of high liquefaction potential.	5.7.1.2 Figure 5.7-1 Figure 5.7-2 Figure 5.7-3 Table 5.7-1 GIS data provided under separate cover
5.7.1.3: Geologic Units. Identify and describe the types of geologic units in the project area. Include the following information for each geologic unit: a) Summarize the geologic units within the project area. b) Identify any previous landslides in the area and any areas that are at risk of landslide. c) Identify any unstable geologic units. d) Provide a supporting map (or maps) showing project features and geologic units. Clearly identify any areas with potentially hazardous geologic conditions. Provide associated GIS data.	5.7.1.3 Figure 5.7-4 Table 5.7-5 Attachment 5.7-A Also refer to Sections 5.7.1.2, 5.7.1.2, and 5.7.1.5 GIS data provided under separate cover
5.7.1.4: Soils. Identify and describe the types of soils in the project area. a) Summarize the soils within the project area. b) Clearly identify any soils types that could be unstable (e.g., at risk of lateral spreading, subsidence, liquefaction, or collapse). c) Provide information on erosion susceptibility for each soil type that occurs in the project area. d) Provide a supporting map (or maps) showing project features and soils. Provide associated GIS data.	5.7.1.4 Figure 5.7-5 Table 5.7-2 Table 5.7-3 GIS data provided under separate cover
5.7.1.5: Paleontological Report. Provide a paleontological report that includes the following: a) Information on any documented fossil collection localities within the project area and a 500-foot buffer. b) A paleontological resource sensitivity analysis based on published geological mapping and the resource sensitivity of each rock type. c) Supporting maps and GIS data.	5.7.1.5 Table 5.7-4 Table 5.7-5 Attachment 5.7-A GIS data provided under separate cover
5.7.2: Regulatory Setting	5.7.2
5.7.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding geology, soils, and paleontological resources.	5.7.2.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.7.3: Impact Questions	5.7.3
5.7.3.1: CEQA Impact Questions. The impact questions include all geology, soils, and paleontological resource impact questions in the current version of CEQA Guidelines, Appendix G.	5.7.3.1
5.7.3.2: Additional CEQA Impact Questions: None.	5.7.3.2
5.7.4 Impact Analysis	5.7.4
5.7.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.7.4.1 Also refer to Section 5.10 and Chapter 3
Include the following information in the impact analysis:	
5.7.4.2: Geotechnical Requirements. Identify any geotechnical requirements that would be implemented to address effects from unstable geologic units or soils. Describe how the recommendation would be applied (i.e., when and where).	5.7.4.2
5.7.4.3: Paleontological Resources. Identify the potential to disturb paleontological resources based on the depth of proposed excavation and paleontological sensitivity of geologic units within the project area.	5.7.4.3 Attachment 5.7-A Also refer to Section 5.7.1.5
5.7.5: CPUC Draft Environmental Measures	5.7.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.7.6: Applicant-Proposed Measures	5.7.6 Also refer to Section 5.7.7 for PG&E's CMs
5.8: Greenhouse Gas Emissions	5.8
5.8.1: Environmental Setting	5.8.1
5.8.1.1: GHG Setting. Provide a description of the setting for greenhouse gases (GHGs). The setting should consider any GHG emissions from existing infrastructure that would be upgraded or replaced by the proposed project.	5.8.1.1
5.8.2: Regulatory Setting	5.8.2
5.8.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for greenhouse gases.	5.8.2.1
5.8.3: Impact Questions	5.8.3
5.8.3.1: CEQA Impact Questions. The impact questions include all greenhouse gas impact questions in the current version of CEQA Guidelines, Appendix G.	5.8.3.1
5.8.3.2: Additional CEQA Impact Questions: None.	5.8.3.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.8.4 Impact Analysis	5.8.4
5.8.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.8.4.1 Table 5.8-1 Also refer to Section 5.3
Include the following information in the impact analysis:	
5.8.4.2: GHG Emissions. Provide a quantitative assessment of GHG emissions for construction and operation and maintenance of the proposed project. Provide model results and all model files. Modeling will be conducted using the latest version of the emissions model at the time of application filing (e.g., most recent version of CalEEMod). GHG emissions will be provided for the following conditions: a) Uncontrolled emissions (before APMs are applied) b) Controlled emissions considering application of APMs i. Based on the modeled GHG emissions, quantify the project's contribution to and analyze the project's effect on climate change. Identify and provide justification for the timeframe considered in the analysis. ii. Discuss any programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the EPA SF6 reduction program, reductions from energy efficiency, demand response, LTPP, etc. iii. For any significant impacts, identify potential strategies that could be employed by the project to reduce GHGs during construction or operation and maintenance consistent with OPR Advisory on CEQA and Climate Change.	5.8.4.2 Also refer to Sections 5.3 and 5.8.4.1
Natural Gas Storage	N/A
5.8.4.3: Natural Gas Storage Accident Conditions. In addition to the requirements above, identify the potential GHG emissions that could result in the event of a gas leak.	N/A
5.8.4.4: Monitoring and Contingency Plan. Provide a comprehensive monitoring plan that would be implemented during project operation to monitor for gas leaks. The plan should identify a monitoring schedule, description of monitoring activities, and actions to be implemented if gas leaks are observed.	N/A
5.8.5: CPUC Draft Environmental Measures	5.8.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.8.6: Applicant-Proposed Measures	5.8.6 Also refer to Section 5.8.7 for PG&E's CMs
5.9: Hazards, Hazardous Materials, and Public Safety	5.9
5.9.1: Environmental Setting	5.9.1
5.9.1.1: Hazardous Materials Report. Provide a Phase I Environmental Site Assessment or similar hazards report for the proposed project area. Describe any known hazardous materials locations within the project area and the status of the site.	5.9.1.1 Table 5.9-1 Attachment 5.9-A Attachment 5.9-B Attachment 5.9-C
5.9.1.2: Airport Land Use Plan. Identify any airport land use plan(s) within the project area.	5.9.1.2 Figure 5.9-1
5.9.1.3: Fire Hazard. Identify if the project occurs within federal, state, or local fire responsibility areas and identify the fire hazard severity rating for all project areas, including temporary work areas and access roads.	5.9.1.3 Also refer to Section 5.20
5.9.1.4: Metallic Objects. For electrical projects, identify any metallic pipelines or cables within 25 feet of the project.	5.9.1.4
5.9.1.5: Pipeline History (for Natural Gas Projects). Provide a narrative describing the history of the pipeline system(s) to which the project would connect, list of previous owner and operators, and detailed summary of the pipeline systems' safety and inspection history.	N/A
5.9.2 Regulatory Setting	5.9.2
5.9.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for hazards, hazardous materials, and public safety.	5.9.2.1
5.9.2.2: Touch Thresholds. Identify applicable standards for protection of workers and the public from shock hazards.	5.9.2.2
5.9.3: Impact Questions	5.9.3
5.9.3.1: CEQA Impact Questions. The impact questions include all hazards and hazardous materials impact questions in the current version of CEQA Guidelines, Appendix G.	5.9.3.1
5.9.3.2: Additional CEQA Impact Questions: a) Would the project create a significant hazard to air traffic from the installation of new power lines and structures? b) Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters? c) Would the project expose people to a significant risk of injury or death involving unexploded ordnance?	5.9.3.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
d) Would the project expose workers or the public to excessive shock hazards?	
5.9.4: Impact Analysis	5.9.4
5.9.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.9.4.1 Also refer to Sections 5.9.1.1, 5.9.2, 5.15, and 5.20
Include the following information in the impact analysis:	
5.9.4.2: Hazardous Materials. Identify the hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction and operation of the project. Estimate the quantity of each hazardous material that would be stored on site during construction and operation.	5.9.4.2
5.9.4.3: Air Traffic Hazards. If the project involves construction of above-ground structures (including structure replacement) within the airport land use plan area, provide a discussion of how the project would or would not conflict with height restrictions identified in the airport land use plan and how the project would comply with any FAA or military requirements for the above ground facilities.	5.9.4.3 Attachment 5.9-D
5.9.4.4: Accident or Upset Conditions. Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes.	5.9.4.4
5.9.4.5: Shock Hazard. For electricity projects, identify infrastructure that may be susceptible to induced current from the proposed project. Describe strategies (e.g., cathodic protection) that the project would employ to reduce shock hazards and avoid electrocution of workers or the public.	5.9.4.5
For Natural Gas and Gas Storage:	
5.9.4.6: Health and Safety Plan. Include in the Health and Safety Plan, plans for addressing gas leaks, fires, etc. Identify sensitive receptors, methods of evacuation, and protection measures. The Plan will be provided as an Appendix to the PEA.	N/A
5.9.4.7: Health Risk Assessment. Provide a Health Risk Assessment including risk from potential gas leaks, fires, etc. Identify sensitive receptors that would be affected and potential impacts on them if there is a gas release.	N/A
5.9.4.8: Gas Migration. Describe potential for and effects of gas migration through natural and manmade pathways. a) Provide Applicant-Proposed Measures for avoiding gas emissions at the surface from gas migration pathways. b) Provide Applicant Proposed Measures for avoiding emissions of mercaptan and/or other odorizing agents.	N/A
5.9.5: CPUC Draft Environmental Measures	5.9.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.9.6: Applicant-Proposed Measures	5.9.6 Also refer to Section 5.9.7 for PG&E's CMs
5.10: Hydrology and Water Quality	5.10
5.10.1: Environmental Setting	5.10.1
5.10.1.1: Waterbodies. Identify by milepost all ephemeral, intermittent, and perennial surface waterbodies crossed by the project. For each, list its water quality classification, if applicable.	5.10.1.1 Figure 5.10-1 Table 5.10-1 Table 5.10-2
5.10.1.2: Water Quality. Identify any downstream waters that are on the state 303(d) list and identify whether a total maximum daily load (TMDL) has been adopted or the date for adoption of a TMDL. Identify existing sources of impairment for downstream waters. Describe any management plans that are in place for downstream waters.	5.10.1.2 Table 5.10-3
5.10.1.3: Groundwater Basin. Identify all known EPA and state groundwater basins and aquifers crossed by the project.	5.10.1.3
5.10.1.4: Groundwater Wells and Springs. Identify the locations of all known public and private groundwater supply wells and springs within 150 feet of the project area.	5.10.1.4
5.10.1.5: Groundwater Management. Identify the groundwater management status of any groundwater resources in the project area and any groundwater resources that may be used by the project. Describe if groundwater resources in the basin have been adjudicated. Identify any sustainable groundwater management plan that has been adopted for groundwater resources in the project area or describe the status of groundwater management planning in the area.	5.10.1.5
5.10.2 Regulatory Setting	5.10.2
5.10.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding hydrologic and water quality.	5.10.2.1
5.10.3: Impact Questions	5.10.3
5.10.3.1: CEQA Impact Questions. The impact questions include all hydrology and water quality impact questions in the current version of CEQA Guidelines, Appendix G.	5.10.3.1
5.10.3.2: Additional CEQA Impact Questions: None.	5.10.3.2
5.10.4 Impact Analysis	5.10.4
5.10.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in the current version of CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.10.4.1 Also refer to Sections 5.10.1.5, 5.10.1.6, 5.10.2.1 and 5.10.6.2 and Chapter 3

CPUC PEA Checklist	PEA Section, Table, or Figure Number
Include the following information in the impact analysis:	
5.10.4.2: Hydrostatic Testing. Identify all potential sources of hydrostatic test water, quantity of water required, withdrawal methods, treatment of discharge, and any waste products generated.	5.10.4.2
5.10.4.3: Water Quality Impacts. Describe impacts to surface water quality, including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	5.10.4.3 Also refer to Section 5.10.4.1
5.10.4.4: Impermeable Surfaces. Describe increased run-off and impacts on groundwater recharge due to construction of impermeable surfaces. Provide the acreage of new impermeable surfaces that will be created as a result of the project.	5.10.4.4 Also refer to Section 5.10.4.1
5.10.4.5: Waterbody Crossings. Identify by milepost all waterbody crossings. Provide the following information for crossing: a) Identify whether the waterbody has contaminated waters or sediments. b) Describe the waterbody crossing method and any approaches to avoid the waterbody. c) Describe typical additional work area and staging area requirements at waterbody and wetland crossings. d) Describe any dewatering or water diversion that will be required during construction near the waterbody. Identify treatment methods for any dewatering. e) Describe any proposed restoration methods for work near or within the waterbody.	5.10.4.5 Also refer to Section 5.10.4.1
5.10.4.6: Groundwater Impacts. If water would be obtained from groundwater supplies, evaluate the project's consistency with any applicable sustainable groundwater management plan.	5.10.4.6 Also refer to Section 5.10.1.5
5.10.5: CPUC Draft Environmental Measures	5.10.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.10.6: Applicant-Proposed Measures	5.10.6 Also refer to Section 5.10.7 for PG&E's CMs
5.11: Land Use and Planning	5.11
5.11.1: Environmental Setting	5.11.1
5.11.1.1: Land Use. Provide a description of land uses within the area traversed by the project route as designated in the local General Plan (e.g., residential, commercial, agricultural, open space, etc.).	5.11.1.1 Figure 5.11-1 Figure 5.11-2 Table 5.11-1 Table 5.11-2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.11.1.2: Special Land Uses. Identify by milepost and segment all special land uses within the project area including: a) All land administered by federal, state, or local agencies, or private conservation organizations b) Any designated coastal zone management areas c) Any designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project d) Any national landmarks	5.11.1.3 Figure 5.11-3 Table 5.11-3
5.11.1.3: Habitat Conservation Plan. Provide a copy of any Habitat Conservation Plan applicable to the project area or proposed project. Also required for Section 5.4, Biological Resources.	5.11.1.4 Attachment 5.11-A
5.11.2 Regulatory Setting	5.11.2
5.11.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for land use and planning.	5.11.2.1
5.11.3: Impact Questions	5.11.3
5.11.3.1: CEQA Impact Questions. The impact questions include all land use questions in the current version of CEQA Guidelines, Appendix G.	5.11.3.1
5.11.3.2: Additional CEQA Impact Questions: None.	5.11.3.2
5.11.4: Impact Analysis	5.11.4
5.11.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.11.4.1 Attachment 5.11-B Refer to Section 5.11.2.1.2
5.11.5: CPUC Draft Environmental Measures	5.11.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.11.6: Applicant-Proposed Measures	5.11.6 Also refer to Section 5.11.7 for PG&E's CMs
5.12: Mineral Resources	5.12
5.12.1: Environmental Setting	5.12.1
5.12.1.1: Mineral Resources. Provide information on the following mineral resources within 0.5 mile of the proposed project area: a) Known mineral resources b) Active mining claims c) Active mines d) Resource recovery sites	5.12.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.12.2: Regulatory Setting	5.12.2
5.12.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for minerals.	5.12.2.1
5.12.3: Impact Questions	5.12.3
5.12.3.1: CEQA Impact Questions. The impact questions include all mineral resource impact questions in the current version of CEQA Guidelines, Appendix G.	5.12.3.1
5.12.3.2: Additional CEQA Impact Questions: None.	5.12.3.2
5.12.4: Impact Analysis	5.12.4
5.12.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.12.4.1
5.12.5: CPUC Draft Environmental Measures	5.12.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.12.6: Applicant-Proposed Measures	5.12.6 Also refer to Section 5.12.7 for PG&E's CMs
5.13: Noise	5.13
5.13.1: Environmental Setting	5.13.1
5.13.1.1: Noise-Sensitive Land Uses. Identify all noise sensitive land uses within 1,000 feet of the proposed project. Provide GIS data for sensitive receptors within 1,000 feet of the project.	5.13.1.1 Figure 5.13-1 GIS data provided under separate cover
5.13.1.2: Noise Setting. Provide the existing noise levels (L_{max}, L_{min}, L_{eq}, and L_{dn} sound level and other applicable noise parameters) at noise sensitive areas near the proposed project. All noise measurement data and the methodology for collecting the data will be provided in a noise study as an Appendix to the PEA.	5.13.1.2 Table 5.13-1 Table 5.13-2 Table 5.13-3 Attachment 5.13-A
5.13.2: Regulatory Setting	5.13.2
5.13.2.1: Regulatory Setting. Identify applicable state, and local laws, policies, and standards for noise.	5.13.2.1
5.13.3: Impact Questions	5.13.3
5.13.3.1: CEQA Impact Questions. The impact questions include all noise questions in the current version of CEQA Guidelines, Appendix G.	5.13.3.1
5.13.3.2: Additional CEQA Impact Questions: None.	5.13.3.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.13.4: Impact Analysis	5.13.4
5.13.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.13.4.1
Include the following information in the impact analysis:	
5.13.4.2: Noise Levels a) Identify noise levels for each piece of equipment that could be used during construction. b) Provide a table that identifies each phase of construction, the equipment used in each construction phase, and the length of each phase at any single location (see example in Table 7 below). c) Estimate cumulative equipment noise levels for each phase of construction. d) Include phases of operation if noise levels during operation have the potential to frequently exceed pre-project existing conditions. e) Identify manufacturer's specifications for equipment and describe approaches to reduce impacts from noise.	5.13.4.2 Table 5.13-6
5.13.4.3: Compressor Station Noise. Provide site plans of compressor stations or other noisy, permanent equipment, showing the location of the nearest noise sensitive areas within 1 mile of the proposed ROW. If new compressor station sites are proposed, measure or estimate the existing ambient sound environment based on current land uses and activities. For existing compressor stations (operated at full load), include the results of a sound level survey at the site property line and nearby noise-sensitive areas. Include a plot plan that identifies the locations and duration of noise measurements.	N/A
5.13.5: CPUC Draft Environmental Measures	5.13.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.13.6: Applicant-Proposed Measures	5.13.6 Also refer to Section 5.13.7 for PG&E's CMs
5.14: Population and Housing	5.14
5.14.1: Environmental Setting	5.14.1
5.14.1.1: Population Estimates. Identify population trends for the areas (county, city, town, census designated place) where the project would take place.	5.14.1.1 Table 5.14-1
5.14.1.2: Housing Estimates. Identify housing estimates and projections in areas where the project would take place.	5.14.1.2 Table 5.14-2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.14.1.3: Approved Housing Developments a) Provide the following information for all housing development projects within 1 mile of the proposed project that have been recently approved or may be approved around the PEA and application filing date: i. Project name ii. Location iii. Number of units and estimated population increase iv. Approval date and construction status v. Contact information for developer (provided in the public outreach Appendix) b) Ensure that the project information provided above is consistent with the PEA analysis of cumulative project impacts.	5.14.1.3 Attachment 5.14-A
5.14.2 Regulatory Setting	5.14.2
5.14.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations that apply to the project.	5.14.2.1
5.14.3: Impact Questions	5.14.3
5.14.3.1: CEQA Impact Questions. The impact questions include all population and housing impact questions in the current version of CEQA Guidelines, Appendix G.	5.14.3.1
5.14.3.2: Additional CEQA Impact Questions: None.	5.14.3.2
5.14.4: Impact Analysis	
5.14.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.14.4.1
Include the following information in the impact analysis:	
5.14.4.2: Impacts to Housing. Identify if any existing or proposed homes occur within the footprint of any proposed project elements or right-of-way. Describe housing impacts (e.g., demolition and relocation of residents) that may occur as a result of the proposed project.	5.14.4.2
5.14.4.3: Workforce Impacts. Describe on-site manpower requirements, including the number of construction personnel who currently reside within the impact area, who would commute daily to the site from outside the impact area or would relocate temporarily within the impact area. Chapter 4 of this document can be referenced as applicable. Identify any permanent employment opportunities that would be create by the project and the workforce conditions in the area that the jobs would be created.	5.14.4.3
5.14.4.4: Population Growth Inducing. Provide information on the project's growth inducing impacts, if any. The information will include, but is not necessarily limited to, the following: a) Any economic or population growth in the surrounding environment that will directly or indirectly result from the project b) Any obstacles to population growth that the project would remove	5.14.4.4 Also refer to Chapter 7

CPUC PEA Checklist	PEA Section, Table, or Figure Number
c) Any other activities directly or indirectly encouraged or facilitated by the project that would cause population growth leading to a significant effect on the environment, either individually or cumulatively	
5.14.5: CPUC Draft Environmental Measures	5.14.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.14.6: Applicant-Proposed Measures	5.14.6 Also refer to Section 5.14.7 for PG&E's CMs
5.15: Public Services	5.15
5.15.1: Environmental Setting	5.15.1.1
5.15.1.1: Service Providers a) Identify the following service providers that serve the project area and provide a map showing the service facilities that could serve the project: i. Police ii. Fire (identify service providers within local and state responsibility areas) iii. Schools iv. Parks v. Hospitals b) Provide the documented performance objectives and data on existing emergency response times for service providers in the area (e.g., police or fire department response times).	5.15.1.1 Figure 5.15-1 Table 5.15-1 Table 5.15-2 Also refer to Section 5.16
5.15.2: Regulatory Setting	5.15.2
5.15.2.1 Regulatory Setting. Identify any applicable federal, state or local laws or regulations for public services that apply to the project.	5.15.2.1
5.15.3: Impact Questions	5.15.3
5.15.3.1: CEQA Impact Questions. The impact questions include all public services impact questions in the current version of CEQA Guidelines, Appendix G.	5.15.3.1
5.15.3.2: Additional CEQA Impact Questions: None.	5.15.3.2
5.15.4: Impact Analysis	5.15.4
5.15.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.15.4.1 Also refer to Section 5.16
Include the following information in the impact analysis:	
5.15.4.2: Emergency Response Times a) Describe whether the project would impede ingress and egress of emergency vehicles during construction and operation. b) Include an analysis of impacts on emergency response times during project	5.15.4.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
construction and operation, including impacts during any temporary road closures. Describe approaches to address impacts on emergency response times.	
5.15.4.3: Displaced Population. If the project would create permanent employment or displace people, evaluate the impact of the new employment or relocated people on governmental facilities and services and describe plans to reduce the impact on public services.	5.15.4.3
5.15.5: CPUC Draft Environmental Measures	5.15.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.15.6: Applicant-Proposed Measures	5.15.6 Also refer to Section 5.15.7 for PG&E's CMs
5.16: Recreation	5.16
5.16.1: Environmental Setting	5.16.1
5.16.1.1: Recreational Setting a) Describe the regional and local recreation setting in the project area including: i. Any recreational facilities or areas within and surrounding the project area (approximately 0.5-mile buffer) including the recreational uses of each facility or area ii. Any available data on use of the recreational facilities including volume of use b) Provide a map (or maps) showing project features and recreational facilities and provide associated GIS data.	5.16.1.1 Figure 5.16-1 Table 5.16-1 Table 5.16-2 GIS data provided under separate cover
5.16.2: Regulatory Setting	5.16.2
5.16.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding recreation.	5.16.2.1
5.16.3: Impact Questions	5.16.3
5.16.3.1: CEQA Impact Questions. The impact questions include all recreation impact questions in the current version of CEQA Guidelines, Appendix G.	5.16.3.1
5.16.3.2: Additional CEQA Impact Questions: a) Would the project reduce or prevent access to a designated recreation facility or area? b) Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas? c) Would the project damage recreational trails or facilities?	5.16.3.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.16.4.1: Impact Analysis	5.16.4.1
5.16.4.1: Impact Analysis: Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.16.4.1 Also refer to Sections 5.1, 5.4, 5.5, 5.7, 5.14, and 5.16.1.1.1
5.16.4.2: Impact Details. Clearly identify the maximum extent of each impact, and when and where the impacts would or would not occur. Organize the impact assessment by project phase, project component, and/or geographic area, as necessary.	N/A
5.16.5: CPUC Draft Environmental Measures	5.16.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.16.6: Applicant-Proposed Measures	5.16.6 Also refer to Section 5.16.7 for PG&E's CMs
5.17: Transportation	5.17
5.17.1: Environmental Setting	5.17.1
5.17.1.1: Circulation System. Briefly describe the regional and local circulation system in the project area, including modes of transportation, types of roadways, and other facilities that contribute to the circulation system.	5.17.1.1
5.17.1.2: Existing Roadways and Circulation a) Identify and describe existing roadways that may be used to access the project site and transport materials during construction or are otherwise adjacent to or crossed by linear project features. Provide the following information for each road: i. Name of the road ii. Jurisdiction or ownership (i.e., State, County, City, private, etc.) iii. Number of lanes in both directions of travel iv. Existing traffic volume (if publicly available data is unavailable or significantly outdated, then it may be necessary to collect existing traffic counts for road segments where large volumes of construction traffic would be routed or where lane or road closures would occur) v. Closest project feature and distance b) Provide a supporting map (or maps) showing project features and the existing roadway network identifying each road described above. Provide associated GIS data. The GIS data should include all connected road segments within at least 5 miles of the project.	5.17.1.1 Figure 5.17-1 Figure 5.17-2 Table 5.17-1 Table 5.17-2 GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.17.1.3: Transit and Rail Services a) Identify and describe transit and rail service providers in the region. b) Identify any rail or transit lines within 1,000 feet of the project area. c) Identify specific transit stops, and stations within 0.5 mile of the project. Provide the frequency of transit service. d) Provide a supporting map (or maps) showing project features and transit and rail services within 0.5 mile of the project area. e) Provide associated GIS data.	5.17.1.2 GIS data provided under separate cover
5.17.1.4: Bicycle Facilities a) Identify and describe any bicycle plans for the region. b) Identify specific bicycle facilities within 1,000 feet of the project area. c) Provide a supporting map (or maps) showing project features and bicycle facilities. Provide associated GIS data.	5.17.1.4 GIS data provided under separate cover
5.17.1.5: Pedestrian Facilities a) Identify and describe important pedestrian facilities near the project area that contribute to the circulation system, such as important walkways. b) Identify specific pedestrian facilities that would be near the project, including on the road segments identified per 5.17.1.2. c) Provide a supporting map (or maps) showing project features and important pedestrian facilities. Provide associated GIS data.	5.17.1.5 GIS data provided under separate cover
5.17.1.6: Vehicle Miles Traveled (VMT). Provide the average VMT for the county(s) where the project is located.	5.17.1.7 Table 5.17-3
5.17.2: Regulatory Setting	5.17.2
5.17.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding transportation.	5.17.2.1
5.17.3: Impact Questions	5.17.3
5.17.3.1: CEQA Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G.	5.17.3.1
5.17.3.2: Additional CEQA Impact Questions: a) Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations? b) Would the project interfere with walking or bicycling accessibility? c) Would the project substantially delay public transit?	5.17.3.2
5.17.4: Impact Analysis	5.17.4
5.17.4.1: Impact Analysis. Provide an impact analysis for each significance criteria identified in Appendix G of the CEQA Guidelines for transportation and any additional impact questions listed above.	5.17.4.1 Table 5.17-4 Also refer to Sections 5.3, 5.16, 5.17.1.1,

CPUC PEA Checklist	PEA Section, Table, or Figure Number
	5.17.1.2, and 5.17.2.1.3
Include the following information in the impact analysis:	
5.17.4.2: Vehicle Miles Traveled (VMT) a) Identify whether the project is within 0.5 mile of a major transit stop or a high-quality transit corridor. b) Identify the number of vehicle daily trips that would be generated by the project during construction and operation by light duty (e.g., worker vehicles) and heavy-duty vehicles (e.g., trucks). Provide the frequency of trip generation during operation. c) Quantify VMT generation for both project construction and operation. d) Provide an excel file with the VMT assumptions and model calculations, including all formulas and values. e) Evaluate the project VMT relative to the average VMT for the area in which the project is located.	5.17.4.2 Table 5.17-4 Also refer to Attachment 5.3-A
5.17.4.3: Traffic Impact Analysis. Provide a traffic impact study. The traffic impact study should be prepared in accordance with guidance from the relevant local jurisdiction or Caltrans, where appropriate.	5.17.4.3
5.17.4.4: Hazards. Identify any traffic hazards that could result from construction and operation of the project. Identify any lane closures and traffic management that would be required to construct the project.	5.17.4.4
5.17.4.5: Accessibility. Identify any closures of bicycle lanes, pedestrian walkways, or transit stops during construction or operation of the project.	5.17.4.5
5.17.4.6: Transit Delay. Identify any transit lines that could be delayed by construction and operation of the project. Provide the maximum extent of the delay in minutes and the duration of the delay.	5.17.4.6 Also refer to Section 5.17.1.6
5.17.5: CPUC Draft Environmental Measures	5.17.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.17.6: Applicant-Proposed Measures	5.17.6 Also refer to Section 5.17.7 for PG&E's CMs
5.18: Tribal Cultural Resources	5.18
5.18.1: Environmental Setting	5.18.1
5.18.1.1: Outreach to Tribes. Provide a list of all tribes that are on the Native American Heritage Commission (NAHC) list of tribes that are affiliated with the project area. Provide a discussion of outreach to Native American tribes, including tribes notified, responses received from tribes, and information of potential tribal cultural resources provided by tribes. Any information of potential locations of tribal cultural resources	5.18.1.1 Also refer to Attachment 5.5-A

CPUC PEA Checklist	PEA Section, Table, or Figure Number
should be submitted in an Appendix under clearly marked confidential cover. Provide copies of all correspondence with tribes in an Appendix.	
5.18.1.2: Tribal Cultural Resources. Describe tribal cultural resources (TCRs) that are within the project area. a) Summarize the results of attempts to identify possible TCRs using publicly available documentary resources. The identification of TCRs using documentary sources should include review of archaeological site records and should begin during the preparation of the records search report (see Attachment 3). During the inventory phase, a formal site record would be prepared for any resource identified unless tribe's object. b) Summarize attempts to identify TCRs by speaking directly with tribal representatives.	5.18.1.2 Also refer to Attachment 5.5-A
5.18.1.3: Ethnographic Study. The ethnographic study should document the history of Native American use of the area and oral history of the area.	5.18.1.3
5.18.2: Regulatory Setting	5.18.2
5.18.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations for tribal cultural resources that apply to the project.	5.18.2.1
5.18.3: Impact Questions	5.18.3
5.18.3.1: CEQA Impact Questions. The impact questions include all tribal cultural resources impact questions in the current version of CEQA Guidelines, Appendix G.	5.18.3.1
5.18.3.2: Additional CEQA Impact Questions: None.	5.18.3.2
5.18.4: Impact Analysis	5.18.4
5.18.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.18.4.1
Include the following information in the impact analysis:	
5.18.4.2: Information Provided by Tribes. Include an analysis of any impacts that were identified by the tribes during the Applicant's outreach.	5.18.4.2
5.18.5: CPUC Draft Environmental Measures	5.18.5
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.18.6: Applicant-Proposed Measures	5.18.6 Also refer to Section 5.18.7 for PG&E's CMs
5.19: Utilities and Service Systems	5.19
5.19.1: Environmental Setting	5.19.1
5.19.1.1: Utility Providers. Identify existing utility providers and the associated infrastructure that serves the project area.	5.19.1.1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.19.1.2: Utility Lines. Describe existing utility infrastructure (e.g., water, gas, sewer, electrical, stormwater, telecommunications, etc.) that occurs in the project ROW. Provide GIS data and/or as-built engineering drawings to support the description of existing utilities and their locations.	5.19.1.2 Also refer to Section 5.9 GIS data provided under separate cover
5.19.1.3: Approved Utility Projects. Identify utility projects that have been approved for construction within the project ROW but that have not yet been constructed.	5.19.1.3
5.19.1.4: Water Supplies. Identify water suppliers and the water source (e.g., aqueduct, well, recycled water, etc.). For each potential water supplier, provide data on the existing water capacity, supply, and demand.	5.19.1.4
5.19.1.5: Landfills and Recycling. Identify local landfills that can accept construction waste and may service the project. Provide documentation of landfill capacity and estimated closure date. Identify any recycling centers in the area and opportunities for construction and demolition waste recycling.	5.19.1.5
5.19.2 Regulatory Setting	5.19.2.1
5.19.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations for utilities that apply to the project.	5.19.2.1.1
5.19.3: Impact Questions	5.19.3
5.19.3.1: CEQA Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G.	5.19.3.1
5.19.3.2: Additional CEQA Impact Question: Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?	5.19.3.2
5.19.4: Impact Analysis	5.19.4
5.19.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.19.4.1 Table 5.19-1 Also refer to Sections 5.19.1.2, 5.19.1.4 and 5.19.1.5 and Chapter 3
Include the following information in the impact analysis:	
5.19.4.2: Utility Relocation. Identify any project conflicts with existing utility lines. If the project may require relocation of existing utilities, identify potential relocation areas and analyze the impacts of relocating the utilities. Provide a map showing the relocated utility lines and GIS data for all relocations.	5.19.4.2
5.19.4.3: Waste a) Identify the waste generated by construction, operation, and demolition of the project. b) Describe how treated wood poles would be disposed of after removal, if	5.19.4.3 Table 5.19-1

CPUC PEA Checklist	PEA Section, Table, or Figure Number
applicable. c) Provide estimates for the total amount of waste materials to be generated by waste type and how much of it would be disposed of, reused, or recycled.	
5.19.4.4: Water Supply a) Estimate the amount of water required for project construction and operation. Provide the potential water supply source(s). b) Evaluate the ability of the water supplier to meet the project demand under a multiple dry year scenario. c) Provide a discussion as to whether the proposed project meets the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912. d) If determined to be necessary under Water Code Section 10912, submit a Water Supply Assessment to support conclusions that the proposed water source can meet the project's anticipated water demand, even in multiple dry year scenarios. Water Supply Assessments should be approved by the water supplier and consider normal, single-dry, and multiple-dry year conditions.	5.19.4.4 Also refer to Sections 5.19.1.4 and 5.19.4.1
5.19.4.5: Cathodic Protection. Analyze the potential for existing utilities to experience corrosion due to proximity to the proposed project. Identify cathodic protection measures that could be implemented to reduce corrosion issues and where the measures may be applied.	5.19.4.5 Also refer to Section 5.19.1.4
5.19.5: CPUC Draft Environmental Measures	5.19.5 Also refer to Section 5.19.6
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.19.6: Applicant-Proposed Measures	5.19.6 Also refer to Section 5.19.7 for PG&E's CMs
5.20: Wildfire	5.20
5.20.1: Environmental Setting	5.20.1
5.20.1.1: High Fire Risk Areas and State Responsibility Areas a) Identify areas of high fire risk or State Responsibility Areas (SRAs) within the project area. Provide GIS data for the Wildland Urban Interface (WUI) and Fire Hazard Severity Zones (FHSZ) mapping along the project alignment. Include areas mapped by CPUC as moderate and high fire threat districts as well as areas mapped by CalFire. b) Identify any areas the utility has independently identified as High FHSZ known to occur within the proposed project vicinity.	5.20.1.1 Figure 5.20-2 GIS data provided under separate cover

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.20.1.2: Fire Occurrence. Identify all recent (within the last 10 years) large fires that have occurred within the project vicinity. For each fire, identify the following: a) Name of the fire b) Location of fire c) Ignition source and location of ignition d) Amount of land burned e) Boundary of fire area in GIS	5.20.1.3 Figure 5.20-4 GIS data provided under separate cover
5.20.1.3: Fire Risk. Provide the following information for assessment of baseline fire risk in the area: a) Provide fuel modeling using Scott Burgan fuel models, or other model of similar quality. b) Provide values of wind direction and speed, relative humidity, and temperature for representative weather stations along the alignment for the previous 10 years, gathered hourly. c) Digital elevation models for the topography in the project region showing the relationship between terrain and wind patterns, as well as localized topography to show the effects of terrain on wind flow, and on a more local area to show effect of slope on fire spread. d) Describe vegetation fuels within the project vicinity and provide data in map format for the project vicinity. USDA Fire Effects Information System or similar data source should be consulted to determine high-risk vegetation types. Provide the mapped vegetation fuels data in GIS format.	5.20.1.2 Figure 5.20-1 Figure 5.20-2 Figure 5.20-3 Attachment 5.20-A GIS data provided under separate cover
5.20.1.4: Values at Risk. Identify values at risk along the proposed alignment. Values at risk may include: Structures, improvements, rare habitat, other values at risk, (including utility-owned infrastructure) within 1000 feet of the project. Provide some indication as to its vulnerability (wood structures vs. all steel features). Communities and/or populations near the project should be identified with their proximity to the project defined.	5.20.1.5 Also refer to Section 5.4
5.20.1.5: Evacuation Routes. Identify all evacuation routes that are adjacent to or within the project area. Identify any roads that lack a secondary point of access or exit (e.g., cul-de-sacs).	5.20.1.6
5.20.2: Regulatory Setting	5.20.2
5.20.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for wildfire.	5.20.2.1
5.20.2.2: CPUC Standards. Identify any CPUC standards that apply to wildfire management of the new facilities.	5.20.2.2
5.20.3: Impact Questions	
5.20.3.1: CEQA Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G.	5.20.3.1
5.20.3.2: Additional CEQA Impact Questions: None.	5.20.3.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
5.20.4: Impact Analysis	5.20.4
5.20.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.20.4.1 Attachment 5.20-A Also refer to Section 5.9 and Chapter 3
Include the following information in the impact analysis:	
5.20.4.2: Fire Behavior Modeling. For any new electrical lines, provide modeling to support the analysis of wildfire risk.	5.20.4.2 Attachment 5.20-A
5.20.4.3: Wildfire Management. Describe approaches that would be implemented during operation and maintenance to manage wildfire risk in the area. Provide a copy of any Wildfire Management Plan.	5.20.4.3 Attachment 5.20-B
5.20.5: CPUC Draft Environmental Measures	5.20.5 Also refer to Section 5.20.6
Refer to Attachment 4, CPUC Draft Environmental Measures.	
5.20.6: Applicant-Proposed Measures	5.20.6 Also refer to Section 5.20.7 for PG&E's CMs
5.21: Mandatory Findings of Significance	5.21
5.21.1: Impact Assessment for Mandatory Findings of Significance. Provide an impact analysis for each of the mandatory findings of significance provided in Appendix G of the CEQA Guidelines. The impact analysis can reference relevant information and conclusion from the biological resources, cultural resources, air quality, hazards, and cumulative sections of the PEA, where applicable.	5.21.3 Also refer to Sections 5.3, 5.4, 5.5, 5.7, 5.9, 5.13, and 5.17 and Chapter 7
6.0: Comparison of Alternatives	Chapter 6 Also refer to Chapter 4
6.1: Alternatives Comparison a) Compare the ability of each alternative described in Chapter 4 against the proposed project in terms of its ability to avoid or reduce a potentially significant impact. The alternatives addressed in this section will each be: i. Potentially feasible ii. Meet the underlying purpose of the proposed project iii. Meet most of the basic project objectives, and iv. Avoid or reduce one or more potentially significant impacts. b) The relative effect of the various potentially significant impacts may be compared using the following or similar descriptors and an accompanying analysis:	6.1 Also refer to Chapters 4 and 5

CPUC PEA Checklist	PEA Section, Table, or Figure Number
i. Short-term versus long-term impacts ii. Localized versus widespread impacts iii. Ability to fully mitigate impacts c) Impacts that the Applicant believes would be less than significant with mitigation may also be included in the analysis, but only if the steps listed above fail to distinguish among the remaining few alternatives.	
6.2: Alternatives Ranking. Provide a detailed table that summarizes the Applicant's comparison results and ranks the alternatives in order of environmental superiority.	6.2 6.3 6.4 Table 6-1
7.0: Cumulative and Other CEQA Considerations	Chapter 7
7.1: Cumulative Impacts	7.1
7.1.1: List of Cumulative Projects a) Provide a detailed table listing past, present, and reasonably foreseeable future projects within and surrounding the project area (approximately 2-mile buffer). The following information should be provided for each project in the table: I. Project name and type II. Brief description of the project location(s) and associated actions III. Distance to and name of the nearest project component IV. Project status and anticipated construction schedule V. Source of the project information and date last checked (for each individual project), including links to any public websites where the information was obtained so it can be reviewed and updated (the project information should be current when the PEA is filed) b) Provide a supporting map (or maps) showing project features and cumulative project locations and/or linear features. Provide associated GIS data.	7.1.1 Figure 7-1 Table 7-1 GIS data provided under separate cover
7.1.2: Geographic Scope. Define the geographic scope of analysis for each resource topic. The geographic scope of analysis for each resource topic should consider the extent to which impacts can be cumulative. For example, the geographic scope for cumulative noise impacts would be more limited in scale than the geographic scope for biological resource impacts because noise attenuates rapidly with distance. Explain why the geographic scope is appropriate for each resource.	7.1.2 Table 7-2 Also refer to Section 7.1.3
7.1.3: Cumulative Impact Analysis. Provide an analysis of cumulative impacts for each resource topic included in Chapter 5. Evaluate whether the proposed project impacts are cumulatively considerable for any significant cumulative impacts.	7.1.3
7.2: Growth-Inducing Impacts	7.2
7.2.1: Growth-Inducing Impacts. Provide an evaluation of the following potential growth-inducing impacts: a) Would the proposed project foster any economic or population growth, either directly or indirectly, in the surrounding environment?	7.2

CPUC PEA Checklist	PEA Section, Table, or Figure Number
b) Would the proposed project cause any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)? c) Would the proposed project remove any obstacles to population growth? d) Would the proposed project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively?	
8.0: List of Preparers	Chapter 8
8.1: List of Preparers. Provide a list of persons, their organizations, and their qualifications for all authors and reviewers of each section of the PEA.	Chapter 8
9.0: References	Chapter 9
9.1: Reference List a) Organize all references cited in the PEA by section within a single chapter called "References." b) Within the References chapter, organize all of the Chapter 5 references under subheadings for each resource area section.	Chapter 9
9.2: Electronic References a) Provide complete electronic copies of all references cited in the PEA that cannot be readily obtained for free on the Internet. This includes any company-specific documentation (e.g., standards, policies, and other documents). b) If the reference can be obtained on the Internet, the Internet address will be provided.	Chapter 9 References not easily accessible provided under separate cover

CHAPTER 3 – PROJECT DESCRIPTION

This chapter defines the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) location, objectives, and components; the Proposed Project includes LSPGC's Collinsville Substation and 7.5-mile long transmission line as well as new transmission lines and modifications to existing lines and substations that must be made by Pacific Gas and Electric Company (PG&E) to interconnect Collinsville Substation to PG&E's electrical system (PG&E's Interconnection Facilities). This chapter provides an overview of the existing electric system; and explains how the Proposed Project would be implemented and its place within California's electrical transmission system. This chapter also identifies any permits or other approvals that may be needed to implement the Proposed Project. Lastly, this chapter identifies measures proposed by LSPGC and/or PG&E to avoid or minimize potential environmental impacts.

The applicant-proposed measures (APMs) and any mitigation measures imposed as part of this application proceeding would not apply to PG&E's scope of work. Although PG&E's Interconnection Facilities are part of the Proposed Project being evaluated under California Environmental Quality Act (CEQA), PG&E's construction is not part of this application and does not require authorization under this specific California Public Utilities Commission (CPUC) decision. However, PG&E's work to interconnect the LSPGC facilities into PG&E's electrical system would be subject to all applicable regulatory requirements. In addition, PG&E would implement Construction Measures (CMs) during construction of its Proposed Project components, and these CMs would be considered by the CPUC in its environmental review of the Proposed Project.

3.1 PROJECT OVERVIEW

3.1.1 Summary of Proposed Project

As detailed in Chapter 2 – Introduction, the Proposed Project addresses multiple overloads on the 230 kV corridor between PG&E's existing Contra Costa and Newark substations. The Proposed Project would also provide additional supply from the 500 kV Vaca-Dixon Transmission System into the northern Greater Bay Area (Bay Area) to increase reliability in the area, as well as advance additional renewable energy generation in the Bay Area.

The California Independent System Operators (CAISO) 2021-2022 Transmission Plan identified the Proposed Project as a needed upgrade to the California electric grid.[1] The 2021-2022 Transmission Plan was based on the requirement to add approximately 1,000 megawatts of new resources per year in the state over the 10-year planning period. CAISO's Policy-Driven Need Assessment identified the Proposed Project as necessary to ensure deliverability of resources to meet policy goals and resource adequacy needs of the state. The Policy-Driven Need Assessment is an iterative process, encompassing three studies: a reliability assessment, an on-peak deliverability assessment, and an off-peak deliverability assessment. The key objectives of the Policy-Driven Need Assessment are to assess the transmission impacts of portfolio resources,

[1] The Pittsburg 115 kV Bus Reactor identified in CAISO's 2022-2023 Transmission Plan is not part of the Proposed Project. The 115 kV Bus Reactor would be permitted and built separately by PG&E.

identify necessary upgrades to ensure reliability and minimize excessive curtailment, and inform future portfolio development. The Proposed Project would address transmission constraints in the base portfolio (i.e., Cayetano-North Dublin 230 kV Transmission Line, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line, and Las Positas-Newark 230 kV Transmission Line) identified by the assessment.

The main components of the Proposed Project include the following:

- Constructing a new 500/230 kV substation, herein referred to as the proposed LSPGC Collinsville Substation.
- Constructing two new approximately 1.5-mile-long, single-circuit 500 kV transmission line segments extending to interconnect (or "loop") PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line into the proposed LSPGC Collinsville Substation.
- Constructing a new approximately 6-mile-long, double-circuit 230 kV transmission line to connect the proposed LSPGC Collinsville Substation to PG&E's existing Pittsburg Substation.
- Extending and connecting PG&E's existing 12 kV Peabody 2107 Circuit distribution line to the proposed LSPGC Collinsville Substation.

Constructing two new telecommunications paths to the proposed LSPGC Collinsville Substation—a new microwave tower would be constructed and owned by PG&E at the substation and a new fiber optic path would be installed between existing fiber in the City of Pittsburg and the proposed substation.

In April 2024, 2023-2024 Transmission Plan was approved by CAISO, and it identified the Collinsville 230 kV Reactor Project as a needed near-term policy driven upgrade to the proposed Collinsville-Pittsburg 230 kV transmission lines. The Collinsville 230 kV Reactor Project includes two 20-ohm series reactors per phase, to be located within the proposed LSPGC Collinsville Substation fence line, and would be constructed concurrently with the Collinsville 500/230 kV Substation Project. As such, LSPGC included the components associated with the Collinsville 230 kV Reactor Project as part of the Collinsville Substation 500/230 kV Substation Project's PEA. However, because the Collinsville 230 kV Reactor Project is considered a separate project by CAISO (approved in different Transmission Plans) it would be processed through a separate GO 131-D application and proceeding with the CPUC but would be included in the CPUC's CEQA analysis for the larger Collinsville 500/23 kV Substation Project.

3.1.2 Geographical Location of the Proposed Project

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. As depicted in Figure 3-1: Project Overview Map, the proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The Proposed Project would include two single-circuit 500 kV transmission lines that would be extended to interconnect PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line to the proposed LSPGC Collinsville Substation. A new double-circuit 230 kV transmission line (the proposed LSPGC 230 kV Transmission Line) would travel from the proposed LSPGC

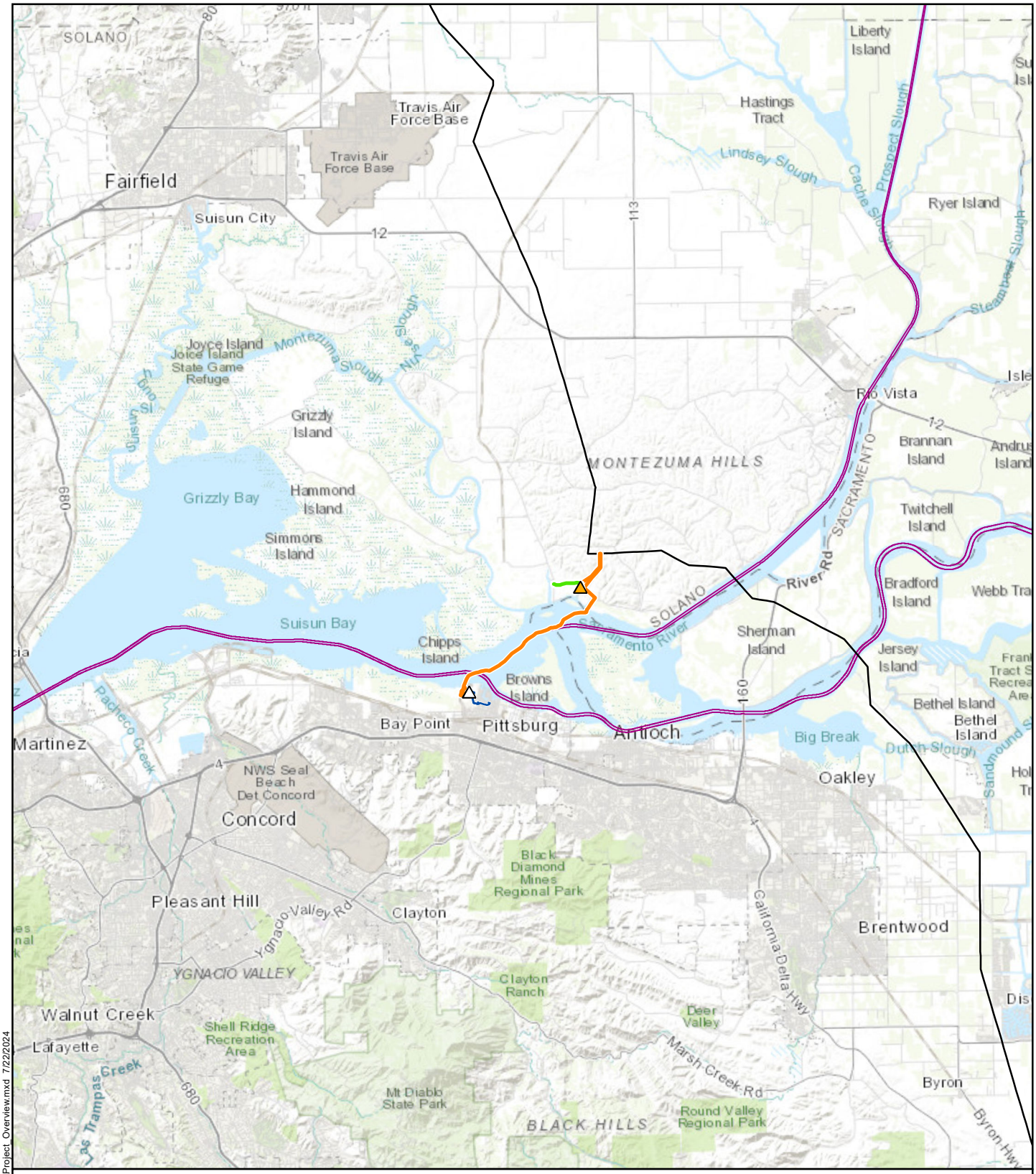

Figure 3-1: Project Overview Map **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC Collinsville Substation
- Existing PG&E Pittsburg Substation
- Proposed Project Transmission Lines
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Navigational Channel

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Collinsville Substation, travel under the Sacramento-San Joaquin River Delta (Delta) waterways, and continue in an underground configuration before connecting to PG&E's existing Pittsburg Substation in the City of Pittsburg in northern Contra Costa County.

The current land uses around the proposed LSPGC Collinsville Substation site include undeveloped areas (e.g., Suisun Marsh and the Delta), utility operations, residences, wind farms, and agricultural lands. The proposed substation site is also within the Collinsville-Montezuma Hills Wind Resource Area in Solano County, which is an area used primarily for energy facilities and farming (Sacramento Municipal Utility District [SMUD] 2023). The proposed LSPGC Collinsville Substation site is on property owned by Flannery Associates, LLC, which recently purchased thousands of acres of land in Solano County (including many former SMUD properties in the Collinsville area). New rights-of-way (ROWs) would be required for all transmission lines, and land rights would be acquired by LSPGC for the proposed Collinsville Substation. PG&E's existing Pittsburg Substation is surrounded by industrial land uses bordered by recreational areas, low- and medium-density residential areas, and commercial land uses. More details on the land uses in the Proposed Project area are provided in Section 5.11 Land Use and Planning.

3.2 EXISTING AND PROPOSED SYSTEM

3.2.1 Existing System

3.2.1.1 Existing Utility System

The Proposed Project is located within an existing regional transmission system that provides electricity to the greater Bay Area. The existing utility system in the Proposed Project vicinity includes, but is not limited to, the following PG&E substations and transmission infrastructure:

- Vaca Dixon Substation (500/230 kV),
- Pittsburg Substation (230/115 kV),
- Tesla Substation (500/230 kV), and
- Vaca Dixon-Tesla 500 kV Transmission Line.

The current system delivers electricity to population centers within the greater Bay Area. A schematic diagram of the existing utility system is provided in Figure 3-2: Existing System Line Diagram.

3.2.2 Proposed Project System

The Proposed Project would address transmission limitations identified by CAISO in the base portfolio components—the Cayetano-North Dublin 230 kV Transmission Line, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line, and Las Positas-Newark 230 kV Transmission Line—by providing an additional supply path to the greater Bay Area. As part of the Proposed Project, two new single-circuit 500 kV transmission lines would be extended to interconnect PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line to the proposed LSPGC Collinsville 500/230kV Substation. Additionally, the proposed double-circuit 230 kV transmission line would connect the proposed LSPGC Collinsville Substation to PG&E's existing Pittsburg Substation. These facilities would create a loop for reliability. These Proposed Project components are described in more detail under the subheadings that follow. Figure 3-3: Proposed System Line

Diagram shows how the facilities would be configured after implementation of the Proposed Project. Attachment 3-A: Detailed Route Map contains maps of the existing facilities that would be modified by the Proposed Project; geographic information system data is provided under separate electronic cover. The same users of the system energy would be served by the system following the implementation of the Proposed Project.

3.2.2.1 Proposed Project System by Component

3.2.2.1.1 LSPGC Collinsville Substation

The initial buildout of the proposed LSPGC Collinsville Substation would be a breaker-and-a-half (BAAH) configuration with two 500/230 kV transformer banks, two 230 kV bays with six circuit breakers, and two 500 kV bays with six circuit breakers. The ultimate configuration, per the CAISO specifications for future buildout, includes adding two 500 kV bays with six circuit breakers and three 230 kV bays with nine circuit breakers. The substation footprint depicted in Figure 3-4: Proposed Substation General Arrangement does not depict the expansion area for the ultimate buildout. Each 500/230 kV transformer bank would consist of three single phase 500 megavolt-ampere (MVA) transformers, providing 1,500 MVA. A 3,000 ampere (A), 16.1-ohm series capacitor would be installed at the proposed LSPGC Collinsville Substation, on PG&E's existing Vaca Dixon-Telsa 500 kV Transmission Line, as depicted in Figure 3-4: Proposed Substation General Arrangement to provide series compensation.

3.2.2.1.2 PG&E 500 kV Interconnection

Two approximately 1.5-mile-long single-circuit 500 kV overhead transmission line extensions (also referred to as the proposed PG&E 500 kV Interconnection) would be constructed to interconnect PG&E's existing Vaca-Dixon Tesla 500 kV Transmission Line to the proposed LSPGC Collinsville Substation. The interconnection would be supported by approximately 13 new lattice steel towers (LSTs) and would require the removal of approximately one existing LST.

3.2.2.1.3 LSPGC 230 kV Transmission Line

The LSPGC 230 kV Transmission Line would connect the proposed LSPGC Collinsville Substation to PG&E's existing Pittsburg Substation. This Proposed Project component can be divided into three distinct segments—overhead, submarine, and underground—as described in the subsections that follow. These segments are depicted on Figure 3-1: Project Overview Map and shown in more detail in Attachment 3-A: Detailed Route Map.

Overhead Segment

The overhead segment of the proposed LSPGC 230 kV Transmission Line (also referred to as the proposed LSGPC 230 kV Overhead Segment) would consist of an approximately 1-mile-long double-circuit line connecting the proposed LSPGC Collinsville Substation to the submarine segment. This segment would be supported by approximately four pier-mounted tubular steel poles (TSPs), approximately two directly embedded TSPs, and one guyed six-pole dead-end structure. The overhead segment would end at a single in-river transition structure located along the north side of the Sacramento River. At the transition structure, the line would transition the overhead conductors to submarine cables.

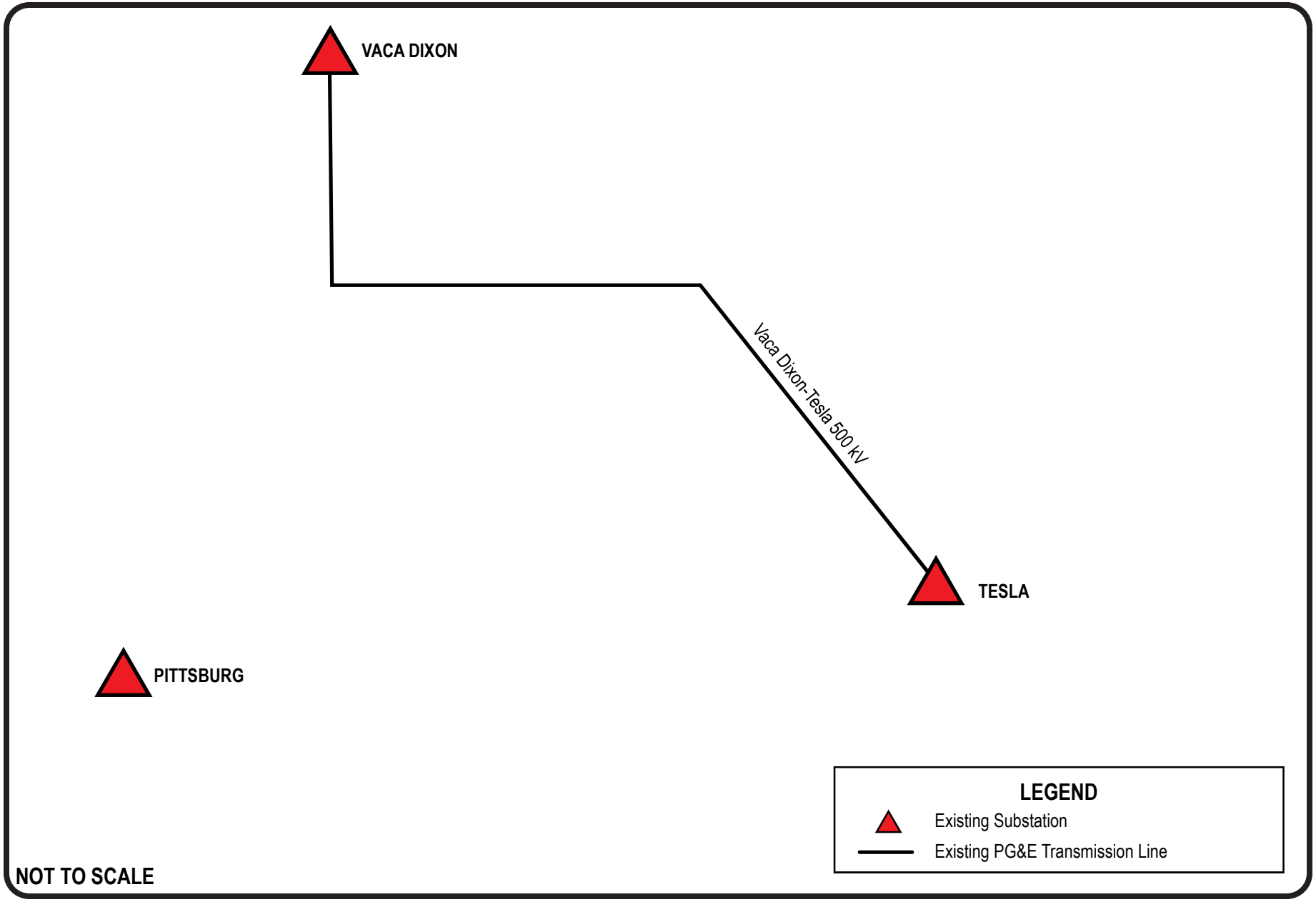

Figure 3-2: Existing System Line Diagram

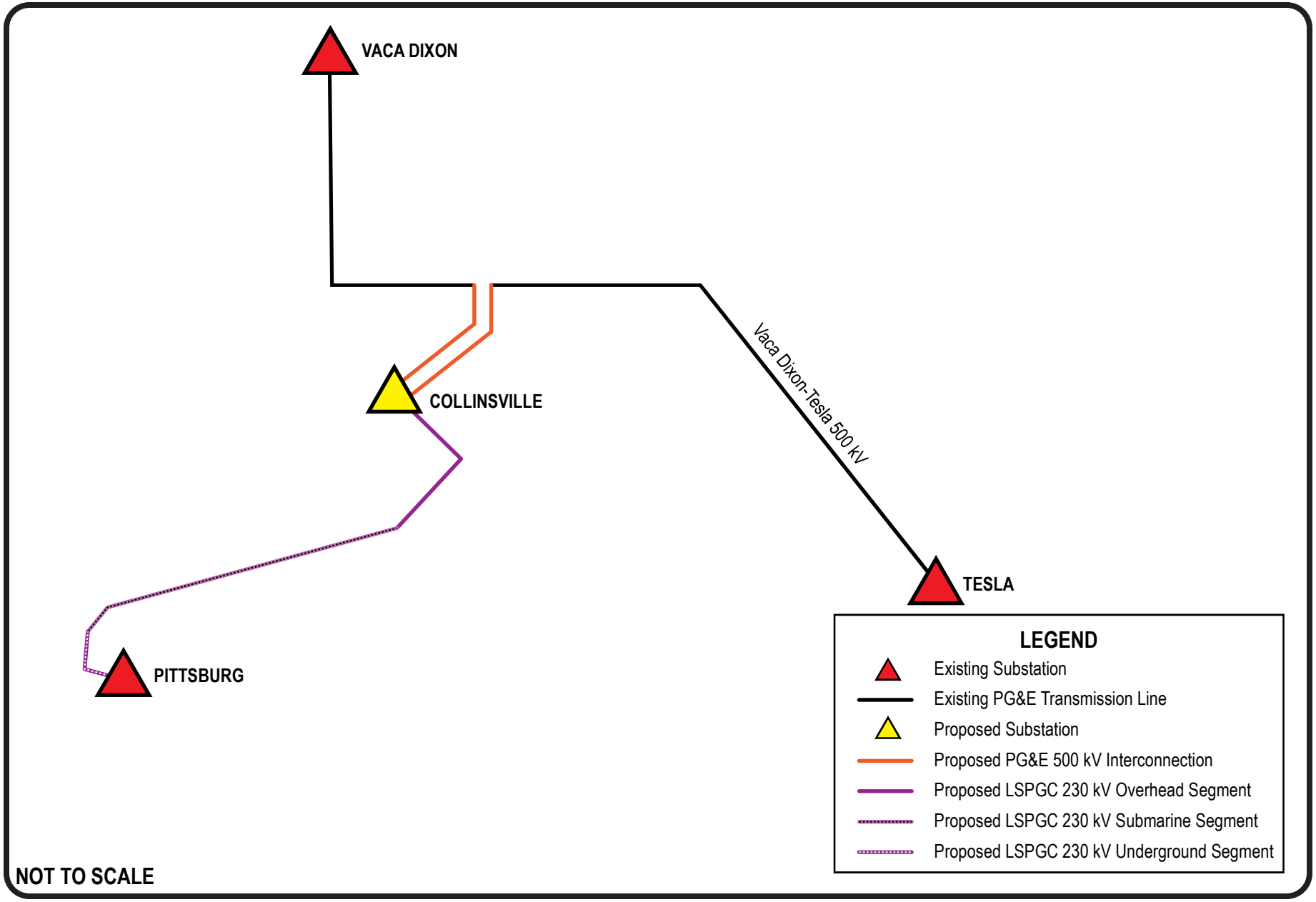

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Figure 3-3: Proposed System Line Diagram

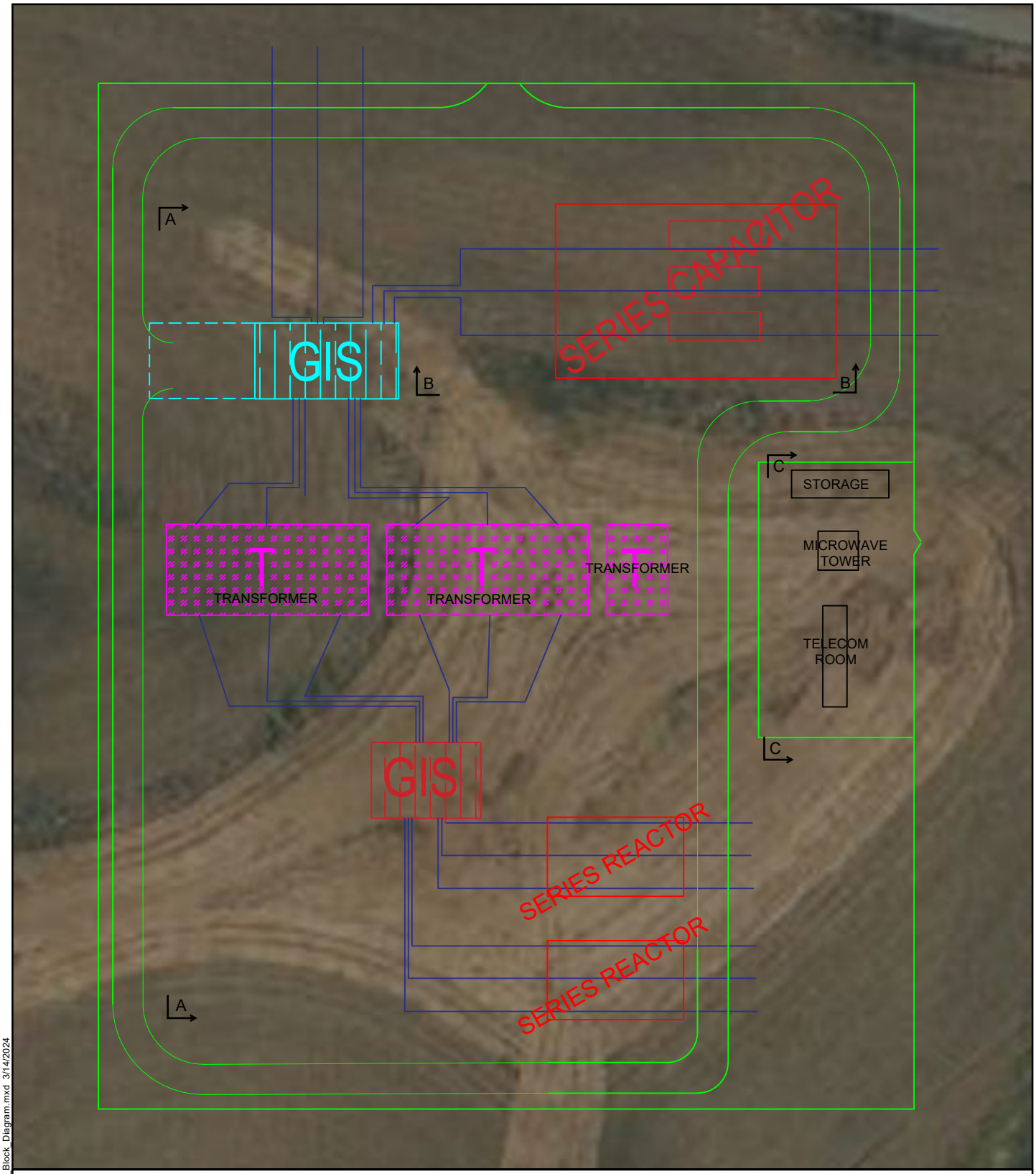

Figure 3-4: Proposed Substation General Arrangement **Collinsville 500/230 Kilovolt Substation Project**

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Submarine Segment

The submarine segment (also referred to as the proposed LSPGC 230 kV Submarine Segment) would begin at the in-river transition structure where up to six approximately 4.5-mile-long submarine cables would be installed between 6 and 15 feet below the river's sediment surface in a generally southwesterly direction toward the City of Pittsburg. The submarine cables would terminate at an onshore underground utility vault, completing the submarine segment.

Underground Segment

The underground segment (also referred to as the proposed LSPGC 230 kV Underground Segment) would begin at the onshore underground utility vault where the submarine cables would transition to underground transmission cables. From that point, one approximately 1,070-foot duct bank and a second approximately 2,000-foot duct bank would be constructed between the transition vault and the fence line of PG&E's existing Pittsburg Substation. The cables would connect to two new riser structures prior to entering and terminating at PG&E's existing Pittsburg Substation.

3.2.2.1.4 PG&E Substation Modifications

PG&E's existing Pittsburg Substation would be modified by shifting line positions, bus work, and modifying electrical equipment to facilitate the connection of the proposed LSPGC 230 kV Transmission Line. In addition, PG&E's existing Vaca Dixon and Tesla substations would receive modifications to their bus structures and electrical equipment to accommodate the proposed PG&E 500 kV Interconnection. All modifications would be confined within the existing substation fence lines.

3.2.2.2 System Capacities

The proposed LSPGC Collinsville Substation would be rated at 4,000 A. The proposed LSPGC 230 kV Transmission Line would be rated at 2,100 A during normal conditions and 3,500 A under long-term emergency conditions. The PG&E 500 kV Interconnection's expected minimum line capacity would be 2,100 A under normal conditions and 3,500 A under longer-term (i.e., 4-hour) emergency conditions. The Proposed Project would address constraints impacting the deliverability of the renewable and energy storage portfolio resources during on-peak conditions. It also resolves other constraints in the Greater Bay Area. In the transmission capability assessment, which is an input to the CPUC Integrated Resource Planning (IRP) process, CAISO has estimated a substantial increase in transmission capability resulting from the Proposed Project's inclusion. This enhancement effectively eliminates multiple constraints within the Greater Bay Area. While the Proposed Project is expected to increase the transmission capability of the surrounding system, it is not expected to increase the capacity of the existing facilities.

3.2.3 System Reliability

The Proposed Project was identified by CAISO in its 2021-2022 Transmission Plan as a policy upgrade to address transmission constraints identified in the policy on-peak deliverability assessment in the greater Bay Area, as well as to allow advancement of renewable energy generation. In its 2021-2022 planning cycle, CAISO evaluated upgrades needed to successfully meet California's policy goals, in addition to examining conventional grid reliability requirements and projects that could bring economic benefits to consumers. CAISO's analysis,

conducted through an open and stakeholder-inclusive planning process, led to the identification of the need for the Proposed Project as part of a comprehensive solution (relying in part on other upgrades already identified to meet reliability needs notwithstanding state policy objectives) to mitigate thermal overloading of the Cayetano-North Dublin 230 kV Transmission Line under N-2 conditions, Lone Tree-USWP-JRW-Cayetano 230 kV Transmission Line under normal (N-0) conditions, and Las Positas-Newark 230 kV Transmission Line under N-2 conditions, which are limiting the deliverability of renewable and energy storage portfolio resources (CAISO 2022). As a result, the need for a new 500/230 kV substation and double-circuit 230 kV transmission line was identified specifically to address multiple overloads on the 230 kV corridor between Contra Costa and Newark substations under N-0, N-1, and N-2 contingency conditions,[2] and to provide additional supply from the 500 kV system into the greater Bay Area to increase reliability to the area and advance additional renewable generation in the northern area.

3.2.4 Planning Area

The Proposed Project would support the existing regional transmission system that provides electricity to the greater Bay Area. Therefore, the system planning area served by the Proposed Project is identified as the "greater Bay Area." The term "regional transmission system" is used to describe the network that provides electricity to this planning area. The larger, regional system that provides electricity to all PG&E's customers is identified as the "bulk PG&E transmission system."

3.3 PROJECT COMPONENTS

3.3.1 Preliminary Design and Engineering

The main Proposed Project component includes the proposed LSPGC Collinsville Substation and the proposed LSPGC 230 kV Transmission Line. The Proposed Project would require the extension of one existing PG&E 500 kV transmission line (resulting in two extensions) to interconnect with the proposed LSPGC Collinsville Substation, as well as the proposed modification of PG&E's existing Pittsburg Substation. Attachment 3-A: Detailed Route Map identifies the locations of the major Proposed Project components, as well as work areas and access roads. The individual components of the Proposed Project are discussed in Section 3.3.4 Proposed Facilities.

LSPGC has completed approximately 30 percent of the engineering design, and PG&E has completed approximately 30 percent of the engineering design on the Proposed Project. As such, the information in this document is based on preliminary engineering designs and is subject to change based on additional and/or final engineering designs; further studies to be performed by PG&E; regulatory requirements; conditions on the ground; and/or ongoing coordination discussions among LSPGC, PG&E, the CPUC, and CAISO.

[2] Normal or N-0 conditions refer to when the electric system is functioning normally and is not experiencing outages. N-1 contingency refers to the first contingency, or an outage occurring to a single component (e.g., a transformer or transmission circuit) of the electric system. N-2 contingency refers to when an outage occurs to two components of the electric system (CAISO 2021).

3.3.2 Segments, Components, and Phases

All components of the Proposed Project would be installed during a single phase of construction. Each Proposed Project component's area or length is presented in Table 3-1: Proposed Project Component Summary. The Proposed Project's components are described in the subsections that follow and are depicted in Figure 3-1: Project Overview Map.

Table 3-1: Proposed Project Component Summary

Proposed Project Component	Approximate Size/Length
LSPGC Collinsville Substation	11 acres
PG&E 500 kV Interconnection	2.8 miles
LSPGC 230 kV Transmission Line	5.6 miles
PG&E 12 kV Distribution Line	0.9 mile
LSPGC Telecommunications Line	1.2 miles

Note: PG&E's existing substations would be modified within their existing property lines.

3.3.3 Existing Facilities

3.3.3.1 LSPGC Facilities

LSPGC does not have any existing facilities in the Proposed Project area.

3.3.3.2 PG&E Facilities

PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line would be modified and extended as part of the Proposed Project. The transmission line modifications would involve removing approximately one existing structure and approximately 200 feet of existing conductor to accommodate the interconnection, as described in more detail in Section 3.3.4.2 Proposed PG&E Facilities. PG&E's existing transmission line is supported by galvanized steel LSTs with a dull gray finish. Details regarding the existing ROW, as well as structures that would be removed or modified, are provided in Table 3-2: Existing Station Specifications. PG&E's existing transmission line contains three sets of double-bundled 2300 all-aluminum conductors. The line also supports a 7#8 Alumoweld overhead ground wire.

Table 3-2: Existing Station Specifications

Station Name	Approximate Size (acres)	Approximate Length (feet)	Approximate Width (feet)
Pittsburg Substation	28.7	1,820	1,050
Vaca Dixon Substation	66.8	4,000	1,925
Tesla Substation	75.9	2,060	2,040

PG&E's existing Pittsburg, Vaca Dixon, and Tesla substations are located in the Proposed Project vicinity and would be modified as part of the Proposed Project. The modifications at PG&E's existing Pittsburg Substation would include the addition of two new 230 kV dead-end

structures constructed on the west side of the substation to interconnect the proposed LSPGC 230 kV Transmission Line. PG&E would be responsible for the physical substation modifications.

PG&E's existing Pittsburg Substation structures are grey in color. The substation has existing lighting, which includes typical security lighting, that conforms to the National Electric Safety Code (NESC) requirements and other applicable outdoor lighting codes. The location of this facility is depicted in Attachment 3-A: Detailed Route Map.

The proposed modifications to PG&E's existing Vaca Dixon Substation would include potential modifications to the telecommunication equipment (e.g., microwave modifications, fiber modifications), electrical equipment, line protection relays, Fixed Series Capacitor (FSC), and bus structures.

The proposed modifications to PG&E's existing Tesla Substation would include potential modifications to the telecommunication equipment (e.g., microwave modifications, fiber modifications), electrical equipment, line protection relays, and bus structures.

Section 3.2.1 Existing System provides additional details on the Proposed Project and its function within PG&E's existing regional transmission system.

3.3.4 Proposed Facilities

3.3.4.1 LSPGC Facilities

3.3.4.1.1 Proposed LSPGC Collinsville Substation

The proposed LSPGC Collinsville Substation would contain 500 kV gas-insulated switchgear (GIS), 230 kV GIS, and associated facilities, occupying approximately 11 acres. Additional activities on the site, including the use of a staging area, would require grading and temporary disturbance of an additional approximately 21 acres. The proposed LSPGC Collinsville Substation[3] would include the following:

- Lightning shielding masts;
- 500 kV GIS with six 500 kV sulfur hexafluoride (SF_6 gas-insulated circuit breakers and associated disconnect switches, current transformers, and voltage transformers;
- One 500 kV series capacitors;
- 500 kV surge arresters;
- 500 kV SF_6 gas-insulated bus;

[3] LSPGC would acquire the SF_6 insulated equipment prior to the phase-out dates listed in Tables 1 and 2 in Title 17, Section 95352 of the California Code of Regulations (CCR). The earliest phase-out date that would apply to the proposed LSPGC Collinsville Substation would be January 1, 2027. As noted in Table 3-12: Proposed Construction Schedule, construction of the Proposed Project would commence in May 2026, before the earliest potentially applicable phase-out date.

- 230 kV GIS with six 230 kV SF_6 gas-insulated circuit breakers and associated disconnect switches, current transformers, and voltage transformers;
- 230 kV surge arresters;
- 230 kV group-operated disconnect switches;
- 230kV potential transformers;
- 230 kV station service transformers;
- 230 kV SF_6 gas-insulated bus;
- Two 230 kV 20-ohm series reactors;[4]
- Seven single-phase step-down mineral oil-immersed type autotransformers:
  - Nominal (L-L) voltage: 535 kV to 235 kV,
  - Operating (L-L) voltage: 535 kV to 235 kV, and
  - 300/375/500 MVA (per phase);
- PG&E-owned microwave tower for the 500 kV telecommunications paths;
- PG&E Communications enclosure;
- Optical ground wire (OPGW) fiber cables for the 230 kV telecommunications path;
- A Supervisory Control and Data Acquisition (SCADA) system consisting of fully redundant servers, power supplies, and Ethernet Local Area Network (LAN) and Wide Area Network (WAN) connections, routers, firewalls, and switches;
- Two control enclosures (located in the GIS enclosure);
- Two dead-ends for the 500 kV transmission lines;
- Two dead-ends for the 230 kV transmission line; and
- Heating, ventilation, and air conditioning (HVAC) equipment.

The substation would also include the five enclosures summarized in Table 3-3: Collinsville Substation Enclosure Summary. Personnel would be able to enter the GIS and control enclosures for construction and maintenance purposes.

[4] The Collinsville 230 kV Reactor Project is considered a separate project by CAISO (approved in different Transmission Plans) it would be processed through a separate GO 131-D application and proceeding with the CPUC but would be included in the CPUC's CEQA analysis for the larger Collinsville 500/230 kV Substation Project.

Table 3-3: Collinsville Substation Enclosure Summary

Enclosure	Dimensions	Construction Method	Location
500 kV GIS Enclosure	120 feet long by 40 feet wide by 37 feet high	Constructed on site	North of the transformers in the substation yard
500 kV Control Enclosure	30 feet long by 40 feet wide by 10 feet high	Constructed on site	Adjacent to the 500 kV GIS Enclosure
230 kV GIS Enclosure	105 feet long by 32 feet wide by 37 feet high	Constructed on site	South of the transformers in the substation yard
230 kV Control Enclosure	30 feet long by 32 feet wide by 10 feet high	Constructed on site	Adjacent to the 230 kV GIS Enclosure
PG&E Communication Enclosure	10 feet long by 7 feet wide by 8 feet high	Prefabricated	Adjacent to the east substation fence near the entrance gate

All major terminal equipment (e.g., power transformers, series capacitors, and GIS enclosures) would be installed on concrete foundations. Each transformer would have an oil-containment system consisting of an impervious, lined, and open or stone-filled sump area around the transformer. The maximum amount of oil required for the transformers would be approximately 28,000 gallons for each of the seven single-phase transformers. Transformer oil containment basins would be designed to contain the oil volume of the transformers, plus a 25-year, 24-hour storm event. The oil-containment basins would include a sump pump system with the ability to remove water, separate from any potentially spilled oil, allowing it to be drained similar to other water on the substation site. The oil-containment basins would be approximately 55 feet long, 35 feet wide, and 6 feet deep with a sump pit measuring approximately 2 feet long, 2 feet wide, and 6 feet deep. The proposed Collinsville Substation would also be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Secondary containment would be constructed around and under the battery racks, and the Hazardous Materials Management Plan (HMMP) prepared for operations the substation would address containment from a battery leak.

The tallest structure within the proposed LSPGC Collinsville Substation would be the approximately 199-foot-tall microwave communication tower owned by PG&E. As noted in Section 3.3.5 Other Potentially Required Facilities, all structures have been submitted to the Federal Aviation Administration's (FAA's) screening tool to determine if formal notification would be required to evaluate potential obstructions to navigable airspace. No structures would require further notification. The general layout and arrangement of the substation are shown in Figure 3-4: Proposed Substation General Arrangement. Figure 3-5: Proposed Substation Profile Drawings provides vertical depictions of the substation and the approximate height of various equipment.

The substation would be surrounded by a prefabricated interlocking security wall that would be 10 feet tall with 1 foot of barbed wire on top. The access gate would open approximately 24 feet wide.

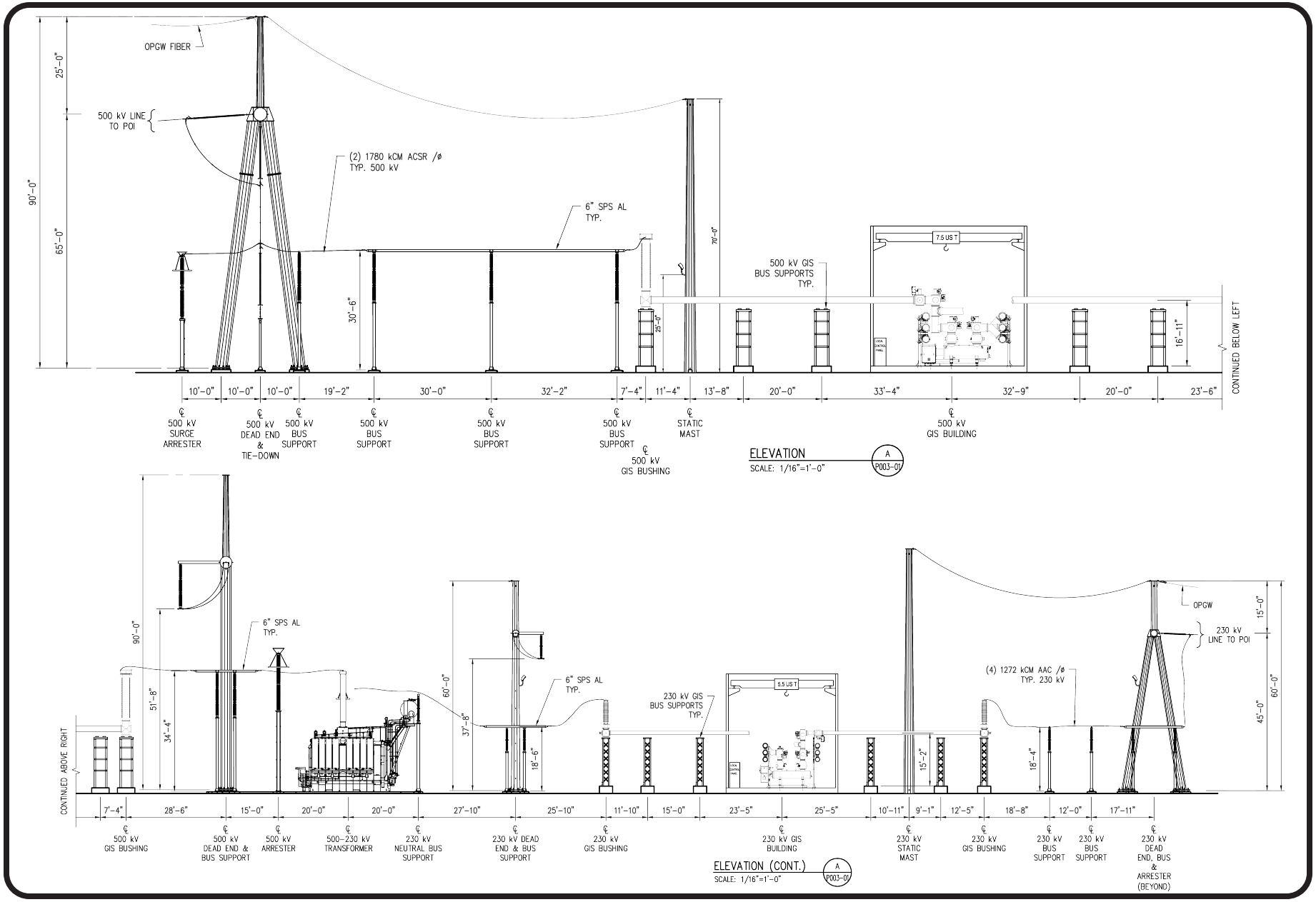


Figure 3-5: Proposed Substation Profile Drawings

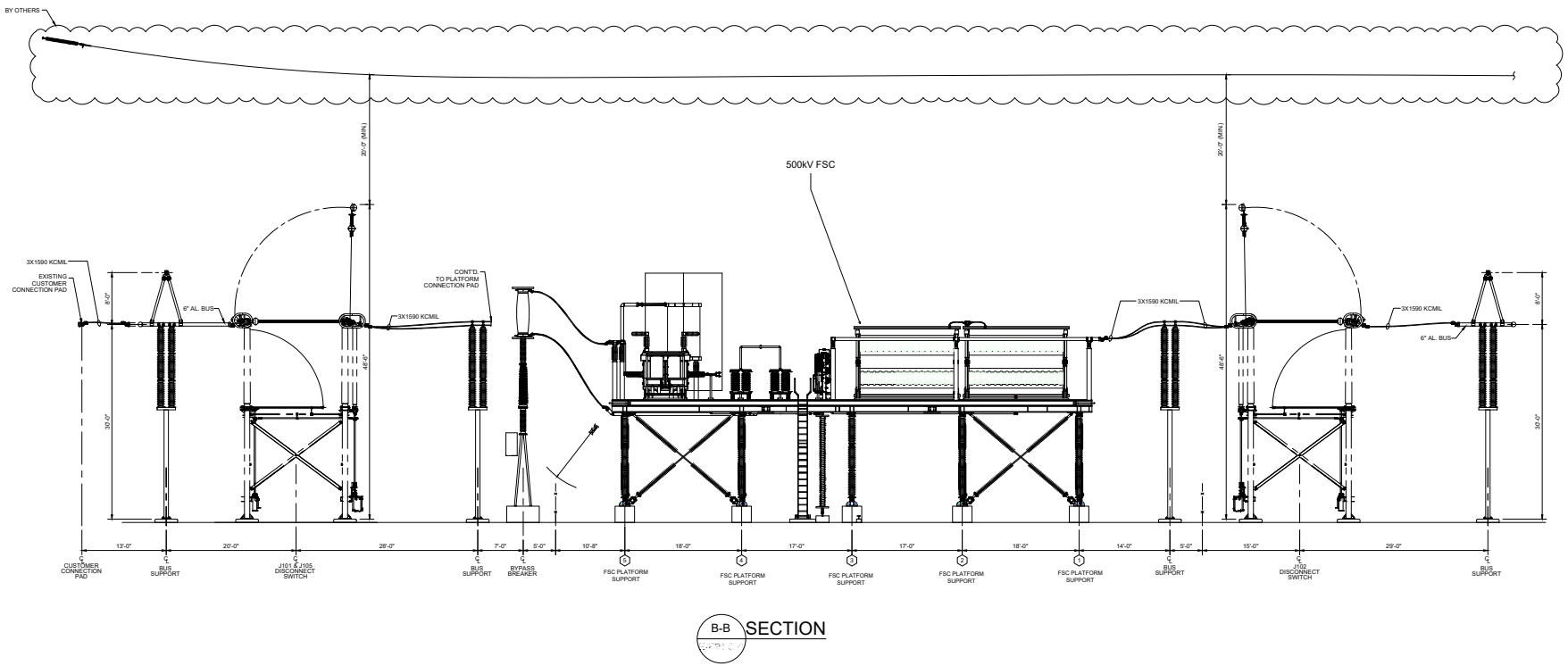


Figure 3-5: Proposed Substation Profile Drawings

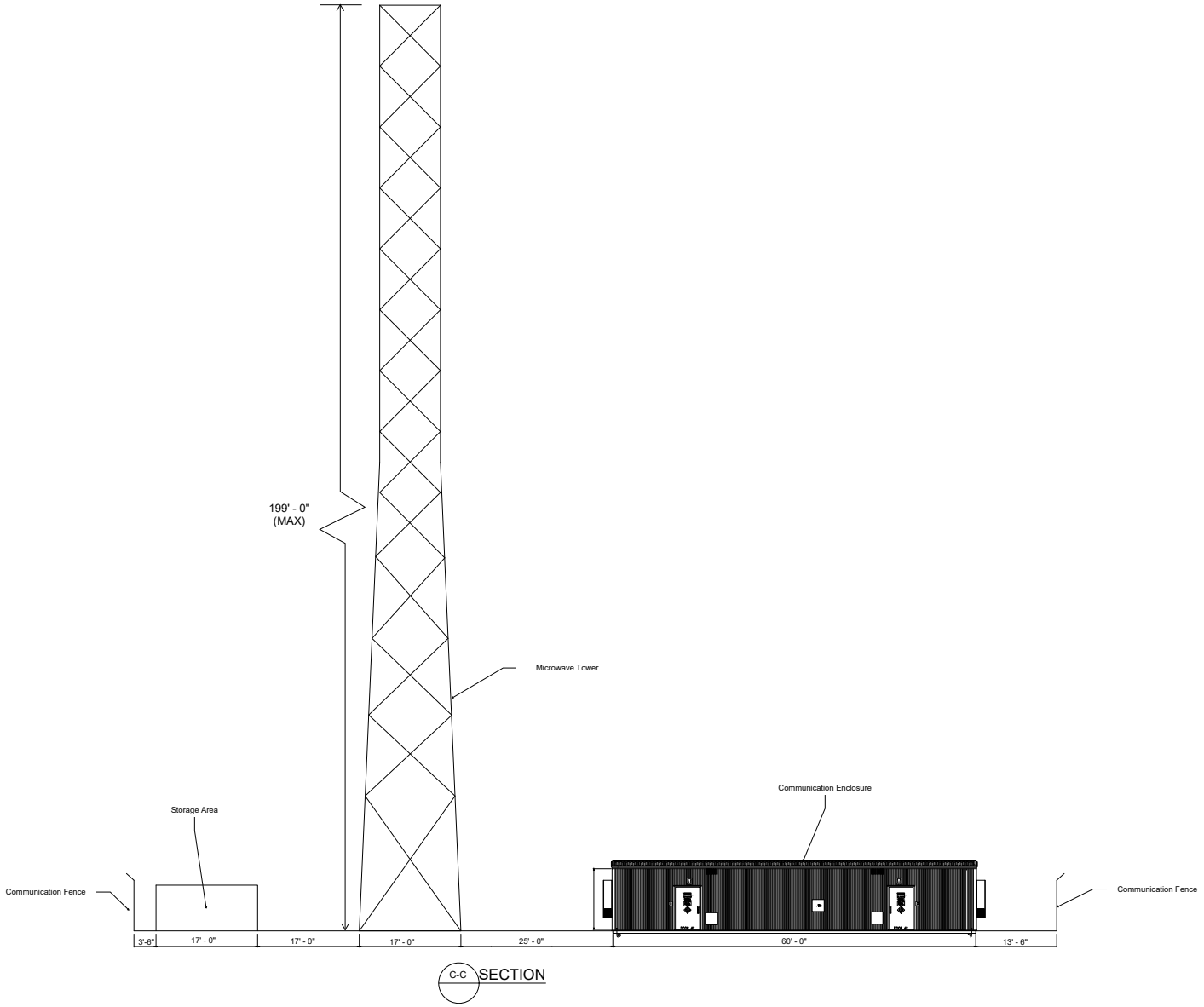


Figure 3-5: Proposed Substation Profile Drawings

All substation control enclosures would be painted a non-reflective, American National Standards Institute 70 light grey or similar neutral tone. All other substation components, including the substation security fencing, would have a non-reflective finish to the extent that such components are commercially available. Lighting would be installed and would conform to the NESC requirements and other applicable outdoor lighting codes. The facility would not require 24-hour illumination. Motion detection photocell lighting would be used to provide safety lighting at a level sufficient for safe entry and exit of the substation and control equipment enclosure. Additional manually controlled lights would be provided to ensure a safe working environment. Lighting would be shielded and pointed downward to minimize glare onto surrounding habitat.

The proposed LSPGC Collinsville Substation would be primarily powered by station service transformers located within the facility that would step-down the voltage from the low-voltage (230 kV) side of the station power transformers. An overhead (12 kV) electric distribution line would be installed from an existing PG&E distribution line to provide backup power for the substation. The proposed Collinsville Substation would also be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. A manual disconnect switch allowing for a mobile generator to be connected would be installed for the control enclosures. This mobile generator backup would only be used in a catastrophic emergency where both transmission and distribution power fail. The mobile generator would not be stored on site and would be rented or obtained, as needed, during emergency scenarios. The on-site auxiliary equipment (e.g., control room heating, ventilation, and air conditioning units [HVAC]; communications equipment; and lighting) would be the primary draw of operational electricity. It is assumed that the on-site demand for the site would be 44 kilowatts (kW), resulting in an annual demand of approximately 385,4000 kilowatt-hours.[5]

The proposed distribution line would be installed from Collinsville Road and would extend east and parallel to Stratton Lane until reaching the substation. The distribution line would be installed on approximately 21 new wood poles, as shown in Attachment 3-A: Detailed Route Map. Disturbance area characteristics for the Proposed Project are discussed in Section 3.5 Construction. All facilities, including the associated driveway, would be placed within the boundaries of the approximately 32-acre area land rights that would be acquired by LSPGC.

3.3.4.1.2 LSPGC 230 kV Transmission Line

The proposed double-circuit LSPGC 230 kV Transmission Line would be approximately 5.6 miles long and constructed between the proposed LSPGC Collinsville Substation and PG&E's existing Pittsburg Substation. The transmission line would consist of the following three segments:

- Overhead Segment: This segment would be constructed on TSPs between the proposed LSPGC Collinsville Substation and a proposed in-river transition structure located just south of the northern shore of the Sacramento River.

[5] On-site electrical demand was determined by estimating the HVAC equipment requirements for each GIS enclosure. This equipment is assumed to be the primary load during operation.

Table 3-4: Overhead Transmission and Distribution Summary

ROW Width (feet)	Approximate Length (miles)	Typical Structure Spacing (feet)	Structure Type	Installation Type	Approximate Quantity	Approximate Permanent Disturbance Area Per Structure (square feet)	Typical Aboveground Height (feet)	Typical Base Size (feet)	Typical Foundation Diameter (feet)	Typical Embedment Depth (feet)
LSPGC 230 kV Transmission Line										
100 to 230	1	800 to 1,300	TSP	Pier Foundation	4	314	70 to 150	N/A	12	20 to 50
				Direct Bury	2	314	70 to 150	N/A	6	15 to 25
			Six-pole guyed structure	Direct Bury	1	6,600	70 to 150	N/A	12	15 to 25
			In-river transition structure	Driven Piles with Pile Cap	1	5,200	70 to 90	130 by 40	2.5	30 to 80
LSPGC 230 kV Underground Segment										
10	0.6	N/A	Riser structure	Pier Foundation	2	314	50 to 100	N/A	6	25 to 40
PG&E 500 kV Interconnection										
150 to 350	2.8	800 to 1,500	LST	Pier Foundation	13	1,620	80 to 120	50	4 to 8	20 to 40
PG&E 12 kV Distribution Line										
20	0.9	275	Wood	Direct Bury	21	314	40	N/A	3 to 4	6 to 10

- Submarine Segment: This segment would be directly buried, starting at the previously described in-river transition structure located near the northern shore of the Sacramento River, and would travel generally southwest until reaching a proposed onshore underground utility vault located just south of the southern shore of the Sacramento River near PG&E's existing Pittsburg Substation.

Underground Segment: This segment would be installed within proposed underground duct banks between the previously described onshore underground utility vault until reaching proposed riser structures located adjacent to PG&E's existing Pittsburg Substation.

These segments are described in the subsections that follow. A typical drawing of the structures to be installed for the proposed LSPGC 230 kV Transmission Line is provided as Figure 3-6: 230 kV Transmission Line Structures Typical Drawing.

Overhead Segment

The proposed LSPGC 230 kV Overhead Segment would be approximately 0.9 mile long and constructed on approximately six new TSP structures—approximately two TSP structures would be directly embedded in concrete backfill and approximately four TSP structures would be mounted to pier foundations—one guyed six-pole dead-end TSP structure, and one pile cap-mounted, in-river transition structure. The typical dimensions for each structure are included in Figure 3-4: Proposed Substation General Arrangement.

Approximately four TSP structures would have a vertical double-circuit orientation. The six-pole guyed dead-end structure and the single in-river transition structure would utilize a horizontal double-circuit configuration. In locations where the line angle is relatively straight, the proposed TSPs would be directly buried with the bottom of each pole supported by approximately 6 inches of gravel at the base of the hole and then backfilled with concrete. Where the line angle changes or additional support is required, the proposed TSPs would be mounted on drilled pier foundations, typically between 15 and 50 feet deep. The six-pole guyed dead-end structure would be directly embedded into concrete backfill and would also be supported by guy wires connected to guy anchors. Guy anchors would typically be located approximately 50 feet from the structure, depending on the local topography and final engineering design. The use of "guy poles" is not anticipated.

The in-river transition structure, consisting of three vertical poles connected by horizontal steel members would be supported using driven piles topped with a concrete pile cap. Approximately eight to twelve 18 to 30-inch-wide and 0.75-inch-thick tube piles would be driven into the sediment and embedded to a depth of approximately 30 to 80 feet. An approximately 40-foot by 130-foot concrete cap would be constructed on the piles, on which the transition poles would be installed. The concrete cap would be between 18 and 48 inches tall and would sit above the mean high-water level. Up to six J-tubes (one per cable) made of rigid steel would be installed between each set of vertical poles to serve as a cable protection system. The J-tubes would have a diameter slightly greater than the 10-inch-diameter cable. From the pile cap, the J-tubes would extend down at an angle toward the riverbed to facilitate the transition to the submarine cable. A typical drawing of the in-river transition structure is provided in Figure 3-7: In-River Transition Structure Typical Drawing. An approximately 8-foot-tall chain-link fence would be erected around the perimeter of the in-river transition structure's concrete cap. Any potential lighting or

other markings associated with the in-river transition structure would be determined in consultation with the United States (U.S.) Coast Guard (USCG) as required by APM TRA-1. This APM would require a Navigational Study to be prepared and presented to the USCG for its review.

The structures associated with this segment would have a non-reflective finish and would be a neutral gray color to the extent that equipment and components with non-reflective finish are commercially available. Construction activities associated with the overhead transmission structures and conductors are described in more detail in Section 3.5.5 Transmission Line Construction (Above Ground) and Section 3.5.6 Transmission Line Construction (Below Ground).

Preliminarily, it is anticipated that Aluminum-Conductor Steel-Supported (ACSS) conductors, with a cross-sectional area of 1351.5 kcmil configured in trapezoidal-shaped strands (ACSS/TW "Martin"), would be installed on the structures. It is anticipated that the conductors would have a typical horizontal spacing of 18 inches per phase.[6] The minimum line to ground clearance would be 33 feet.

Submarine Segment

The approximately 4.5-mile-long proposed LSPGC 230 kV Submarine Segment would involve directly burying up to six submarine cables between the proposed in-river transition structure and a proposed underground utility vault approximately 100 feet south of the southern shore of the Sacramento River. The cables would be buried 6 to 15 feet below the sediment surface, or as specified by engineering and/or permitting agency requirements. It is anticipated that each submarine cable may contain three power cores with copper conductors encased in many protective layers, including insulation, a water blocking layer, metallic sheath (lead alloy), anti-corrosion sheath, filler compatible with sea water, binder tape, armor bedding (polypropylene yarn), wire armor (stainless steel wires), and an outer serving layer (polypropylene yarn with bitumen and black/yellow stripe). The cables would be insulated with an extruded layer of cross-linked polyethylene (XLPE) that is qualified, manufactured, and tested to ensure it meets the IEC 62067 and CIGRE TB 490 standards. The cables would typically be spaced approximately 50 to 90 feet apart to reduce mutual heating and provide safe construction clearances. Construction activities associated with the Submarine Segment are described in more detail in Section 3.5.6 Transmission Line Construction (Below Ground).

Underground Segment

The approximately 0.3-mile-long proposed LSPGC 230 kV Underground Segment would involve the construction of two new underground duct banks to connect an onshore underground utility vault, as shown in Figure 3-8: Utility Vault Typical Drawing, to two new riser poles located directly adjacent to PG&E's existing Pittsburg Substation, as shown in Figure 3-9: Riser Structure Typical Drawing. The utility vault would be an area comprised of up to six separate transition joint bays each measuring approximately 47 feet long, 10 feet wide, and 9 feet deep. It would be installed within an excavation that would allow a minimum 36 inches of cover. The underground duct banks would typically be comprised of ten 8-inch, one 4-inch, and two to three

[6] kcmil (1,000 circular mils [cmils]) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of cmils. A cmil is the area of a circle with a 0.001 inch diameter.

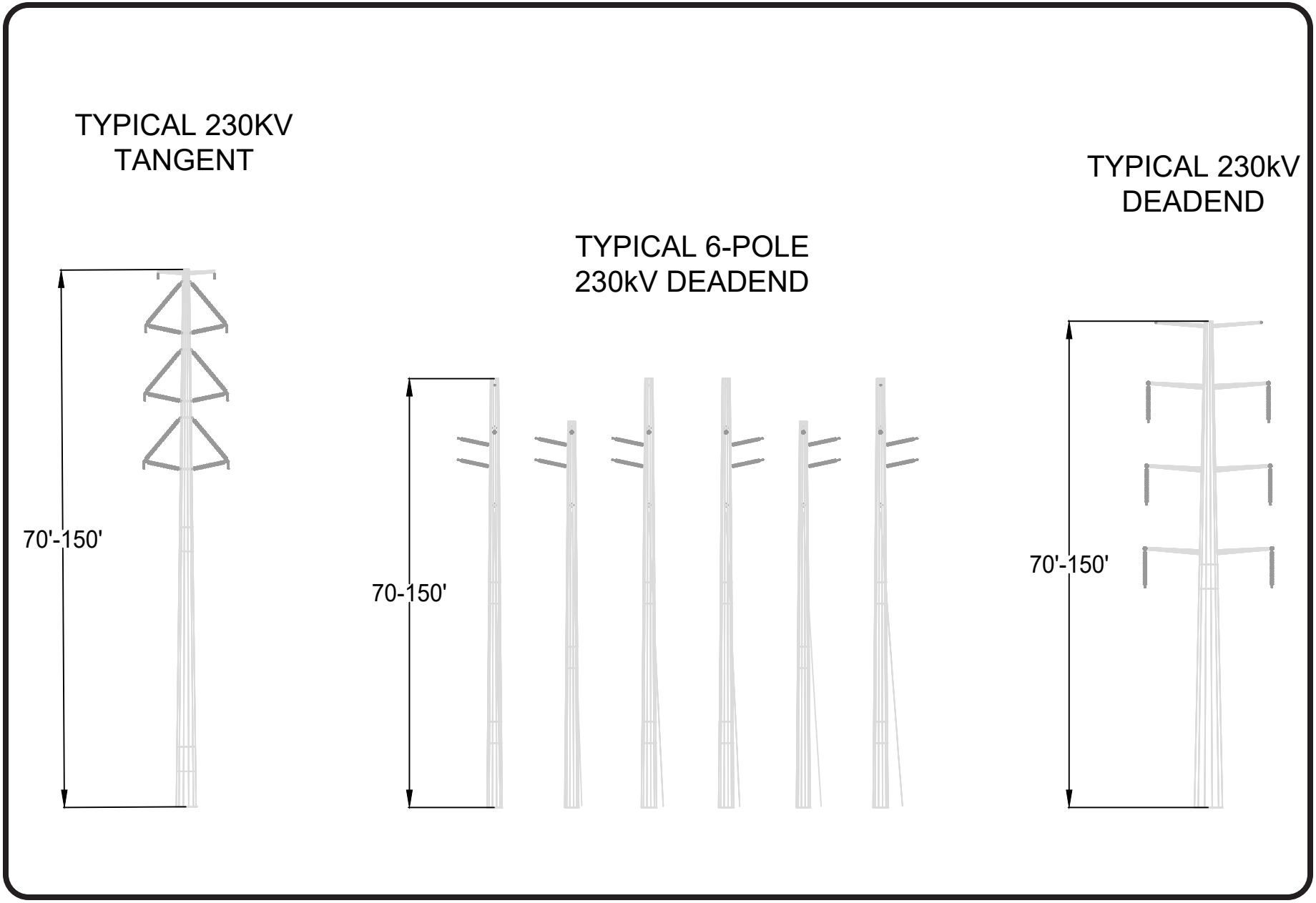
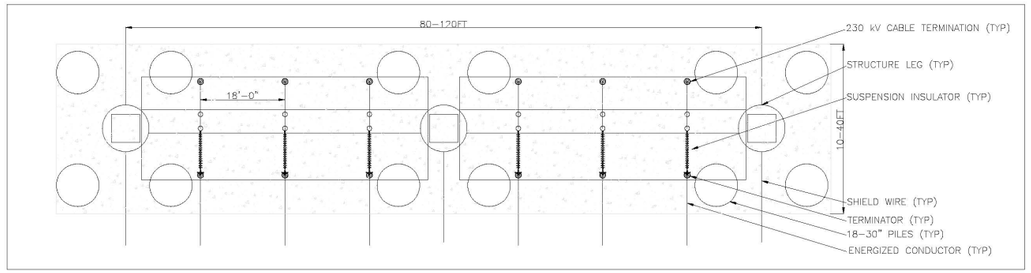


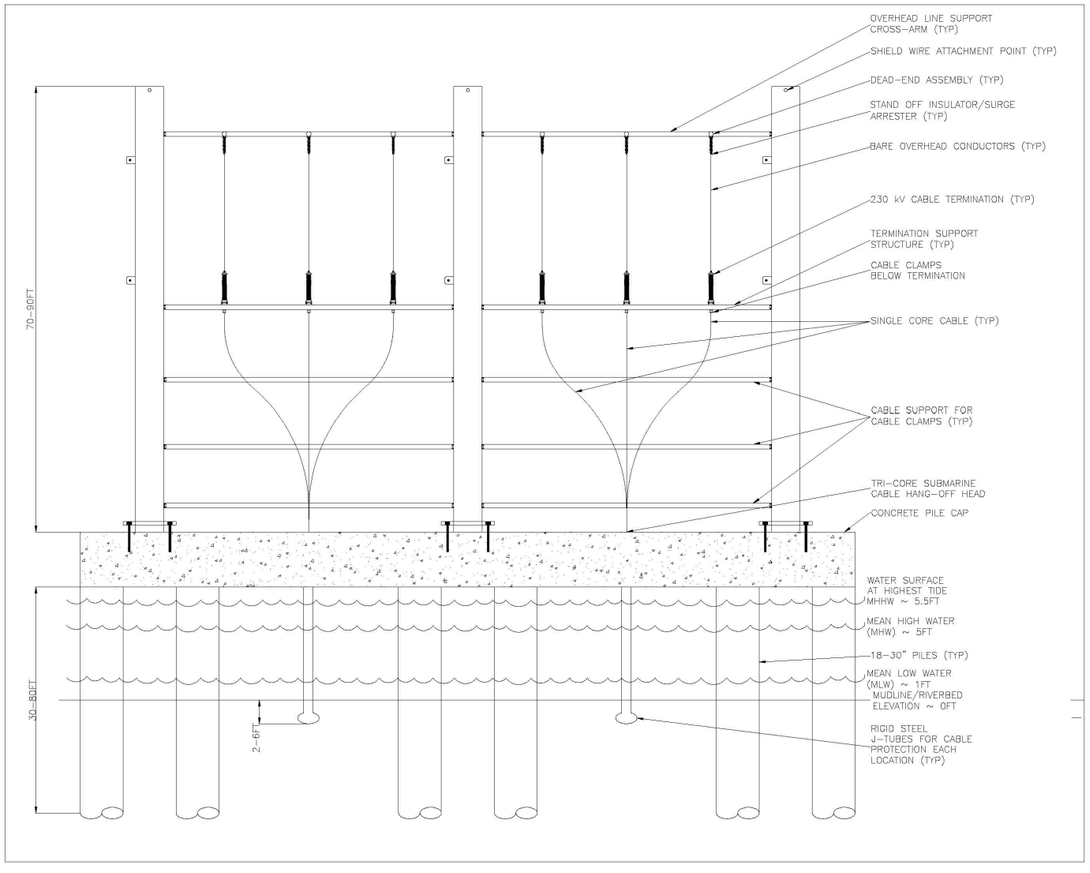
Figure 3-6: 230 kV Transmission Line Structures Typical Drawing



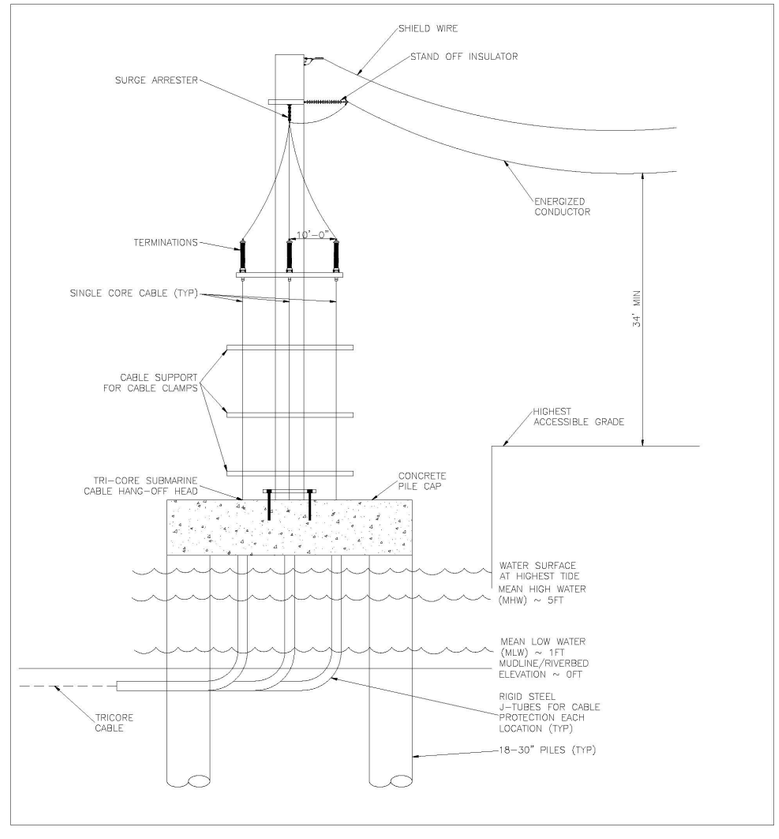
PLAN VIEW
RISER STRUCTURE
SCALE: NTS

GENERAL NOTES:

1. ALL SIZES, DIMENSIONS, AND QUANTITIES ARE PRELIMINARY, TO BE CONFIRMED DURING DETAILED DESIGN.



PROFILE VIEW – FRONT
RISER STRUCTURE
SCALE: NTS



PROFILE VIEW – SIDE
RISER STRUCTURE
SCALE: NTS

Figure 3-7: In-River Transition Structure Typical Drawing

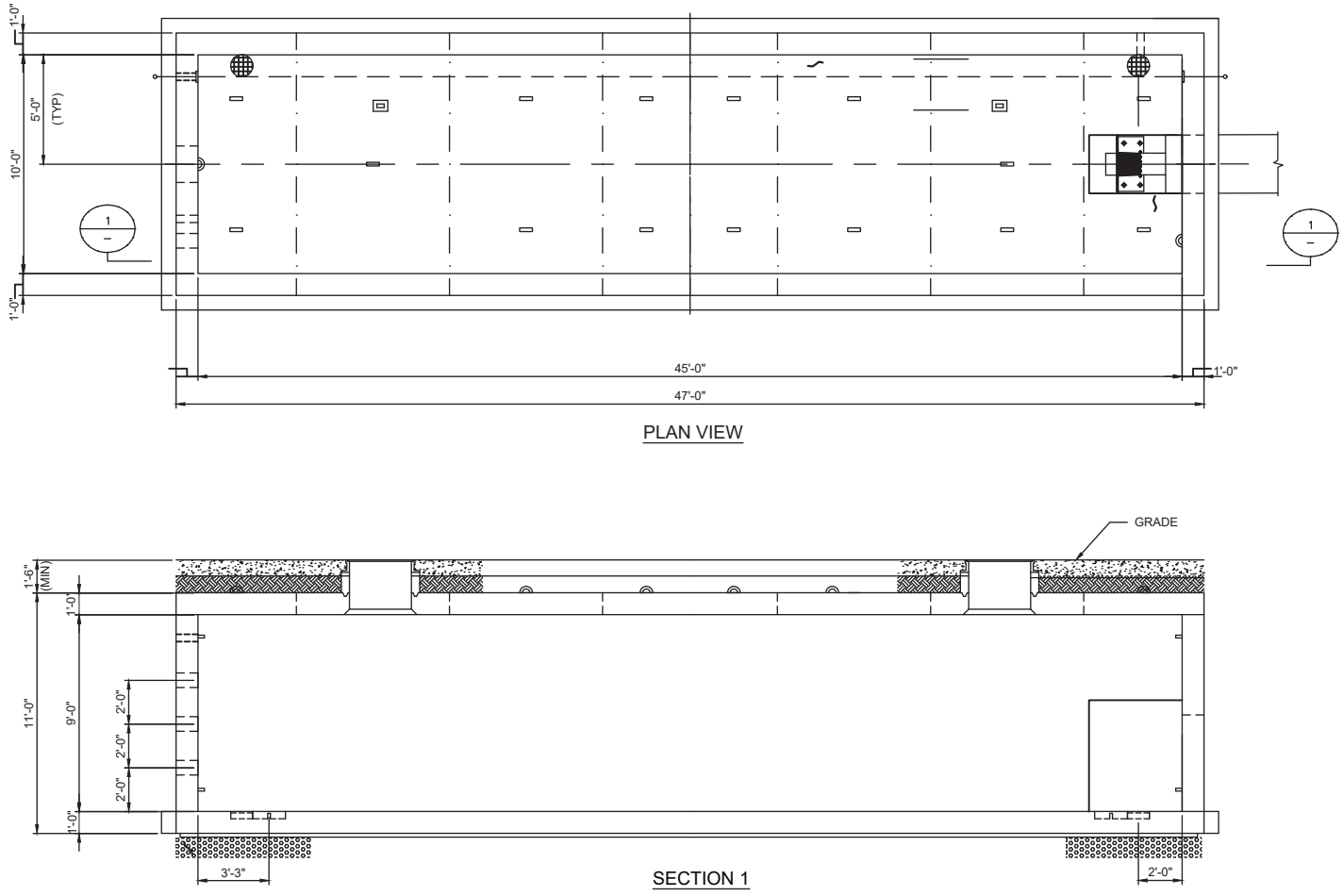


Figure 3-8: Utility Vault Typical Drawing

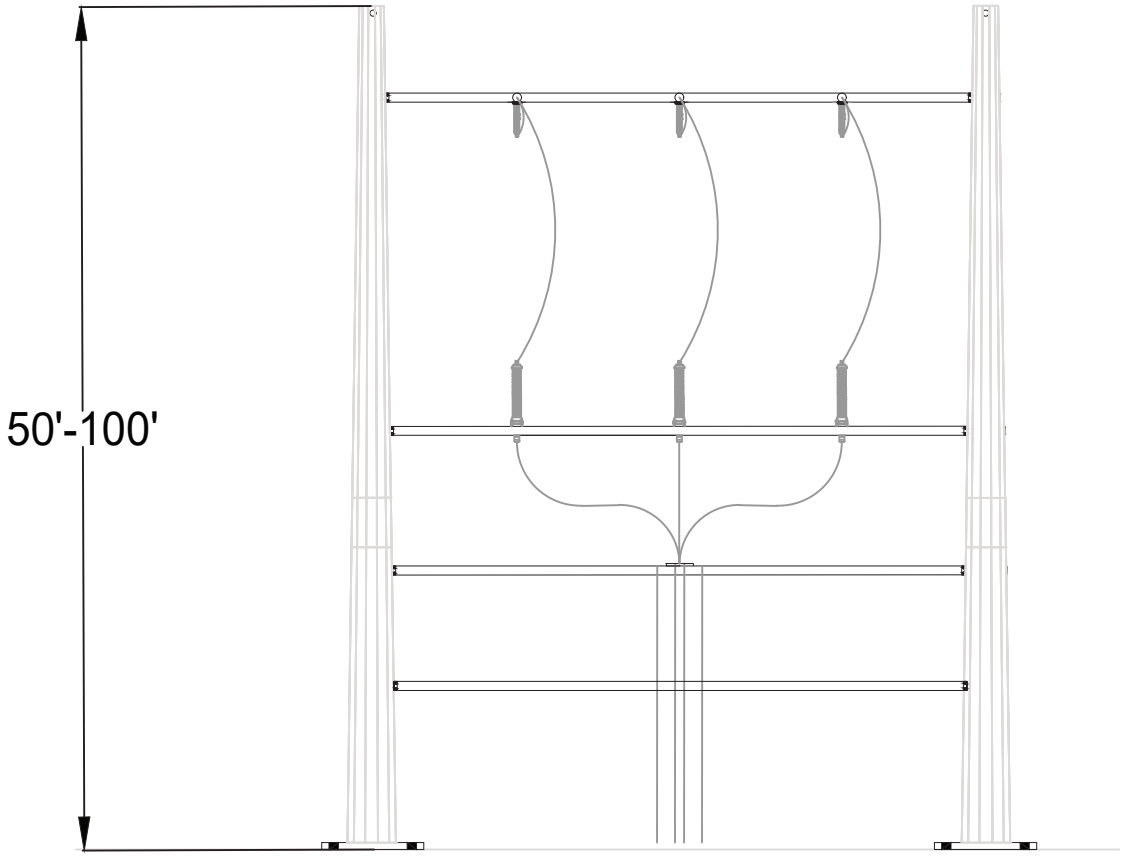


Figure 3-9: Riser Structure Typical Drawing

2-inch polyvinyl chloride (PVC) conduits encased in concrete. Each duct bank would be approximately 6 feet wide and 2.5 feet tall. A typical drawing of the proposed underground duct bank is included as Figure 3-10: Underground Duct Bank Typical Drawing. The up to nine underground cables per circuit (up to three cables per phase) would be installed inside of the 8-inch PVC conduits with at least one spare. Each 230 kV underground conductor would be approximately 5 to 6 inches in diameter and contain a copper conductor surrounded by layers of binding tape, metallic sheaths, XLPE insulation, and protected by a thick HDPE jacket. The duct banks would terminate at two new riser structures. Each riser structure would be constructed using a TSP H-frame measuring approximately 50 feet long and 50 to 85 feet tall. Each riser structure would be set on drilled pier foundations.

3.3.4.2 Proposed PG&E Facilities

3.3.4.2.1 PG&E 500 kV Interconnection

The proposed PG&E 500 kV Interconnection would require the removal of one existing LST and the construction of approximately 14 single-circuit LSTs between PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and the proposed LSPGC Collinsville Substation. The LSTs would be mounted on pier foundations and similar in design to those used along PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. PG&E would conduct an induction study to evaluate the potential effects of the proposed PG&E 500 kV Interconnection on the pipelines in the vicinity, and would follow applicable standards of the NESC pertaining to the need for interference analysis and anti-corrosion/cathodic protection, pending final design and engineering of the interconnections. A typical drawing of the LSTs anticipated to be used for the proposed PG&E 500 kV Interconnection is provided as Figure 3-11: 500 kV Transmission Line Structures Typical Drawing, and the typical dimensions associated with these structures are provided in Table 3-4: Overhead Transmission and Distribution Summary.

3.3.4.2.2 PG&E Pittsburg Substation

PG&E's existing Pittsburg Substation would be modified by shifting line positions, bus work, adding and replacing electrical equipment so that the proposed LSPGC 230 kV Transmission Line can be connected. All modifications would occur within the existing fence line.

3.3.5 Other Potentially Required Facilities

Modifications to PG&E's existing Vaca Dixon and Tesla substations would involve modifying the line relays in addition to potential series capacitor modifications at PG&E's existing Vaca Dixon Substation. Microwave modifications may also be needed at these substations to provide a high-speed communication path to the proposed LSPGC Collinsville Substation. These substations are depicted in Figure 3-1: Project Overview Map.

A new overhead electric distribution line would be extended to provide power for construction from PG&E's existing distribution line. The distribution line would be installed on approximately 21 new wood poles that would be installed along Stratton Lane. Section 3.5.3.3 Temporary Power provides more information about this distribution line extension, which is depicted in Attachment 3-A: Detailed Route Map. Guy wires may be required to support the proposed distribution poles; however, guy poles are not anticipated.

According to Title 14, Section 77.9.e.1 of the Code of Federal Regulations (CFR), any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation does not require the filing of notice for construction or alteration. Multiple wind turbines greater than 200 feet in height are located adjacent to the Proposed Project. In addition, all structures have been screened with the FAA's online tool, and none have triggered the need for official noticing. As a result, additional noticing to the FAA and any other entities is not warranted and aviation markings or lighting are not anticipated to be required for the Proposed Project. Upon completion of the final design, LSPGC would confirm these results and file any official notices with the FAA for official study and determination of lighting and/or marking requirements for all structures.

3.3.6 Future Expansions and Equipment Lifespans

The Proposed Project is anticipated to have an equipment lifespan of 50 years. A more detailed discussion of each facility is included in the subsections that follow.

3.3.6.1 LSPGC Facilities

While LSPGC is not planning to implement modifications to the Proposed Project facilities described previously; the Proposed Project has incorporated sufficient space within the proposed LSPGC Collinsville Substation property to allow for potential future modification of the substation to support increased future renewable energy-generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to the west, adding approximately 4 acres to the site's footprint. This modification would allow for the addition of two 500 kV bays and three 230 kV bays. The substation site has sufficient space to accommodate this and future modification should it be required.

The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated time frame would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

No expansion and/or extension is planned for the proposed LSPGC 230 kV Transmission Line.

3.3.6.2 PG&E Facilities

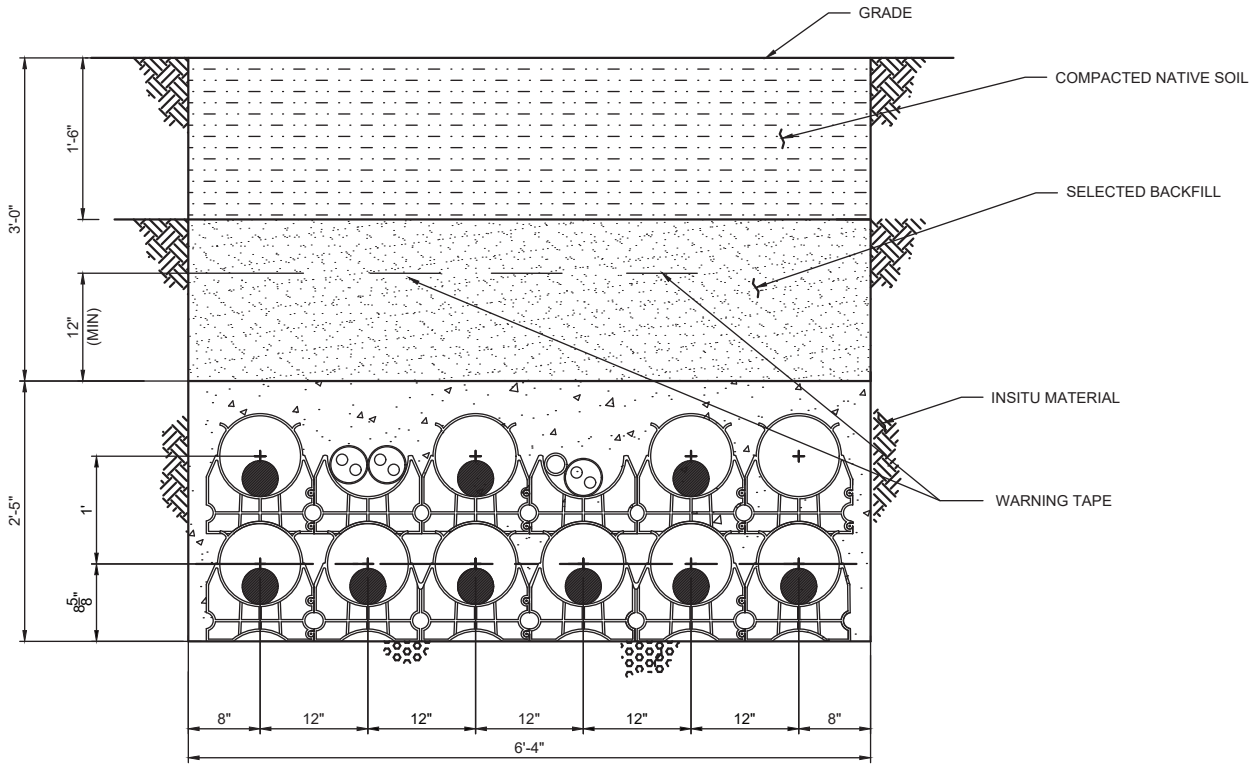
Future expansion of the proposed PG&E 500 kV Interconnection is not anticipated due to the nature of this facility. In addition, no future expansion or modification to PG&E's existing Pittsburg, Vaca Dixon, or Tesla substations is anticipated as part of the Proposed Project.

No expansion and/or extension is planned for the proposed PG&E 12 kV Distribution Line.

3.3.7 Below-Ground Conductor/Cable Installations

3.3.7.1 LSPGC Facilities

For the proposed LSPGC Collinsville Substation, below-grade work would include the construction of equipment foundations, oil containment for transformers, the grounding grid, and



DETAIL 1
8" PVC CONDUIT
2 X 6 DUCT BANK
WITHOUT REBAR

Figure 3-10: Underground Duct Bank Typical Drawing

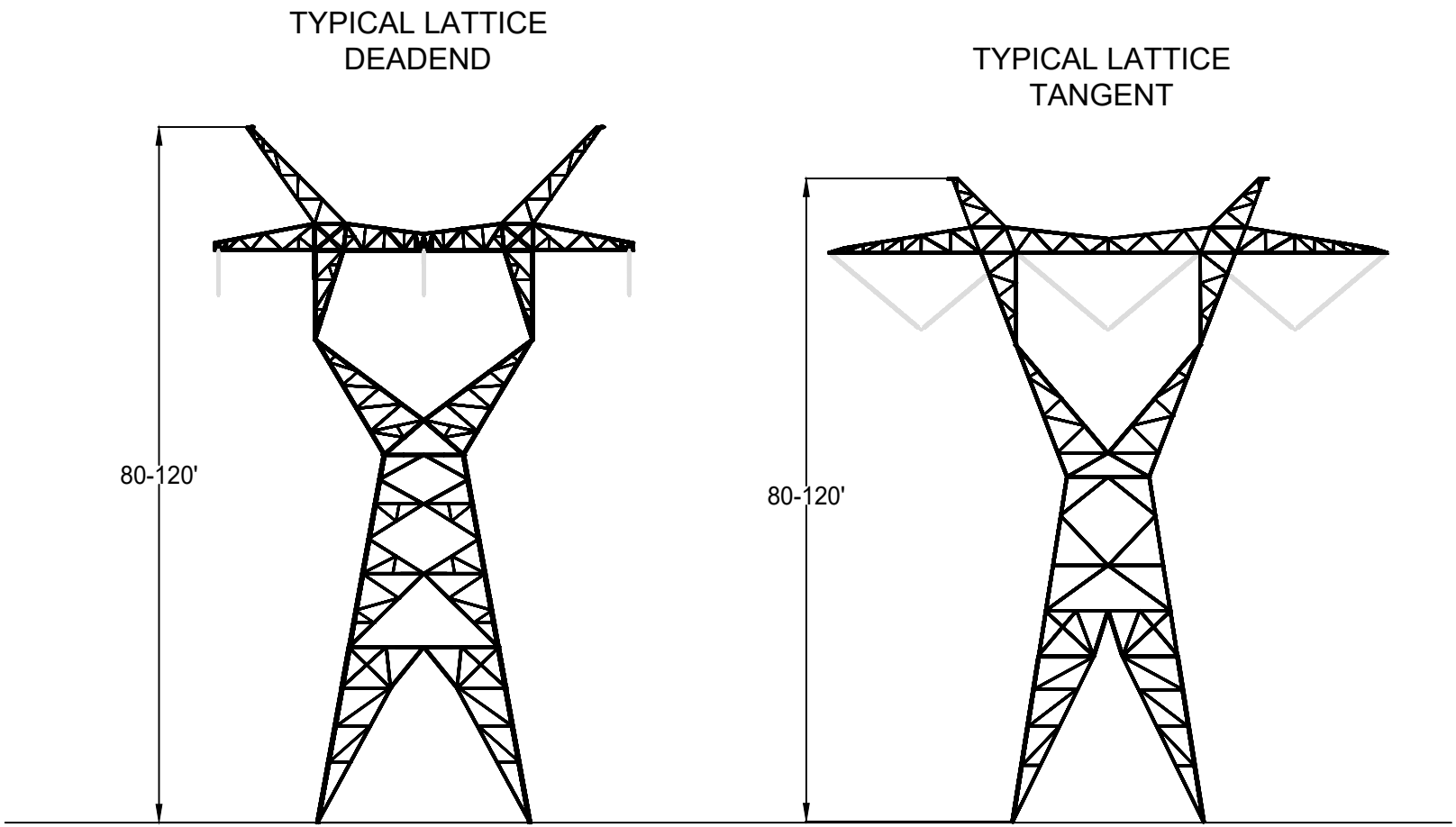


Figure 3-11: 500 kV Transmission Line Structures Typical Drawing

conduit; and erection of the control enclosures. The maximum depth of disturbance within existing soil at the proposed LSPGC Collinsville Substation site would be approximately 40 feet at the location of the dead-end pier foundations. Typical below-ground conductor and/or cable would be 2 to 4 feet below ground surface.

Below-ground cables would be installed as part of the proposed LSPGC 230 kV Submarine Segment, 230 kV Underground Segment, and Telecommunications Line, as described previously in Section 3.2.2.1.3 LSPGC 230 kV Transmission Line and Section 3.3.9 Telecommunication Lines.

3.3.7.2 PG&E Facilities

No PG&E transmission lines are planned below ground. Modifications within existing substations may include underground facilities. Work immediately adjacent to PG&E's existing Pittsburg, Tesla, and Vaca Dixon substations may include underground information technology or other facilities.

3.3.8 Electric Substations and Switching Stations

The proposed LSPGC Collinsville Substation would include seven single-phase 500/230 kV transformers. Both the 500 kV and 230 kV switchgear would be gas-insulated. The substation would include one approximately 120-foot by 40-foot GIS enclosure with an attached approximately 40-foot by 50-foot relay control enclosure for the 500 kV equipment. The substation would also include one approximately 105-foot by 32-foot GIS enclosure with an attached approximately 30-foot by 32-foot control enclosure for the 230 kV equipment.

The Proposed Project would include a SCADA system that would consist of fully redundant servers; power supplies; and Ethernet LAN and WAN connections, routers, firewalls, and switches. The proposed LSPGC Collinsville Substation would include telecommunications paths along the proposed PG&E 500 kV Interconnection (i.e., microwave tower and antenna) and LSPGC 230 kV Transmission Line (i.e., OPGW). A more detailed discussion of the proposed telecommunications facilities is provided in Section 3.3.9 Telecommunication Lines.

3.3.9 Telecommunication Lines

The Proposed Project would involve installing two separate telecommunications paths to the proposed LSPGC Collinsville Substation. The first path would involve constructing a new microwave tower up to 199 feet in height at the proposed LSPGC Collinsville Substation, as described in Section 3.3.4.1.1 Proposed LSPGC Collinsville Substation. The second path would originate within the City of Pittsburg. Two new underground fiber optic cables would be installed generally within existing streets using the horizontal directional drilling (HDD) method of construction to connect a series of handholes from a residential neighborhood located east of PG&E's existing Pittsburg Substation to a new fiber hub installed adjacent to PG&E's existing Pittsburg Substation and the new utility vault associated with the proposed LSPGC 230 kV Underground Segment. Each pre-fabricated handhole, measuring approximately 15 inches square at the surface level and 13 inches deep, would be installed at grade and used to facilitate installation and splicing of the fiber. Figure 3-12: Handhole Typical Drawing depicts the handholes that would be used. The proposed route is depicted in Attachment 3-A: Detailed Route Map. The fiber hub and approximately 5-foot by 5-foot enclosure would be used to splice the

fiber optic cables to the cables installed as part of the proposed LSPGC 230 kV Submarine Segment. From that point, one telecommunications path would continue along the cables associated with the proposed LSPGC 230 kV Underground Segment until reaching PG&E's Pittsburg Substation. A second telecommunications path would continue along the submarine cables associated with the proposed LSPGC 230 kV Submarine Segment until reaching the in-river transition structure. From the in-river transition structure, a single OPGW would be installed along the proposed LSPGC 230 kV Overhead Segment above the primary conductors until reaching the proposed LSPGC Collinsville Substation, completing the second telecommunications path. PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line is not outfitted with a telecommunications line, and there are no plans to add one as part of the Proposed Project.

3.4 LANDOWNERSHIP, RIGHTS-OF-WAY, AND EASEMENTS

Land entitlement issues are not part of this regulatory proceeding, in which the CPUC is considering whether to grant or deny LSPGC's application for a Certificate of Public Convenience and Necessity (CPCN) to construct new electrical facilities. Rather, any land rights issues would be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the CPUC on LSPGC's application (see, for example, Jefferson-Martin 230 kV Transmission Project, A.02-04-043, D.04-08-046, p. 85).

3.4.1 Land Ownership

The parcels where the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and PG&E 500 kV Interconnection would be constructed are privately or utility owned. LSPGC would acquire land rights for approximately 32 acres in this area to accommodate the proposed LSPGC Collinsville Substation facility, including all considerations for site grading, fencing, staging areas, equipment, internal circulation, and other operational considerations. The proposed LSPGC 230 kV Submarine Segment would be located on lands that are owned by the state, the City of Pittsburg, and a private landowner. PG&E owns the existing approximately 38.4-acre parcel where PG&E's existing Pittsburg Substation is located, as well as the parcels where PG&E's existing Vaca Dixon and Tesla substations are located.

3.4.2 Existing Rights-of-Way or Easements

3.4.2.1 LSPGC Facilities

LSPGC does not have any existing ROWs or easements in the Proposed Project area.

3.4.2.2 PG&E Facilities

PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line is located within an approximately 200-foot-wide ROW where it would extend to the proposed PG&E 500 kV Interconnection. PG&E does not have any other existing ROWs or easements in the Proposed Project area.

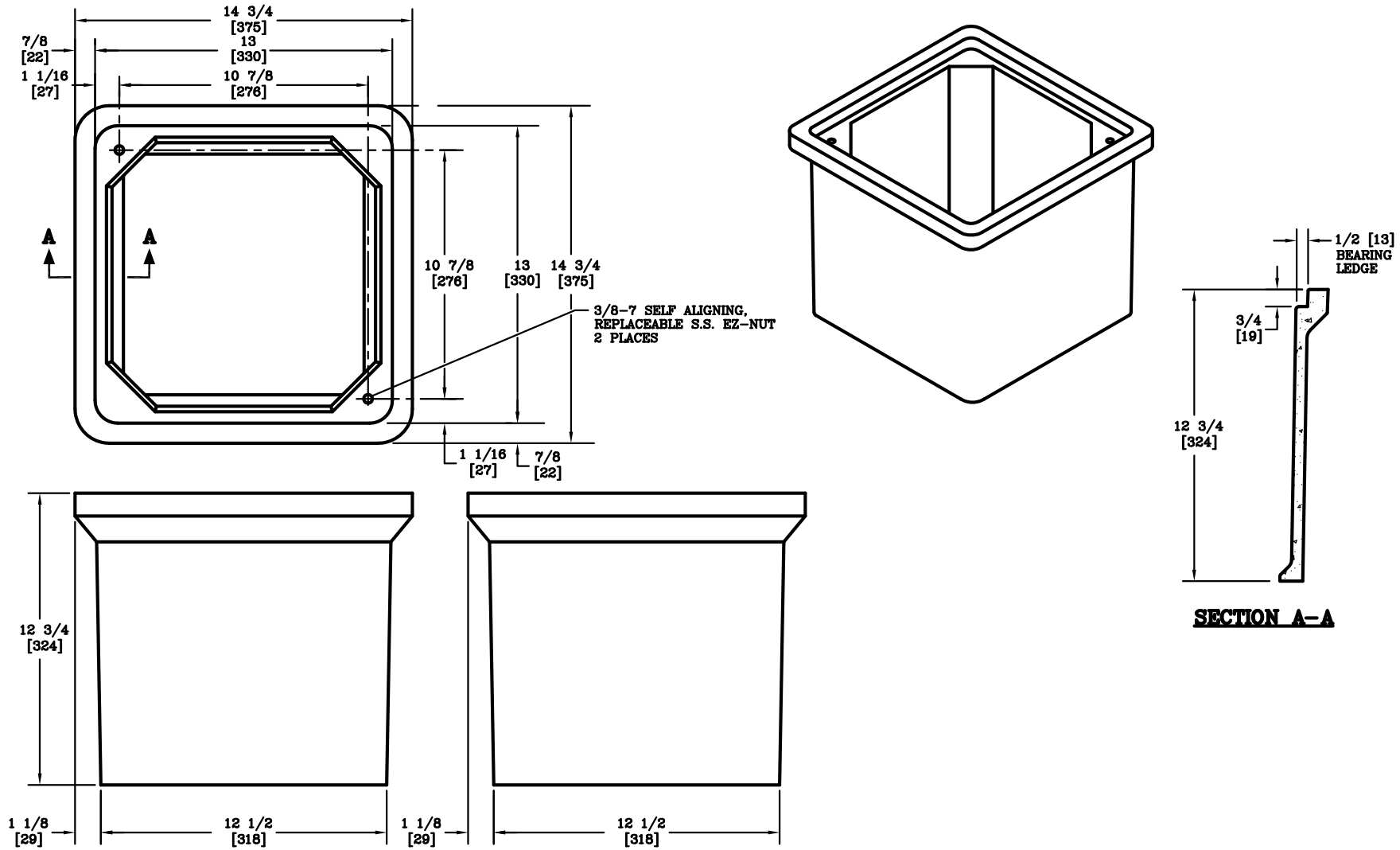


Figure 3-12: Handhole Typical Drawing

3.4.3 New or Modified Rights-of-Way or Easements

3.4.3.1 LSPGC Facilities

LSPGC would obtain the necessary permanent ROWs and easements from each landowner to accommodate the proposed LSGPC components. The width of the ROWs for the LSPGC 230 kV Overhead Segment would generally be 120 feet; however, it would expand to approximately 230 feet to accommodate the six-pole guyed structure and in-river transition structure. The minimum ROW along the proposed LSPGC 230 kV Submarine Segment would typically be approximately 370 feet to accommodate up to six cables typically spaced approximately 50 to 90 feet apart; however, the final ROW width may vary in locations and would not be determined until final engineering is complete. The proposed ROW for each duct bank associated with the proposed LSPGC 230 kV Underground Segment would be approximately 10 feet. The proposed LSPGC Telecommunications Line would be constructed by one or more third parties. It is anticipated that these parties would utilize the road franchise and/or would obtain additional ROW, as needed, for the extension of their system and connection to the proposed LSPGC Collinsville Substation. Geographic information system data for new and modified ROWs are provided in a separate cover.

3.4.3.2 PG&E Facilities

PG&E would secure new rights for installation of the proposed PG&E 500 kV Interconnection by negotiating agreements with each landowner. PG&E's typical ROW width for a single 500 kV transmission line is between 100 and 200 feet. For locations with two adjacent 500 kV transmission lines with a typical separation distance of 150 feet, the typical ROW width is 350 feet, allowing for 100 feet from the centerline of each transmission line to the edge of the ROW. The proposed PG&E 500 kV Interconnection lines would each be approximately 1.5 miles long. No development restrictions or existing structures are located within the new easement locations.

3.4.4 Temporary Rights-of-Way or Easements

Temporary construction easements would be required for temporary construction areas (e.g., staging areas and pulling sites) and temporary access roads located outside of the permanent easements that would be acquired by LSPGC and PG&E. All temporary construction areas that would support the construction of the proposed LSPGC Collinsville Substation would be located on the parcel for which LSPGC would acquire rights. All temporary easements would be secured by negotiating with landowners.

3.5 CONSTRUCTION

This section includes an overview of the typical methods that would be used for construction of the Proposed Project. The Proposed Project would be constructed to meet all General Order (GO) 95 requirements, including minimum vegetation and equipment clearances, in addition to the vegetation clearance requirements in California Public Resources Code (PRC) Section 4292 and Title 14, Section 1254 of the CCR.

3.5.1 Construction Access

The Proposed Project would be accessed using existing paved and unpaved roads, new permanent access roads, and temporary access roads. A summary of the anticipated road types is provided in Table 3-5: Access Road Summary and depicted in Attachment 3-A: Detailed Route Map. A more detailed discussion of the access requirements is included in the subsections that follow.

Table 3-5: Access Road Summary

Type of Road	Description	Approximate Total Length (miles)	Typical Width (feet)	Approximate Total Area (acres)
Existing Unpaved Roads	Dirt or gravel roads traversing undeveloped areas primarily used for agricultural purposes or wind farm access	1.6	36	7.0
New Permanent Access Roads (Collinsville Substation Driveway and PG&E Access)	New gravel driveway to be installed to access the substation from Stratton Lane, and a PG&E permanent access road to be installed on the east side of the proposed LSPGC Collinsville Substation to access PG&E's control equipment.	0.1	20	0.1
Temporary Access Roads	Temporary access roads that would be bladed to create a safe path for equipment across primarily undeveloped land or wind farms to access structure locations	2.3	16	4.5
	Temporary access road that would be treated with timber mats to allow watercourse crossing	0.2	16	0.4

3.5.1.1 Existing Access Roads

The Proposed Project area contains an existing network of paved and unpaved access roads that would be used during construction, operations, and maintenance (O&M). Existing paved roads are typically maintained by the counties or city, while unpaved roads are typically on private lands within existing undeveloped areas or that were established to provide access to existing wind farms or PG&E's existing transmission infrastructure. Stratton Lane, which would serve as the primary access point for construction of the proposed LSPGC Collinsville Substation and 230 kV Overhead Segment is a county-maintained and owned road.

Existing paved roads would not typically require improvements prior to use. Existing unpaved roads may require minor improvements, typically within the existing road prism, to allow for the safe travel of construction vehicles and equipment. These improvements could include minor grading, vegetation trimming/removal, and/or the application of road base. Road widening is not proposed as the existing roads are of adequate width (approximately 36 feet) to allow passing. As described in Section 3.5.8.2 Traffic Control, flaggers or other traffic control measures would be

utilized to guide traffic around active work areas in a safe manner. Encroachment permits, as required, would be secured, and any corresponding traffic control plans would be implemented during construction as appropriate.

Incidental damage to existing roads is not expected from Proposed Project activities. Should incidental road damage occur, the roads would be restored to pre-construction conditions or better as required by applicable permits and/or landowner agreements.

3.5.1.2 New Access Roads

3.5.1.2.1 Temporary

Where existing access is not available and surface conditions are suitable, approximately 16-foot-wide temporary access roads would be established during construction to access construction areas. Prior to use, vegetation would be removed and the area may be lightly bladed to establish a safe path for construction equipment and vehicles. Extensive grading, compaction via a vibratory roller, and/or road base placement would not be required along temporary access roads. As described in Section 3.5.1.4 Watercourse Crossings, timber mats would be temporarily applied to access road alignments that would pass through existing wetlands. Temporary access roads are depicted in Attachment 3-A: Detailed Route Map. Following construction, all temporary access roads would be restored to pre-construction conditions as described in Section 3.7.3.2 Site Restoration.

3.5.1.2.2 Permanent

A new, approximately 125-foot-long, 20-foot-wide new driveway would be constructed to connect the primary entrance to the proposed LSPGC Collinsville Substation to Stratton Lane. This access road would be graded and rocked per the final Proposed Project design. On the east side of the substation, PG&E would construct an approximately 336-foot-long, 20-foot-wide new access road to access control equipment. The locations of the proposed new roads are depicted in Attachment 3-A: Detailed Route Map.

3.5.1.3 Overland Access Routes

No overland access routes are anticipated to be used for the LSPGC components of the Proposed Project. PG&E may use overland access routes to access some of its existing facilities.

3.5.1.4 Watercourse Crossings

The Proposed Project would be located primarily on existing agricultural land or lands being used as wind farms. Although watercourses have been identified within the Proposed Project area, most of these watercourses would be avoided during construction and would be spanned by the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection. One proposed 230 kV TSP and six-pole structure would be constructed within an existing wetland, located south of Stratton Lane. Access in this area would be established by applying timber mats along the proposed access road alignment, which may overlap wetlands or other waters, as shown in Attachment 3-A: Detailed Route Map. Following construction, the timber mats would be removed. Any timber mats that would be placed within jurisdictional waters would be permitted in accordance with appropriate federal and state regulations. LSPGC would secure all

required permits prior to the placement of any timber mats and would adhere to all permit conditions. No culverts would be installed as part of the Proposed Project.

3.5.1.5 Helicopter Access

Light-duty helicopter use is anticipated to support construction of the Proposed Project components located north of the Sacramento River. These activities may include transportation of construction workers, delivery of equipment and materials to temporary construction areas, hardware installation, and/or installation/removal of overhead conductor/cable. In addition, a heavy-duty helicopter is anticipated to support construction of the proposed PG&E 500 kV Interconnection structures.

Helicopter takeoff and landing areas would be located within each pulling site and staging area. Each landing zone would be approximately 200 feet by 200 feet. In addition, local public and/or private airports or airstrips may be used to support helicopter operations. The proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and LSPGC 230 kV Overhead Segment would be located approximately 12 miles southeast of the Travis Air Force Base and approximately 10 miles southwest of the Rio Vista Municipal Airport. Helicopter refueling would typically occur off site at local airports or airstrips; however, refueling at staging areas may also occur.

Helicopter operators would coordinate flight paths from local airports or airstrips with local air traffic control, as appropriate. Once in the vicinity of the Proposed Project, helicopter flight paths would generally follow the Proposed Project alignment. The anticipated hours and duration of helicopter operations are provided in Table 3-11: Proposed Construction Equipment and Workforce. It is anticipated that the light-duty helicopter use would involve a Hughes 500, Bell 429, MD 600 N, or similar model. The heavy-duty helicopter use would involve a CH-47D Chinook, Sikorsky S61, Sikorsky S64, or similar model.

As required, a Helicopter Plan would be prepared and a Congested Area Plan pursuant to Title 14, Section 133.33(d) and Title 77 of the CFR would be developed with the FAA Flight Standards District Office in Fresno, which has jurisdiction over the Proposed Project area.

3.5.2 Staging Areas

3.5.2.1 Staging Area Locations

It is anticipated that approximately five staging areas would be used to support construction, as summarized in Table 3-6: Staging Area Summary. Three staging areas would be in the Collinsville area in Solano County and used for longer-term construction staging needs for work on the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Submarine Segment, and PG&E 500 kV Interconnection. Two staging areas would be located adjacent to PG&E's existing Pittsburg Substation in the City of Pittsburg and would be used for longer term construction staging needs for work on the proposed LSPGC 230 kV Submarine Segment, proposed LSPGC 230 kV Underground Segment, and PG&E's modifications to its existing Pittsburg Substation.

Table 3-6: Staging Area Summary

Name	Location	Condition	Approximate Size (acres)
North of Stratton Lane	Directly north of the proposed LSPGC Collinsville Substation and Stratton Lane	Inactive Agriculture	11.1
East of Stratton Lane	Directly east of the proposed LSPGC Collinsville Substation and Stratton Lane	Inactive Agriculture	9.8
SMUD	Approximately 1 mile northeast of the proposed LSPGC Collinsville Substation	Disturbed	9.6
Pittsburg Substation West	Directly west of PG&E's existing Pittsburg Substation	Disturbed	4.9
Pittsburg Substation East	Directly east of PG&E's existing Pittsburg Substation	Disturbed	3.4
Total	**--**	**--**	**38.9**

Temporary perimeter and/or security fencing with gates would be installed at the staging areas as appropriate. The type and extent of fencing would be adjusted at each staging area to match the planned activities and storage requirements. The staging areas would be connected to access roads via a temporary driveway or existing access roads. The staging areas are depicted in Attachment 3-A: Detailed Route Map.

3.5.2.2 Staging Area Preparation

If not previously prepared, staging areas preparation would involve clearing, topsoil salvage, grubbing, and limited grading. Gravel may be used to line the ground at the staging area to avoid the creation of unsafe surface conditions and unnecessary sediment transport off site. Prior to the application of the gravel, fabric would be laid on the ground at the staging area to facilitate removal during the decommissioning of the staging areas. If necessary, access would be established from adjacent existing roads.

Staging areas may be used as a refueling area for vehicles and construction equipment; as an equipment wash station; for assemblage; for storage of material and equipment, storage containers, construction trailers, and portable restrooms; and for parking and lighting. Some substation equipment (e.g., disconnect switches, instrument transformers, take-off towers, insulators, conductors, bus, connectors, conduit, cable trench, and rebar) would be received and temporarily stored at the staging area prior to installation.

Construction workers would typically meet at the staging area each morning to park their vehicles. All construction equipment and vehicles would be parked within the staging area while inactive and at the completion of each workday, where and when practical.

Perimeter security fencing, typically consisting of an approximately 10-foot-tall chain-link-style fence topped with approximately 1 foot of barbed wire, may be used to establish secure areas within the equipment staging areas. This fencing would be utilized to secure expensive equipment and would be locked nightly. Temporary lighting may be installed as a security measure. Perimeter fencing, typically consisting of 4-foot-tall plastic orange security fencing may be utilized to denote the extent of the staging area/work area.

Temporary construction power would be provided to the proposed LSPGC Collinsville Substation parcel via extension of the distribution line, as described in Section 3.5.4.2 Utilities. Temporary generators would be a contingency if distribution power is unavailable in a timely manner. Temporary construction power at other staging areas is not anticipated to be required, and temporary generators may be utilized, if needed.

3.5.3 Construction Work Areas

3.5.3.1 Construction Work Areas

A description of the types of work areas and the associated activities that would occur at each work area are described in the subsections that follow and depicted in Attachment 3-A: Detailed Route Map.

3.5.3.1.1 Helicopter Landing Zones and Touchdown Areas

As described in Section 3.5.1.5 Helicopter Access, helicopter landing areas would be included at each pulling site and staging area. In addition, helicopters may touch down along access roads or within other construction areas, as appropriate. Helicopter landing zones and touchdown areas may support the following construction activities:

- Dropping off or picking up construction crew members, equipment, and/or materials;
- Dropping off or picking up structures/portions of structures, conductor sock line, conductor pull rope, and/or conductor; and
- Fueling helicopters.

3.5.3.1.2 Vehicle and Equipment Parking, Passing, or Turnaround Areas

Vehicles and construction equipment would utilize Proposed Project-specific construction areas and access roads for equipment parking, passing, or turning around. If required, equipment would typically be stored overnight at staging areas. For security, equipment may be stored in fenced areas of the staging area.

3.5.3.1.3 Railroad, Bridge, or Watercourse Crossings

The Proposed Project would not include any new railroad crossings or bridges. As described in Section 3.5.1.4 Watercourse Crossings, two structures associated with the proposed LSPGC 230 kV Overhead Segment would be constructed within an existing wetland. Approximately 990 feet of temporary access would be established by placing timber matting along the access road alignment as depicted in Attachment 3-A: Detailed Route Map. Following construction in this location, the timber matting would be removed.

3.5.3.1.4 Temporary Work Areas for Facility Installation, Modification, or Removal

Temporary work areas (also referred to as construction work areas) would be established to support the following activities:

- Transmission structure installation;
- Transmission structure removal;
- Distribution line construction;
- Telecommunications line construction;
- Transmission, distribution, and telecommunications conductor/cable installation and splicing;
- Substation construction; and
- Switching operations to accommodate construction activities.

These temporary work areas would facilitate equipment and material storage and use.

3.5.3.1.5 Excavations and Associated Equipment Work Areas

Excavations are anticipated associated with structure installation and substation construction. No other excavations are anticipated. All identified work areas are inclusive of the required excavation limits; as a result, specific temporary work areas for excavations have not been identified. Table 3-7: Typical Excavation Dimensions provides the anticipated excavation dimensions required to construct subsurface features.

3.5.3.1.6 Temporary Guard Structures

Guard structures are temporary facilities that are installed, as appropriate, at transportation and utility crossings prior to conductor installation and removal. Due to the lack of transportation and utility crossings at the proposed overhead conductor locations, guard structures are not anticipated to be required as part of the Proposed Project.

3.5.3.1.7 Pull-and-Tension/Stringing Sites

Pulling sites are temporary construction areas that would be used to stage and operate equipment necessary for the installation or removal of conductor/cable. Pulling site preparation would involve grubbing and limited grading. Typically, one pulling site would be located at each end of a "wire pull" to facilitate this process. The conductor installation/removal process is described in more detail in Section 3.5.5.2 Aboveground and Underground Conductor/Cable.

3.5.3.1.8 Splice Sites, Conductor, and Overhead Ground Wire Removal

Conductor and/or overhead ground wire removal would be facilitated using the pulling sites described in Section 3.5.3.1.7 Pull-and-Tension/Stringing Sites.

3.5.3.1.9 Jack-and-Bore Pits, Drilling Areas, and Pull-Back Areas for HDD

The Proposed Project would not involve the use of jack-and-bore construction techniques. HDD construction methods would be used to construct the proposed LSPGC Telecommunications Line. It is anticipated that an approximately 5-foot by 10-foot work area would be established

Table 3-7: Typical Excavation Dimensions

Proposed Project Feature	Typical Excavation Dimensions
LSPGC Collinsville Substation	
Transformer Bank	135 feet long, 60 feet wide, 8 feet deep
500 kV GIS and Control Enclosure	170 feet long, 40 feet wide, 4 feet deep
230 kV GIS and Control Enclosure	180 feet long, 32 feet wide, 4 feet deep
Dead-End	6-foot-diameter, 40 feet deep
LSPGC 230 kV Overhead Segment	
TSP (Pier Foundation)	12-foot-diameter, 20 to 50 feet deep
TSP (Direct Bury)	6-foot-diameter, 15 to 25 feet deep
Six-pole Guyed Structure (Direct Bury)	12-foot-diameter, 15 to 25 feet deep
LSPGC 230 kV Underground Segment	
Transition Vault	50 feet long, 15 feet wide, 15 feet deep
Duct Bank	3 to 6 feet deep, 7 to 10 feet wide
Riser Structure (Pier Foundation)	6-foot-diameter, 25 to 40 feet deep
PG&E 500 kV Interconnection	
LST (Pier Foundation)	4- to 8-foot-diameter, 20 to 40 feet deep
PG&E 12 kV Distribution Line	
Wood Pole (Direct Bury)	3- to 4-foot-diameter, 6 to 10 feet deep
LSPGC Telecommunications Line	
Handhole/HDD Entry/Exit Pit	1.5 feet by 1.5 feet, 1.5 feet deep

near each of the approximately 27 handholes that would be installed. These work areas would typically be located on paved or landscaped areas and would be used to stage the drilling equipment, complete the cable installation, and install the handholes.

3.5.3.1.10 Retaining Walls

The Proposed Project would not involve the construction of retaining walls.

3.5.3.2 Work Area Disturbance

Implementation of the Proposed Project would result in both temporary and permanent impacts. Table 3-8: Work Area Disturbance provides work area dimensions (including both temporary and permanent footprints) for each Proposed Project component. Attachment 3-A: Detailed Route Map depicts the locations of the anticipated temporary and permanent disturbance areas associated with the Proposed Project.

3.5.3.3 Temporary Power

To provide temporary power and a backup power source, a nearby existing overhead distribution system would be tapped. PG&E would install a distribution line on wood poles to provide power to the proposed LSPGC Collinsville Substation site and associated staging area during construction. If distribution power is not available in a timely manner, temporary generators would be used as a contingency for power during construction. The proposed distribution line supporting the proposed LSPGC Collinsville Substation would also serve the facility during O&M as a backup power source. Each pole of the distribution line would disturb approximately 0.04 acre for a total disturbance of approximately 0.8 acre for the 21 poles. The other staging areas would rely on temporary generators for power during construction, if needed.

3.5.4 Site Preparation

3.5.4.1 Surveying and Staking

The centerline would be surveyed and marked at line-of-sight intervals, at points of intersection (including offset stakes marking the edges of the access road ROW), and at all known underground facilities. Any sensitive biological, cultural, paleontological, or hydrological resources, where appropriate, would also be clearly marked to restrict construction activities and equipment from entering these areas.

3.5.4.2 Utilities

Prior to initiating construction in any given area, all utility companies with utilities located within or crossing the Proposed Project ROW would be notified to locate and mark existing underground facilities along the entire length of the Proposed Project's current construction area. No subsurface work would be conducted that would conflict with (i.e., directly impact or compromise the integrity of) a buried utility. In the event of a conflict, areas of subsurface excavation or pole installation would be realigned vertically and/or horizontally, as appropriate, to avoid other utilities and provide adequate operational and safety buffering. In instances where separation between third-party utilities and underground excavations would be less than 5 feet, the intended construction methodology would be submitted to the owner of the third-party utility

Table 3-8: Work Area Disturbance

Disturbance Area Type	Disturbance Type	Typical Dimensions (feet)	Approximate Quantity	Approximate Disturbance Area (acres)
Temporary Access Road	Temporary	16 feet wide	16	3.7
Staging Area	Temporary	Varies	5	32.3
Structure Work Area	Temporary	200 by 200 (500 kV) 120 by 200 (230 kV) 40 by 40 (Distribution)	42	16.1
	Permanent	20-foot-diameter (Tangent TSP, Dead-End TSP, and Wood Distribution Pole) 60 by 27 (500 kV LST) 20-foot-diamter (Six-Pole Dead-End TSP) 130 by 40 (In-River Transition Structure)	42	0.8
Pulling Site	Temporary	500 by 280 (500 kV) 600 by 100 (230 kV)	18	23.0
Utility Vault Work Area	Temporary	330 by 315	1	1.3
Underground Duct Bank Work Area	Temporary	1,070 by 50 2,000 by 50	2	2.0
Riser Pole Work Area	Temporary	50 by 30	2	< 0.1
Handhole/HDD Work Area	Temporary	10 by 5	27	< 0.1
LSPGC Collinsville Substation	Permanent	930 by 780 125 by 20 (Driveway) 30-foot-buffer on substation wall (Fire Break)	1	11.1
	Temporary	1,140 by 1,560	1	12.6

Notes:

- Approximately 200-foot by 200-foot helicopter landing zones would be included within staging areas and select pulling sites.
- All salvaged topsoil would be stored on site in the immediate vicinity of temporary disturbance areas, at a nearby approved work area, or at a staging area. Exact stockpile locations have not been identified as geotechnical investigations have not been completed and quantities of stockpile salvage are unknown.
- The identified disturbance areas are inclusive of any required excavation limits.
- All work at existing PG&E substations would occur within their existing fence lines.
- The reported disturbance area removes overlap between work areas

for review and approval at least 30 days prior to construction. Exploratory excavations (e.g., potholing) would be conducted, as appropriate, to verify the locations of existing facilities in the field. Construction methods would be adjusted as necessary to ensure that the integrity of existing utility lines is not compromised. No existing overhead utilities would need to be relocated to accommodate the Proposed Project.

The proposed LSPGC 230 kV Submarine Segment would be located in proximity to the Transbay Cable, an operational single-circuit direct current 200 kV underwater transmission line. The Transbay Cable exits the water and connects to PG&E's existing Pittsburg Substation. At this time, final engineering has not been completed and the need for a crossing of the Transbay Cable is unknown. Should a crossing of the Transbay Cable be required, LSPGC would coordinate with Transbay Cable LLC/NextEra Energy Transmission LLC. It is not anticipated that any other underground utilities would be identified along any of the Proposed Project components. In the event that any other underground utilities are identified, LSPGC and/or PG&E would work with the owner of those utilities to determine if design changes can be made or if relocation procedures and locations are necessary.

As described previously in Section 3.5.3.3 Temporary Power, a new overhead electric distribution line would be installed to provide power for construction from an existing distribution line (proposed PG&E 12 kV Distribution Line). The proposed distribution line would be installed on approximately 21 new wood poles that would be installed along Stratton Lane. Section 3.5.5 Transmission Line Construction (Above Ground) provides a description of the construction techniques that would be used to install the distribution line.

3.5.4.3 Vegetation Clearing

Vegetation would be trimmed or removed within construction work areas to facilitate the safe construction of the Proposed Project and reduce the potential for fire. Only the minimum amount of vegetation clearing would be conducted to enable safe access and construction.

Vegetation removal would be completed utilizing mechanized removal equipment or by hand using chain saws or other hand-held equipment. During temporary grading activities, any disturbed topsoil would be salvaged, where appropriate, to a maximum depth of 6 inches, or to the actual depth if shallower, for on-site storage and use in site restoration. Salvaged topsoil material would be kept on site in the immediate vicinity of temporary disturbance areas, at a nearby approved work area, or at a staging area to be used in the restoration of temporarily disturbed areas as appropriate.

3.5.4.4 Tree Trimming and Removal

Tree trimming and removal are not anticipated as part of the Proposed Project. However, trimming and removal would be conducted according to current standards and regulatory requirements. PG&E's easements would typically include the right to remove trees anywhere within the easement that could pose a threat to the lines or adjacent resources.

3.5.4.5 Work Area Stabilization

Work areas would be stabilized using the best management practices (BMPs) described in one or more Proposed Project-specific Storm Water Pollution Prevention Plans (SWPPPs) and as

discussed in more detail in Section 5.10 Hydrology and Water Quality. The SWPPP BMPs would remain in place and would be maintained until new vegetation is established, as defined in the SWPPP(s). Typical BMPs that would be used for work area stabilization are presented in Section 3.5.9 Dust, Erosion, and Runoff Controls. With the application of typical BMPs and minor grading at select work areas, as appropriate, no slope stabilization issues are anticipated.

3.5.4.6 Grading

Staging areas and construction work areas would be located in generally flat areas; however, minor grading and/or vegetation removal would occur as necessary to provide a safe area for construction. If required, sites would be graded to maintain the direction of the natural drainage and would be designed to prevent ponding and erosion.

The proposed LSPGC Collinsville Substation site would require more substantial grading to prepare it for development. Generally, grading and excavation would be completed such that the site meets the Proposed Project's design specifications and matches proposed grades. During earthwork, soils and other surficial deposits that do not possess sufficient strength and stability to support structures would be removed from the site. Removal would typically extend to competent materials with high mechanical strength and resistance to erosion and deformation. In addition to general earth-moving quantities, 4 to 8 inches of surface gravel would be imported from a suitable nearby aggregate source and installed as finish stone within the proposed LSPGC Collinsville Substation pad for grounding purposes. An approximately 3-foot-wide band of gravel would also be placed around the substation wall to serve as a fire break. All clean spoils excavated by the Proposed Project would be used on site to balance cut-and-fill calculations, as feasible. All spoils that are not usable and/or contaminated would be sent to a properly licensed landfill facility. Table 3-9: Detailed Collinsville Substation Grading Volumes summarizes the anticipated grading and import/export requirements at the proposed LSPGC Collinsville Substation.

Table 3-9: Detailed Collinsville Substation Grading Volumes

Grading Type	Estimated Volume (cubic yards)
Total Cut	36,000
Total Fill (Select Import and Net Fill)	44,000
Total Export/Wasted	7,000
Total Import (Select Import/Structural Fill)	17,000

3.5.5 Transmission Line Construction (Above Ground)

3.5.5.1 Poles/Towers

Approximately one existing LST would be removed and both new LSTs and TSPs would be installed for the transmission components of the Proposed Project. Wood poles would be installed for the distribution line. The approximate average depth and diameter of excavation and approximate volume of soil to be excavated for all of the Proposed Project structures is summarized in Table 3-10: Proposed Transmission Line and Distribution Line Specifications.

Table 3-10: Proposed Transmission Line and Distribution Line Specifications

ROW Width (feet)	Approximate Length (miles)	Typical Structure Spacing (feet)	Structure Type	Approximate Number of Structures	Approximate Permanent Disturbance Area (square feet)	Foundation Type	Maximum Aboveground Height (feet)	Typical Pole/ Foundation Diameter (feet)	Typical Underground Depth (feet)
LSPGC 230 kV Overhead Segment									
100 to 230	1	800 to 1,300	Tangent TSP	2	314	Direct-bury	180	6	25
			Six-pole dead-end TSP	1	6,600	Direct-bury	180	6	25
			Dead-end TSP	4	314	Drilled Pier	199	12	40
			In-River Transition Structure	1	5,200	Driven Piles with Pile Cap	90	N/A	30 to 80
PG&E 500 kV Interconnection									
150 to 350	2.8	800 to 1,500	LST	13	1,620	Drilled Pier	120	4 to 8	30
PG&E 12 kV Distribution Line									
20	0.9	275	Wood	21	314	Direct-bury	40	3	8

No pole topping is anticipated to be required for the Proposed Project. The transmission structures would be designed with sufficient conductor and ground wire spacing so that raptors cannot simultaneously contact two conductors or one conductor and a ground wire, which could cause electrocution (APLIC 2006). Further, appropriate methods to reduce the risks of avian collisions would be incorporated into the Proposed Project design (APLIC 2012).

3.5.5.1.1 Pole/Tower Removal

The proposed PG&E 500 kV Interconnection would require the removal of approximately one existing LST, representing the only planned demolition activities associated with the Proposed Project. One or more cranes would be rigged to the top of the tower and the legs would be cut off just above or at the foundations. Helicopters may be used to remove the existing structure. The tower would then be lowered to the ground, where it would be crushed and/or dismantled prior to being transported off site by flatbed trucks. The removed tower would be transported to a staging area for further disassembly prior to being recycled or disposed of at an approved facility.

Following tower removal, each foundation would be removed to a depth of approximately 2 to 5 feet below grade. The existing concrete would be broken using an excavator with a breaker attachment, and existing rebar would be cut using appropriate tools. The removed material would be loaded into dump trucks for disposal or recycling at an approved facility. Following foundation removal, the void would be backfilled using native spoils previously excavated from the vicinity or imported fill. Excess removed material may be stored temporarily at work sites and ultimately loaded into dump trucks for disposal at an approved facility.

3.5.5.1.2 Pole/Tower Installation

Direct-Bury Poles

Direct-buried poles would be installed along the proposed LSPGC 230 kV Transmission Line and proposed PG&E 12 kV Distribution Line. Each pole would require a hole to be excavated using an auger, backhoe, foam, or hydraulic or pneumatic equipment (e.g., jackhammers and drills). In some locations, steel casing may be placed to stabilize the excavation walls prior to installation of the pole.

Following excavation of the pole hole, the pole would then be installed in the excavated or augured holes, typically by a crane or a line truck with an attached boom. The base would be secured by backfilling with the excavated material, gravel, controlled low-strength material, or concrete in the interstitial space between the wall of the excavated or augured hole and the pole.

In some locations, guy wires would be required to provide additional support to the pole. The guy wire would be attached to the pole, and anchors would be used to secure the guy wire to the ground. Material excavated for foundation construction would be trucked off site or spread across the surrounding area within the ROW.

Pier Foundation-Mounted Poles

The proposed LSPGC 230 kV Transmission Line would require the installation of 230 kV TSPs on concrete pier foundations. Foundation construction would begin by using large augers and drill rigs to complete the required excavations and, if necessary, a reinforcing steel rebar cage would then be lowered into the excavation. A temporary form extending approximately 2 feet

above grade would then be constructed, and a concrete truck would be used to pour concrete and fill the excavation. Each completed foundation would be left to cure for approximately 28 days, then the form would be removed. The approximate average depth and diameter of excavation, approximate volume of soil to be excavated, and approximate volume of concrete or other backfill required are summarized in Table 3-10: Proposed Transmission Line and Distribution Line Specifications. Material excavated for foundation construction would be trucked off site or spread across the surrounding area within the ROW.

After the foundation is cured, TSPs would be delivered to the temporary construction area using a flatbed truck. Cranes would be used to lift and place the proposed poles/pole segments onto the foundation. Cranes and/or bucket trucks would lift workers into elevated positions to attach pole crossarms and other hardware onto the assembled pole. Helicopters may be used instead of cranes.

In-River Transition Structure

The in-river transition structure would be constructed, consisting of three vertical poles connected by horizontal steel members would be supported using driven piles topped with a concrete pile cap. The in-river transition structure construction would begin by utilizing a vibratory hammer or impact hammer to drive approximately eight to twelve 18 to 30-inch-wide and 0.75-inch-thick tube piles into the sediment to an embedded depth of between 30 to 80 feet. Following the pile installation, a form for an approximately 40-foot by 130-foot concrete cap would be constructed atop the piles. The form would be filled with concrete and once cured, the form would be removed and the transition structure components would be installed utilizing similar methods as the pier foundation-mounted poles described previously.

Lattice Steel Towers

The proposed PG&E 500 kV Interconnection would require the installation of LSTs. Each LST would be installed atop up to four pier foundations. Each pier foundation would be constructed using similar methods for the TSP foundations described in the previous subsection.

After the foundations have cured, assembled segments of each LST would be delivered to the temporary construction area using a flatbed truck. Cranes would then move each structure segment into place, and construction crew members would use aerial lift trucks to access the tower and attach the segments using hardware. Helicopters may be used instead of cranes.

3.5.5.2 Aboveground and Underground Conductor/Cable

Aboveground conductor/cable installation and removal (i.e., wire stringing) activities would be conducted similar to the methods detailed in the Institute of Electrical and Electronics Engineers Standards Association Standard 524-2016, Guide to the Installation of Overhead Transmission Line Conductors. Safety devices (e.g., traveling grounds and radio-equipped construction crews) would be in place prior to the initiation of wire-stringing activities.

Wire stringing includes all activities associated with the installation of the conductors onto transmission line structures. These activities include the installation of conductor, telecommunications cable (where applicable), insulators, stringing sheaves (rollers or travelers),

vibration dampeners, weights, suspension, and dead-end hardware assemblies for the entire length of the route.

The following steps describe typical wire-stringing activities:

- Sock Line Threading: Using a bucket truck, a lightweight sock line is threaded through wire rollers attached to each structure and is secured using a camlock device. Alternatively, helicopters may be used to fly the sock line from structure to structure.

- Pulling: The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope and/or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. The new conductor would be installed by utilizing conductor tensioning equipment at the pulling site.

- Splicing, Sagging, and Dead-Ending: After the conductor is pulled in, any necessary mid-span splicing would be performed. The conductor would then be sagged to proper tension and dead-ended to structures.

- Clipping In: After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called “clipping in.” Once this is complete, spacers would be attached between the conductors of each phase to keep uniform separation between each conductor.

Conductor installation activities would be conducted at pulling sites and structure work areas as depicted in preliminary locations in Attachment 3-A: Detailed Route Map. Pull sites along the 230 kV transmission facilities would typically be 550 feet by 120 feet and spaced approximately 2,000 feet apart, while pull sites along the 500 kV transmission facilities would typically be 600 feet by 200 feet and spaced approximately 3,000 feet apart. If needed, conductor splicing would be performed using compression splices applied in accordance with manufacturer recommendations. Anchor poles may be used in pulling sites during conductor installation activities.

Construction methods for belowground cable installation are described in Section 3.5.6 Transmission Line Construction (Below Ground).

3.5.5.3 Telecommunications

As described previously, two new telecommunications paths would be installed as part of the Proposed Project. The first path would involve installing a PG&E-owned microwave tower at the proposed LSPGC Collinsville Substation. The second path would involve installing two new underground fiber optic cables within the City of Pittsburg’s streets until reaching a new fiber hub located adjacent to and north of PG&E’s existing Pittsburg Substation, as shown in Attachment 3-A: Detailed Route Map. A new underground fiber optic cable would continue from the fiber hub until reaching the utility vault installed as part of the proposed LSPGC 230 kV Transmission Line. These portions of fiber optic cable would be installed using HDD techniques, as described in Section 3.5.6.4 Trenchless Techniques. Within the utility vault, the fiber optic cable would be spliced to one of the proposed submarine cables. A new OPGW cable would be

installed above the primary conductors between the proposed in-river transition structure and the proposed LSPGC Collinsville Substation along the new structures installed as part of the proposed LSPGC 230 kV Overhead Segment. This cable would be installed using similar methods as the primary conductors, as described in Section 3.5.5 Transmission Line Construction (Above Ground).

3.5.5.4 Guard Structures

As described in Section 3.5.3.1.6 Temporary Guard Structures, guard structures are not anticipated as part of the Proposed Project.

3.5.5.5 Blasting

Blasting is not anticipated as part of the Proposed Project.

3.5.6 Transmission Line Construction (Below Ground)

3.5.6.1 Trenching

Unless alternate methods are required to cross existing facilities or sensitive resources, duct banks and utility vault would be installed using open-cut trenching techniques. The duct banks would typically have a double-duct-bank vertical configuration, as shown in Figure 3-10: Underground Duct Bank Typical Drawing, with occasional transitions to a flat configuration to clear substructures in highly congested areas, or to fan out to the proposed utility vault and riser poles, as appropriate. Excavators and other earth-moving equipment would be used to establish trenches 3 to 6 feet deep and 7 to 10 feet wide depending on the duct bank configurations. Excavation to install the utility vault would begin by grading back the shoreline for the jet sled to be pulled onto the shore. Approximately 100 feet from the shoreline, a trench would be excavated that is approximately 155 feet wide, 90 feet long, and 11 feet deep. Depths may vary depending on soil stability and the presence of existing substructures. The trench would be widened and shored where necessary to meet California Division of Occupational Safety and Health (Cal/OSHA) safety requirements. Dewatering is anticipated during trenching and underground duct bank installation activities conducted within proximity of PG&E's existing Pittsburg Substation. The proposed dewatering procedures would be similar to those required to dewater overhead transmission line excavations, as described in Section 3.5.10.2 Dewatering.

At any one time, open trench lengths would not exceed those required to facilitate the installation of the duct banks. Steel plating would be placed over or fencing installed around open trenches, where appropriate, and across those areas that are not under active construction.

Throughout trench excavation and the installation of the duct bank and vault, excavated materials would be hauled off site for disposal. All spoil would be tested in accordance with applicable standards for hazardous materials. All materials would be transported off site and disposed of at an approved facility. Excavated materials may be used as backfill if the material is deemed suitable. In the event that existing concrete must be removed to facilitate trenching activities, concrete saws and other pavement-breaking machines would be used. If this equipment is unable to access the required removal areas, jackhammers would be used on an as-needed basis to break up concrete.

3.5.6.2 Duct Bank Installation

As the trenches for the underground duct banks are excavated, cable conduits (separated by spacers) would be installed and concrete would be poured around the conduits to form the duct banks. Each duct bank would typically consist of approximately 8-inch-diameter PVC conduits, which would house the electrical cables. An approximately 4-inch-diameter conduit would also be included to house ground continuity conductor and multiple 2-inch-diameter conduits would also be included to house the communication fibers. The dimensions of the duct banks would be approximately 6 feet wide and 2.5 feet high.

Once the duct banks are installed, engineered backfill would be imported, placed, and compacted. Each duct bank would have a minimum of 36 inches of cover. While the completed trench sections are being backfilled, additional trench line would be opened farther down the alignment. This process would continue until the entire duct bank is in place.

3.5.6.3 Cable Pulling, Splicing, and Termination

After installation of the conduit, cables would be installed in the duct banks. Each cable segment would be pulled into the duct bank, spliced at each of the vaults along the route (if applicable), and terminated at the transition where the lines convert to overhead. To pull the cable through the ducts, a cable reel would be placed at one end of the section and a pulling rig would be placed at the other end. A large rope would then be pulled into the duct using a fish line and attached to the cable pulling eyes. The cable pulling eyes would then be attached to the conductor, and the cable would then be pulled through the duct. A lubricant would be applied to the cable as it enters the duct to decrease friction during pulling. A similar process would also be used to pull the associated communication cables into the duct banks.

3.5.6.4 Trenchless Techniques

3.5.6.4.1 Hydroplow

The submarine cables would be buried 6 to 15 feet below the sediment surface, or as specified by engineering and/or permitting agency requirements, to protect them from mechanical damage. Cables would be installed by using a hydroplow that is pulled along the seabed behind a barge. The hydroplow would consist of a water jet and a long blade mounted to either a sled- or track-mounted submerged vehicle. The blade would contain water nozzles on the leading edge that mobilize the sediment using high-pressure water. The submarine cable would be fed from the barge down to the seabed through the blade and would exit at the foot of the blade to be laid directly into the river bottom sediments. The length and angle of the blade would determine the burial depth of the cable. As the blade moves forward and the cable is placed in the momentarily opened trench, the majority of the fluidized sediments behind the blade would fall back into the trench, effectively burying the cable. This cable-laying method causes considerably less environmental disturbance than traditional mechanical trenching methods. In areas where operation of the hydroplow would be difficult, divers may manually guide the water jet to open a furrow and directly bury the cable. Divers would follow all applicable safety protocols outlined in the construction contractor's safety plan. Divers would not require additional boats to access the hydroplow. All vessel traffic supporting the proposed LSPGS 230 kV Submarine Segment installation would be coordinated with the USCG, Vessel Traffic Service, the Harbor Master, and other applicable agencies as part of the permitting process for the Proposed Project. This

coordination would also occur prior to any anchoring or stationary positioning of barges or other vessels during periods of inactivity.

The installation of each submarine cable would take between 20 and 25 days and would include between 7 and 10 days of 24-hour continuous cable-laying work within the Delta. Once the hydroplow initiates the cable installation process, it would not stop until the cable has been completely installed. Pulling each cable into the transition vault near PG&E's existing Pittsburg Substation would take an additional 3 to 5 days. Tying each cable off at the in-river transition structure would take an additional 2 to 4 days. An additional 2 to 7 days would be required to test the cable and tow the equipment back to the landing site to prepare for the next cable installation process. Lastly, 12 to 15 days would be required to reload the barge with the next cable, representing the anticipated periods of inactivity along the submarine cable route during the cable installation process. While the barge is being reloaded, work may continue at the in-river transition structure or near the shoreline in Pittsburg.

As shown on Figure 3-1: Project Overview Map, the U.S. Army Corps of Engineers (USACE) maintains two navigational channels crossed by the proposed LSPGC 230 kV Submarine Segment—the San Joaquin Ship Channel and the Sacramento Deep Water Ship Channel. These channels are maintained at a depth of 30 and 35 feet, respectively. The existing channel depth in these locations ranges between 35 and 90 feet. Because the cables would typically be buried 6 to 15 feet below the existing sediment surface, they would be below any planned dredging within these channels. In addition and as described in Section 5.12 Mineral Resources, the proposed LSPGC 230 kV Submarine Segment cables would cross Lind Marine, Martin Marietta Marine Operations, LLC, and Suisan Associates (Lind Marine's) active dredging operation in Suisun Bay. Lind Marine conducts sand mining operations through intentional dredging of sand and fine to medium gravel to be later used and sold for commercial purposes. LSPGC has designed the submarine cable to minimize the crossing length within Lind Marine's operations and would obtain a lease agreement and a lease encumbrance permit/agreement from the California State Lands Commission (CSLC) for encumbering on the existing mining lease. With these agreements in place, Lind Marine's activities in the vicinity of the cables would be prohibited, protecting them from incidental impacts. Lastly, as described in APM GEN-1, LSPGC would prepare a scour analysis to assist with designing the cable routes and ensuring they are buried to suitable depths.

3.5.6.4.2 Horizontal Directional Drilling

HDD is a boring technique that would be used to install the proposed LSPGC Telecommunications Line. HDD involves drilling along a horizontal arc that would pass beneath the resource or infrastructure to be avoided. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the drill. The first step would be to drill a pilot hole. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point in the entry pit. Once the pilot hole is completed, a succession of larger cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the cable. Once the drill hole reaches the correct diameter, a pulling head would be attached on the end of the cable section, and the cable would be pulled through the drill hole until it surfaces on the other side. The

completed, drilled crossing would then be connected, as appropriate, and the entry and exit pits would be backfilled.

3.5.6.5 Drilling Muds and Fluids

Drill lubrication containing water, bentonite clay, and additives (referred to as "drilling mud") would be used to aid the drilling, coat the walls of the bore hole, and maintain the opening. During the bore, drilling fluid would be pumped under high pressure through the drill stem to the rotating cutting head and would return the soil cuttings to a pit at the surface entry point. No additives that are considered hazardous, according to federal and state laws, would be used during the HDD process. The drilling fluid would be filtered/cleaned, conditioned, and reused to the extent feasible. Excess drilling mud is anticipated to be hauled off site after construction for disposal at an approved facility. If a frac-out occurs, the boring operation would be assessed to determine whether the bentonite needs to be contained.

3.5.7 Substation, Switching Stations, Gas Compressor Stations

3.5.7.1 Substation Installation

Construction of the proposed LSPGC Collinsville Substation would begin with site preparation and grading of the site, followed by installation of foundations and underground equipment, and then installation and testing of electrical equipment. Prior to clearing and grubbing, all necessary surveys, marking, and installation of storm water management features (e.g., silt fence and fiber rolls) would be completed. In addition, fencing driveways and gates would be installed (some on a temporary basis) to provide site security during construction activities. Following construction, temporary disturbance areas would typically be recontoured to match pre-construction grades.

Following site preparation and grading, all necessary below-grade construction (including structure and equipment foundations, underground ducts, ground grid, and construction of the control enclosure) would begin. Once all earthwork and below-grade work are completed, major equipment and structures would be installed and anchored to their respective foundations. It is anticipated that all major electrical and substation equipment (e.g., power transformers, reactors, power circuit breakers, control enclosure, and reactors) would be delivered to the substation footprint and placed directly on the previously constructed foundations. Other substation equipment (e.g., air disconnect switches, instrument transformers, transmission structures, insulators, conductors, rigid bus, connectors, conduit, cable trench, and rebar) would be received and temporarily stored at the staging area prior to installation. Transmission interconnection line terminations and distribution connections would be completed inside the proposed LSPGC Collinsville Substation facility following final installation of the substation structures and equipment.

As described in Section 3.5.1.2 New Access Roads, the proposed LSPGC Collinsville Substation would be accessed using a new driveway extending from Stratton Lane. The gravel driveway would be approximately 20 feet wide and 125 feet long. PG&E would access control equipment within the substation perimeter using a new approximately 336-foot-long and 20-foot-wide access road that would be installed on the east side of the substation. The substation internal access roads would be paved and maintained for safe access for substation O&M activities.

The proposed LSPGC Collinsville Substation would be surrounded by an approximately 10-foot-tall, prefabricated interlocking security wall. The prefabricated interlocking security wall would be consistent with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) guideline 14 and would include approximately 1 foot of barbed wire atop the wall. One approximately 16-foot-wide gate would be placed at the main entrance to the substation.

The substation would include a SCADA system that would consist of fully redundant servers, power supplies, and Ethernet LAN and WAN connections, routers, firewalls, and switches.

3.5.7.2 Civil Works

Civil work at the proposed LSPGC Collinsville Substation site would include grading and the installation of a stormwater detention basin. The graded area would be used for the construction of the substation, as well as staging, spoil or import storage, drainage, and the substation driveway and parking areas. Prior to grading, the substation site would be cleared of all vegetation. The proposed slope of the substation would be approximately 1 percent from north to south, toward the stormwater detention basin. Final elevation profiles, and resulting storm water flow directions, have not been engineered and would be developed during the detailed engineering phase of the Proposed Project. Initial grading contours have been included in the geographic information system data that has been submitted under separate cover.

A proposed stormwater detention basin at the southern boundary of the proposed LSPGC Collinsville Substation has been included in the preliminary design, as depicted in Attachment 3-A: Detailed Route Map. Because the proposed LSPGC Collinsville Substation would be located in Solano County, it would need to comply with the Bay Area Stormwater Management Agencies Associates (BASMAA) and the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit (Provisions E.12) as follows:

- All regulated projects (i.e., projects that create or replace 5,000 square feet or more of impervious surface) are required to implement stormwater detention basins for low-impact development standards.

- Storm water capture is determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No.23/ASCE Manual of Practice No.87 (1998), pages 175-178.

The BASMAA Post-Construction Manual recommends preliminarily sizing basin facilities at 4 percent of the tributary's impervious area. The proposed stormwater detention basin would be 4 to 5 percent of the impervious area created by the proposed LSPGC Collinsville Substation components. The basin's current design assumes that the entire 11 acres would be considered impervious during a 2-inch rain event. As a result, the basin would measure approximately 3 feet deep, 75 feet wide, and 355 feet long. In total, approximately 6,700 cubic yards of material would be excavated to prepare for the basin, which would be constructed using an excavator and typical compaction machinery. The stormwater detention basin's design would be refined once geotechnical investigations are complete, which would identify groundwater level ranges in the vicinity of the substation site.

3.5.8 Public Safety and Traffic Control

3.5.8.1 Public Safety

The Proposed Project, which would involve routing construction activities, would pose few public safety considerations. The Proposed Project alignment generally traverses remote and rural areas, and the population density along the Proposed Project alignment is very low and generally non-urbanized.

Public safety considerations during construction could include the following:

- Ramifications from spills of fuels or hazardous materials,
- Work being performed along public roadways and within waterways,
- Movement of construction equipment and materials along public roadways and within waterways,
- Helicopter use,
- Open excavations, and
- Effects from de-energized conductor being dropped during wire stringing.

Measures addressing public safety are discussed further in Chapter 5 – Environmental Impact Assessment.

3.5.8.2 Traffic Control

No trails, paths, or driveways would be impacted by the Proposed Project. Temporary impacts to sidewalks may occur during the construction of the proposed LSPGC Telecommunications Line within the City of Pittsburg. Traffic control procedures may be implemented intermittently along Stratton Lane, Marina Boulevard, Herb White Way, Halsey Way, Halsey Court, and adjacent roadways within the City of Pittsburg during construction and times of deliveries. These restrictions would be temporary, and detours are not anticipated to be necessary. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. LSPGC would secure encroachment permits as required from Solano County, Contra Costa County, and the City of Pittsburg and implement the corresponding traffic control plans prior to implementing lane closures.

3.5.8.3 Security

The perimeter of the proposed LSPGC Collinsville Substation would have a physical security system that would consist of a prefabricated interlocking security wall that would be 10 feet tall with an additional 1-foot barbed-wire extension at the top. The proposed LSPGC Collinsville Substation physical security would be designed in accordance with NERC CIP requirements with 24-hour monitoring, response, and control through the LSPGC control center and staff. The perimeter security wall would have one gate integrated with electronic access card readers. The proposed LSPGC Collinsville Substation design would include indoor and outdoor physical security cameras placed throughout the site. The security cameras would be routed through a network video recorder located in the WAN control panel and communicated to the LSPGC control center for monitoring.

3.5.8.4 Livestock

The Proposed Project area is not currently under active livestock grazing. As a result, temporary exclusion methods for livestock have not been proposed. The proposed LSPGC Collinsville Substation would include a perimeter physical security system consisting of an approximately 10-foot-tall pre-fabricated interlocking security wall that would preclude livestock from entering the facility. LSPGC does not have current plans to electrify the wall, and livestock grazing may occur in the adjacent lands surrounding the substation.

3.5.9 Dust, Erosion, and Runoff Controls

3.5.9.1 Dust

During construction, migration of dust from the construction sites would be limited by the APMs outlined in Section 5.3 Air Quality. These measures may include the use of water trucks and other dust control measures, including the application of non-toxic soil binders.

3.5.9.2 Erosion

LSPGC would obtain and comply with the Construction Stormwater General Permit Order 2022-0057-DWQ and implement the measures identified in the required SWPPP to effectively control erosion and minimize any associated impacts.

3.5.9.3 Runoff

The proposed LSPGC Collinsville Substation pad would be graded as part of the Proposed Project. The stormwater detention basin would be installed on the southern portion of the proposed LSPGC Collinsville Substation, as depicted in Attachment 3-A: Detailed Route Map, to help facilitate the return of water captured on site to the groundwater basin. The stormwater detention basin would be at or below the substation grade to collect storm water runoff from the substation's graded pad, depending on the final detailed design and in accordance with the BASMAA's Low Impact Development standards, which aim to mimic pre-project site hydrology. All storm water runoff from the Proposed Project would filter through the surrounding soil into the groundwater basin or evaporate.

3.5.10 Water Use and Dewatering

3.5.10.1 Water Use

Water for use during construction would be obtained from one or more sources, including municipal sources or private purveyors. In addition, SMUD operates an existing well, located northeast of the proposed LSPGC Collinsville Substation and across Stratton Lane, that may be suitable for obtaining water. It is estimated that approximately 6 million gallons of water would be needed for dust control, compaction, and concrete work. It is estimated that approximately 5.5 million gallons would be used for the proposed LSPGC Collinsville Substation and approximately 500,000 gallons would be used for the overhead components. Approximately 5 percent of the water required from the Proposed Project may be obtained from wells.

Construction crews would be responsible for providing their own drinking water during construction. The Proposed Project would not require water sources for O&M activities as the proposed LSPGC Collinsville Substation would be unmanned.

3.5.10.2 Dewatering

In instances where groundwater is encountered, excavations would be dewatered using one or more pumps and the water would be either discharged on site to the surface, if permitted, or stored in Baker tanks or similar equipment within staging areas prior to disposal off site. Baker tanks or similar equipment would be emplaced in the temporary work area established for new structure installation. Dewatered water may also be used for dust control. In all cases, water discharges would be conducted in accordance with all applicable federal and state regulations and in a manner that minimizes erosion and avoids impacting surface waters in the vicinity.

3.5.11 Hazardous Materials and Management

3.5.11.1 Hazardous Materials

Hazards and hazardous materials are discussed in greater detail in Section 5.9 Hazards, Hazardous Materials, and Public Safety. Construction of the Proposed Project would require the limited use of hazardous materials (e.g., fuels, lubricants, cleaning solvents, and chemicals). All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets (SDS) would be made available at the construction site for all workers. Based on the anticipated volume of hazardous liquid materials (e.g., fuel) that would be stored and dispensed at a staging area, a Spill Prevention, Control, and Countermeasure (SPCC) Plan would be required (in accordance with applicable provisions of Title 40, Parts 112.1 to 112.7 of the CFR). An SPCC Plan, covering the O&M phase of the LSPGC Proposed Project components, would also be prepared and implemented, as applicable.

Although not expected, if pre-existing hazardous waste is encountered on the Proposed Project site, it would be removed and disposed of in a manner consistent with all state and federal regulations. It is not anticipated that pesticides would be used during construction.

3.5.11.2 Hazardous Materials Management

Hazards and hazardous materials are discussed in greater detail in Section 5.9 Hazards, Hazardous Materials, and Public Safety. Prior to construction, an SPCC Plan and HMMP would be prepared, describing hazardous materials use, transport, storage, management, and disposal protocols. Construction would not begin until the SPCC Plan and HMMP are complete. The plans would be prepared in accordance with relevant state and federal guidelines and regulations (e.g., Cal/OSHA). The HMMP would include the following information related to hazardous materials and waste as applicable:

- A list of hazardous materials present on site during construction and O&M to be updated as needed along with product SDS and other information regarding storage, application, transportation, and disposal requirements;
- A Hazardous Materials Communication Plan;
- Assignments and responsibilities of Proposed Project Health and Safety roles;
- Standards for any secondary containment and countermeasures that would be required for hazardous materials; and

- Spill response procedures based on product and quantity.

The procedures would include the materials to be used, location(s) of such materials within the Proposed Project area, and disposal protocols, as well as protocols for the management, testing, reporting, and disposal of potentially contaminated soils or groundwater observed or discovered during construction. This would include termination of work within the area of suspected contamination sampling by an Cal/OSHA-trained individual and testing at a certified laboratory. An HMMP, covering the O&M phase of the LSPGC Proposed Project components, would also be prepared and implemented, as applicable.

3.5.12 Waste Generation and Management

3.5.12.1 Solid Waste

Solid wastes generated during construction would primarily be non-hazardous wastes, including metal, paper, and plastic packaging. Construction debris volumes are estimated at a total of 2,750 cubic yards. Earthwork associated with the Proposed Project would require cut and fill, and a balanced cut-and-fill approach is planned. Should there be any excess fill material after the completion of grading, it would be minimal. If possible, recyclable construction material would be transported to an approved recycling facility. Construction waste that cannot be recycled would ultimately be disposed of at the Potrero Hills Landfill, Recology Hay Road Landfill, Mt. Diablo Recycling Center, or another approved facility. Construction waste would be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste that would include, but not be limited to, the California Integrated Waste Management Act of 1989, which set reduction rates for solid waste sent to landfills.

3.5.12.2 Liquid Waste

Liquid waste streams anticipated for the Proposed Project primarily include sanitary waste and storm water runoff. Sanitary waste from self-contained portable toilets would be routinely pumped as needed and would be taken by the vendor to a proper sanitary waste facility for disposal. The sanitary waste that would be generated is estimated at 100 to 150 gallons per week per 10 workers on site. Sanitary waste would be transported by the licensed sanitary waste service providers for off-site disposal at their contracted treatment, storage, and disposal facility.

Storm water runoff would be managed according to a SWPPP prepared to comply with the Construction Stormwater General Permit Order 2022-0057-DWQ and approved by the Central Valley Regional Water Quality Control Board. While contaminated groundwater is not anticipated to be encountered, excavation dewatering effluent may be produced. Dewatering is not planned as part of the in-river transition structure construction. This effluent would be filtered and managed according to the dewatering plan developed as part of the SWPPP.

3.5.12.3 Hazardous Waste

As discussed in Section 3.5.11 Hazardous Materials and Management, Proposed Project construction would require the limited use of hazardous materials (e.g., fuels, lubricants, cleaning solvents, and chemicals). Additionally, the Proposed Project would include transformers containing mineral oil, which is considered a hazardous material in California. Additional potentially hazardous waste sources during construction include contaminated soils,

incidental spill waste, and concrete washout. Waste generated or encountered would be handled, contained, and disposed of according to local, state, and federal regulations. In addition, prior to construction, an HMMP would be prepared describing hazardous materials use, transport, storage, management, and disposal protocols. This could include containerization in California Department of Transportation-approved vessels, review of relevant SDS, use of secondary containment, and/or training of material handlers to ensure worker safety and the reduction of cross-contamination. The location for hazardous waste disposal would be identified in the HMMP.

3.5.13 Fire Prevention and Response

3.5.13.1 Fire Prevention and Response Procedures

The Proposed Project would not be located in an area designated as a high Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection or within a CPUC-designated High Fire Threat District. Tree trimming and vegetation removal would be implemented, as necessary, to prevent fire. Fire response services would be provided by the Montezuma and Contra Costa Fire Protection Districts.

The Proposed Project includes an APM that identifies the need for a Proposed Project-specific Construction Fire Prevention Plan (CFPP) that would address construction fire risks and minimization measures. To fully mitigate any potential fire hazards during construction, a Proposed Project-specific CFPP would be prepared and implemented. The Proposed Project-specific CFPP would be submitted to the CPUC after issuance of the CPCN and prior to requesting the Notice to Proceed.

3.5.13.2 Fire Breaks

During construction activities that are considered “hot work” (e.g., welding, grinding, or any other activity that creates hot sparks), a 10-foot buffer around that activity would be implemented, and vegetation would be cleared to ensure sparks do not create a fire hazard. The proposed workspaces described in Section 3.5.3.1 Construction Work Areas and depicted in Attachment 3-A: Detailed Route Map account for these buffer areas. For activities that do not produce sparks but still have potential to produce a fire hazard, such as ground rod or ground wire installation, a 5-foot buffer would be cleared of vegetation, and additional details (i.e., handling sparks) would be provided in the CFPP.

Under Section 35 of GO 95, the CPUC regulates all aspects of design, construction, and O&M of electrical power lines and fire safety hazards for utilities subject to its jurisdiction (CPUC 2020). In addition, Fire Prevention Standards for Electric Utilities (14 CCR Sections 1250-1258) provide definitions, maps, specifications, and clearance standards for projects under the jurisdiction of PRC Sections 4292 and 4293 in State Responsibility Zones. LSPGC would create a fire break around the proposed LSPGC Collinsville Substation in accordance with all applicable state and federal regulations. The fire break would be achieved by creating an approximately 30-foot vegetation-free buffer zone surrounding the substation’s wall. Gravel would applied for the first 3 feet of the fire break, and the remaining 27 feet would be cleared of vegetation using mechanical methods or state-approved herbicides, as appropriate. In this vegetation-free buffer zone, no vegetation above 3 inches in height would be allowed. Section

3.8.5 Vegetation Management Programs provides a more detailed discussion of vegetation management.

3.6 CONSTRUCTION WORKFORCE, EQUIPMENT, TRAFFIC, AND SCHEDULE

3.6.1 Construction Workforce

Construction of the Proposed Project facilities would occur simultaneously. The peak employment is anticipated to be approximately 160 workers per day, but on average, the workforce on site would be less (approximately 63 workers). Total vehicle round trips during this construction period would be approximately 221 per day, consisting of approximately 33 truck trips (based on substation cut and fill, as well as 188 automobile worker trips). Additionally, workers would commute to the Proposed Project sites from adjacent rural areas and would utilize options, such as vanpools and carpools, to reduce their reliance on single-occupancy vehicles. Any traveling workers that would not return to their homes between workdays would obtain temporary off-site accommodations (e.g., hotels or other short-term rentals in the region) during construction. Hotels and short-term rentals are available in the Proposed Project vicinity, including Suisun City, Fairfield, and Pittsburg. No on-site temporary housing would be constructed.

3.6.2 Construction Equipment

The equipment that would be used to construct each Proposed Project component, along with its approximate duration of use, is provided in Table 3-11: Proposed Construction Equipment and Workforce.

3.6.3 Construction Traffic

Construction vehicles and equipment would typically access the Proposed Project area located in Solano County from Stratton Lane. Access to the Proposed Project area located in Contra Costa County would be provided from the Railroad Avenue exit from State Route 4. Although some disruption to traffic flow may occur when trucks ingress or egress from the Proposed Project would ensure impacts to traffic in the Proposed Project area are minimized during construction.

area, such events would be periodic and temporary. Signage and/or flagmen would be used, as appropriate, to reduce potential disruptions to traffic flow and to maintain public safety during construction.

Worker vehicle parking would occur within the area where LSPGC would acquire land rights for the proposed LSPGC Collinsville Substation, as well as the staging areas identified in Attachment 3-A: Detailed Route Map.

The peak vehicle trips would be from approximately June 2027 through September 2027 during the below-grade and above-grade construction at the proposed LSPGC Collinsville Substation and proposed LSPGC 230 kV Transmission Line construction. Total maximum vehicle round trips during this construction period would be approximately 161 per day, consisting of approximately 26 daily truck trips.

Table 3-11: Proposed Construction Equipment and Workforce

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Survey (05/01/2026 to 06/01/2026 – 26 Working Days – 4 Crew Members)				
Pickup - 1/2 Ton	395	Gas	2	4
LSPGC Collinsville Substation – Site Development (05/01/2026 to 08/01/2026 – 76 Working Days – 12 Crew Members)				
Truck - Water 4,000 Gallons	300	Diesel	4	10
Loader - 4-5 Yards	230	Diesel	2	10
Truck - Dump 10-12 Yards	415	Diesel	5	10
Motor Grader	250	Diesel	2	10
Scraper	410	Diesel	4	10
Vibratory Roller	157	Diesel	2	10
Pickup - 1/2 Ton	395	Gasoline	4	4
Generator – 25 kW	36	Diesel	2	10
Forklift - 15,000 Pounds	130	Diesel	4	6
Pickup - 1 Ton	410	Diesel	4	4
844 Loader	417	Diesel	1	6
Semi Truck	500	Diesel	2	6
LSPGC Collinsville Substation – Below-Grade Construction (07/14/2026 to 01/14/2027 – 152 Working Days – 40 Crew Members)				
Truck - Water 4,000 Gallons	300	Diesel	2	10
Excavator	108	Diesel	2	10
Forklift - 15,000 Reach	130	Diesel	3	8
Backhoe - 2X4	68	Diesel	2	6
Pickup - 1/2 Ton	395	Gasoline	4	2

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Pickup - 1 Ton	410	Diesel	4	2
Excavator - Mini	70	Diesel	1	5
Generator – 25 kW	36	Diesel	1	10
Truck - Concrete	425	Diesel	4	5
Loader - 4-5 Yards	230	Diesel	2	10
Pressure Digger - Lo-Drill (Tracked)	275	Diesel	1	8
Excavator	275	Diesel	1	10
Truck - Dump 10-12 Yards	415	Diesel	3	5
Tool - Van/Conex 20 Feet	0	NA	6	10
Trencher	75	Diesel	2	5
Skid steer loader	74	Diesel	2	10
LSPGC Collinsville Substation – Above-Grade Construction (01/02/2027 to 02/01/2028 – 333 Working Days – 30 Crew Members)				
Wire Trailer/Tensioner	175	Diesel	1	5
Wire Puller	175	Diesel	1	5
Crane - 200 Ton	275	Diesel	1	4
Pickup - 1/2 Ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
Welding Truck	395	Diesel	2	2
Generator – 25 kW	36	Diesel	2	10
Crane - 35 Ton (Manlift)	250	Diesel	2	5
Forklift - 10,000 Reach	130	Diesel	2	4
Forklift -15,000 Pounds	130	Diesel	1	4

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Loader - 4-5 Yards	74	Diesel	2	5
120-Foot Manlift	74	Diesel	2	4
PG&E 500 kV Interconnection – Structure Foundation Installation (06/01/2027 to 07/28/2027 – 48 Working Days – 15 Crew Members)				
Pressure Digger - Lo-Drill (Tracked)	275	Diesel	1	8
Truck - Concrete	425	Diesel	4	5
Pickup - 1 Ton	410	Diesel	4	2
Truck - Water 4,000 Gallons	300	Diesel	2	6
Truck - Dump 10-12 Yards	415	Diesel	2	10
Skid steer loader	74	Diesel	1	10
Forklift - 10,000 Reach	130	Diesel	2	8
Crane - 35 Ton (Manlift)	250	Diesel	1	4
Loader - 4-5 Yards	230	Diesel	1	8
Rough Terrain Crane	185	Diesel	1	2
Motor Grader	250	Diesel	1	10
D6 Type Dozer	250	Diesel	1	10
Excavator	250	Diesel	1	10
Vibratory Roller	125	Diesel	1	10
PG&E 500 kV Interconnection – Structure Installation (07/29/2027 to 08/21/2027 – 21 Working Days – 15 Crew Members)				
Crane - 35 Ton (Manlift)	250	Diesel	2	10
Helicopter - Heavy Duty	3,200	Jet	1	5
Jet Fuel Truck	300	Diesel	1	10
Pickup - 1/2 ton	395	Gasoline	2	2

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Forklift - 15,000 Pounds	130	Diesel	1	5
Pickup - 1 ton	410	Diesel	2	2
Crane - 200 Ton	275	Diesel	1	10
844 Loader	417	Diesel	1	8
Truck - Water 4,000 Gallons	300	Diesel	2	6
PG&E 500 kV Interconnection – Conductor Installation (08/22/2027 to 09/15/2027 – 20 Working Days – 30 Crew Members)				
Helicopter – Light Duty	700	Jet	1	10
Jet Fuel Truck	300	Diesel	1	10
Crane - 35 Ton (Manlift)	250	Diesel	6	10
Pickup - 1/2 ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
D8 Sag Dozer	200	Diesel	3	10
Wire Puller	175	Diesel	1	5
Truck - Water 4,000 Gallons	300	Diesel	2	6
Wire Trailer/Tensioner	175	Diesel	1	5
LSPGC 230 kV Overhead Segment – Access Road Construction (05/01/2026 to 05/19/2026 – 16 Working Days – 12 Crew Members)				
Pickup - 1/2 ton	395	Gasoline	2	4
Pickup - 1 ton	410	Diesel	2	4
Motor Grader	250	Diesel	1	10
Truck - Dump 10-12 Yards	415	Diesel	2	10
Skid steer loader	74	Diesel	1	10
Truck - Water 4,000 Gallons	300	Diesel	2	6

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
D6 Type Dozer	250	Diesel	1	10
Excavator	250	Diesel	1	10
LSPGC 230 kV Overhead Segment – Structure Foundation Installation (05/20/2027 to 06/15/2027 – 22 Working Days – 12 Crew Members)				
Pressure Digger - Lo-Drill (Tracked)	275	Diesel	1	8
Truck - Concrete	425	Diesel	4	5
Pickup - 1 Ton	410	Diesel	4	2
Truck - Water 4,000 Gallons	300	Diesel	2	6
Truck - Dump 10-12 Yards	415	Diesel	2	10
Skid steer loader	74	Diesel	1	10
Forklift - 10,000 Reach	130	Diesel	2	8
Crane - 35 Ton (Manlift)	250	Diesel	1	4
844 Loader	417	Diesel	1	8
Rough Terrain Crane	185	Diesel	1	2
LSPGC 230 kV Overhead Segment – Structure Installation (06/16/2027 to 07/15/2027 – 24 Working Days – 12 Crew Members)				
Crane - 35 Ton (Manlift)	250	Diesel	2	10
Pickup - 1/2 ton	395	Gasoline	2	2
Forklift - 15,000 Pounds	130	Diesel	1	5
Pickup - 1 Ton	410	Diesel	2	2
Crane - 200 Ton	275	Diesel	1	10
844 Loader	417	Diesel	1	8
Truck - Water 4,000 Gallons	300	Diesel	2	6

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
LSPGC 230 kV Overhead Segment – Conductor Installation (07/16/2027 to 08/15/2027 – 26 Working Days – 30 Crew Members)				
Helicopter – Light Duty	700	Jet	1	10
Jet Fuel Truck	300	Diesel	1	10
Crane - 35 Ton (Manlift)	250	Diesel	6	10
Pickup - 1/2 ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
D8 Sag Dozer	200	Diesel	3	10
Wire Puller	175	Diesel	1	5
Truck - Water 4,000 Gallons	300	Diesel	2	6
Wire Trailer/Tensioner	175	Diesel	1	5
Deck Barge	N/A	NA	1	2
Tug Boat	3300	Diesel	2	6
Support Vessel	200	Diesel	2	4
Deck Generator	170	Diesel	1	8
Anchor Winches	100	Diesel	4	4
LSPGC 230 kV Submarine Segment – Transition Structure Foundation Installation (06/15/2026 to 12/15/2026 – 150 Working Days – 20 Crew Members)[7]				
Spud Barge	N/A	Diesel	1	4
Hydraulic Unit	100	Diesel	1	2
Tug Boat	3300	Diesel	2	6

[7] The anticipated in-river work window would be between July 1 and November 30. Work outside this window would involve mobilization or demobilization and would not involve activities that would disturb the Delta substrate. As a result, work within this window would be consistent with the anticipated in-river work window.

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Deck Winch	225	Diesel	1	2
Truck - Concrete	425	Diesel	1	10
Concrete Pump	350	Diesel	1	3
Generator – 725 kW	985	Diesel	1	8
Deck Generator – 100 kW	130	Diesel	1	8
Support Vessel	200	Diesel	1	6
Air Compressor	50	Diesel	1	8
Vibratory Hammer/Pile Driver[8]	665	Diesel	1	8
Crane	180	Diesel	1	8
Engine Welder	25	Diesel	1	4
Support Vessel	200	Diesel	2	4
LSPGC 230 kV Submarine Segment – Transition Structure Installation (06/15/2027 to 07/15/2027 – 25 Working Days – 20 Crew Members)[7]				
Spud Barge	N/A	Diesel	1	4
Deck Barge	N/A	NA	1	2
Tug Boat	3300	Diesel	2	6
Barge Mounted Crane	250	Diesel	1	8
Support Vessel	200	Diesel	2	4
Deck Generator	170	Diesel	1	8
Air Compressor	50	Diesel	1	8

[8] A vibratory hammer and/or pile driver would be required for the installation of the in-river transition structure. Because both pieces of equipment would not be operated simultaneously, they have been combined in this table. The analysis presented in Chapter 5 – Environmental Impact Assessment assumes the worst case between the two pieces of equipment.

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Generator – 725 kW	985	Diesel	1	8
LSPGC 230 kV Submarine Segment – Submarine Cable Installation (06/20/2027 to 12/15/2027 – 147 Working Days – 25 Crew Members)[7]				
Survey Vessel	150	Diesel	2	12
Tug Boat	1200	Diesel	2	8
Crew Boat	1200	Diesel	1	12
Small Boats	250	Gasoline	2	12
Crane	180	Diesel	1	6
Anchor Winches	100	Diesel	4	4
Generators	150	Diesel	1	12
Misc. Deck Equipment	100	Diesel	1	12
Water Pumps	325	Diesel	2	12
Pull In Winch	100	Diesel	1	12
Dive Compressor	50	Diesel	2	12
Termination Genset	50	Diesel	1	12
Assist Barge: Crane	200	Diesel	1	12
LSPGC 230 kV Underground Segment – Southern Transition Approach Construction (06/15/2027 to 11/30/2027 – 138 Working Days – 25 Crew Members)[7]				
Onshore Excavator	600	Diesel	1	12
Onshore End Loader	250	Diesel	1	12
Onshore Crane	180	Diesel	1	12
Crane - 200 ton	275	Diesel	1	6
Onshore Vibratory Hammer	300	Diesel	1	12
Air Compressor	50	Diesel	1	12

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Truck - Dump 10-12 Yards	415	Diesel	4	6
Onshore Dewatering Equipment	50	Diesel	2	12
Onshore Trucks	300	Diesel	4	12
LSPGC 230 kV Underground Segment – Substation Getaways (06/01/2027 to 08/23/2027 – 70 Working Days – 20 Crew Members)				
Pickup - 1/2 Ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
Welding Truck	395	Diesel	2	2
Generator – 25 kW	36	Diesel	2	10
Crane - 35 Ton (Manlift)	250	Diesel	2	5
Forklift - 10,000 Reach	130	Diesel	2	4
Forklift -15,000 Pounds	130	Diesel	1	4
Loader - 4-5 Yards	74	Diesel	2	5
Wire Trailer/ Tensioner	175	Diesel	1	5
Wire Puller	175	Diesel	1	5
Skid steer loader	74	Diesel	2	10
Backhoe - 2X4	68	Diesel	2	6
PG&E 12 kV Distribution Line (06/01/2026 to 08/01/2026 – 51 Working Days – 10 Crew Members)				
Pickup - 1/2 ton	395	Gasoline	2	2
Wire Trailer/Tensioner	175	Diesel	1	5
Wire Puller	175	Diesel	1	5
Crane - 35 Ton (Manlift)	250	Diesel	2	10
Pickup - 1 Ton	410	Diesel	2	2

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Forklift - 15,000 Reach	130	Diesel	2	6
Pressure Digger - Lo-Drill (Tracked)	275	Diesel	1	8
Truck - Dump 10-12 Yards	415	Diesel	2	10
Skid steer loader	74	Diesel	2	10
Truck - Concrete	425	Diesel	4	5
Backhoe - 2X4	68	Diesel	1	8
LSPGC Telecommunications Line (06/01/2027 to 10/01/2027 – 103 Working Days – 12 Crew Members)				
Crane - 35 Ton (Manlift)	250	Diesel	2	10
Forklift - 10,000 Reach	130	Diesel	1	5
Excavator - Mini	70	Diesel	2	5
Truck - Dump 10-12 Yards	415	Diesel	3	5
Skid steer loader	74	Diesel	2	10
Trencher	75	Diesel	1	10
Pickup - 1 Ton	410	Diesel	3	2
Truck - Concrete	425	Diesel	2	5
Wire Trailer/ Tensioner	175	Diesel	1	5
Wire Puller	175	Diesel	1	5
PG&E Substation Modifications (06/01/2026 to 10/01/2026) – 102 Working Days – 15 Crew Members)				
Pickup - 1/2 Ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
Welding Truck	395	Diesel	2	5
Crane - 35 Ton (Manlift)	250	Diesel	2	10

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Forklift -15,000 Pounds	130	Diesel	1	4
Manlift – 40 Feet	49	Diesel	3	10
120-Foot Manlift	74	Diesel	2	4
Testing and Commissioning (11/01/2027 to 06/01/2028 – 174 Working Days – 24 Crew Members)				
Pickup - 1/2 Ton	395	Gasoline	4	2
Pickup - 1 Ton	410	Diesel	4	2
Manlift – 40 Feet	49	Diesel	3	10
Truck - Water 4,000 Gallons	300	Diesel	1	10
Tool - Van/Conex 20 Feet	0	NA	6	10
Deck Barge	N/A	NA	1	2
Tug Boat	3300	Diesel	2	6
Support Vessel	200	Diesel	2	4
Deck Generator	170	Diesel	1	8
Crane - 35 Ton (Manlift)	250	Diesel	2	10
Site and ROW Restoration (02/01/2028 to 07/17/2028 – 140 Working Days – 12 Crew Members)				
Pickup - 1 Ton	410	Diesel	4	2
Motor Grader	250	Diesel	2	10
Backhoe - 2X4	68	Diesel	2	8
Truck - Water 4,000 Gallons	300	Diesel	2	10
Skid steer loader	74	Diesel	1	10
Excavator	250	Diesel	1	10
D6 Type Dozer	250	Diesel	1	10

Equipment Name	Anticipated Engine Output (horsepower)	Anticipated Fuel Type	Approximate Quantity	Approximate Daily Use (hours)
Pickup - 1/2 Ton	395	Gasoline	4	2
Truck - Dump 10-12 Yards	415	Diesel	2	10

Note: Each piece of equipment is conservatively assumed to operate for each day of construction.

Temporary lane closures may be required during construction of the facilities. The temporary closures would be coordinated with Solano and Contra Costa counties, the City of Pittsburg, and emergency service providers through the encroachment permit process; and one or more traffic control plans would be implemented as necessary. Implementation of the traffic control plans would ensure impacts to traffic in the Proposed Project area are minimized during construction.

3.6.4 Construction Schedule

Construction is anticipated to begin in early 2026 and would take approximately 24 months to complete. The Proposed Project includes construction occurring on land and in water. The construction of in-water transition structures is anticipated to take approximately 4 months, and installation of the submarine cables is anticipated to take approximately 7 months. In-water work would be restricted to between July 1 and November 30 to protect listed fish species and would require approximately 2 years to complete within the work windows. Land-based construction would occur year-round or as authorized by permits and authorizations. Per the CAISO technical specifications, the Proposed Project is required to be energized by June 1, 2028. The complete construction schedule, outlined by task, is summarized in Table 3-12: Proposed Construction Schedule.

Table 3-12: Proposed Construction Schedule

Construction Phase	Start Date	End Date	Approximate Number of Active Workdays*
Survey	May 2026	June 2026	26
LSPGC Collinsville Substation	May 2026	February 2028	561
PG&E 500 kV Interconnection**	June 2027	September 2027	89
LSPGC 230 kV Overhead Segment	May 2027	August 2027	72
LSPGC 230 kV In-River Transition Structure	June 2026	July 2027	175
LSPGC 230 kV Submarine Segment	June 2027	December 2027	147
LSPGC 230 kV Underground Segment	June 2027	November 2027	138
PG&E Substation Modifications**	June 2026	October 2026	102
PG&E 12 kV Distribution Line**	June 2026	August 2026	51
LSPGC Telecommunications Line	June 2027	October 2027	103
Testing and Commissioning	November 2027	June 2028	174
Site and ROW Restoration	February 2028	July 2028	140

Notes:
* Active workdays exclude all Sundays and federal holidays between the start and end date for each construction phase.
** Indicates PG&E work activities that are included in the overall construction schedule as tentative because LSPGC is not responsible for that work.

3.6.5 Work Schedule

Terrestrial construction activities on the Proposed Project would generally be scheduled to occur during daylight hours of 7:00 a.m. to 7:00 p.m., 6 days per week (Monday through Saturday).

Construction is not anticipated on federal holidays. Night work is not anticipated to be necessary, but could be required in limited circumstances, such as clearance restrictions. Terrestrial construction activities could infrequently be scheduled outside of these hours to avoid or reduce schedule delays, complete construction activities (e.g., continuous concrete pours), accommodate the schedule for system outages, or address emergencies. Construction of the proposed 230 kV Submarine Segment would typically occur 24 hours per day, 7 days per week until complete. While work would occur on an almost continuous basis at the proposed LSPGC Collinsville Substation site and along the proposed LSPGC 230 kV Submarine Segment, work at the individual structure locations would be shorter in duration and more periodic in nature.

3.7 POST-CONSTRUCTION

3.7.1 Configuring (Commissioning) and Testing

Configuring and testing would begin with pre-commissioning activities that include equipment fit-up inspections and simple electrical tests to ensure the equipment is connected properly. After pre-commissioning, the first commissioning activities would include transformer energization followed by auxiliary electrical tests. Lastly, the power electronic devices and protection/control system would be tested and programmed per the Proposed Project requirements. After this, the Proposed Project would be ready for energization.

Configuring and testing would require the use of pickup trucks, forklifts, and manlifts and would require approximately 24 construction personnel to be on site. Configuring and testing the Proposed Project would take approximately 7 months between November 2027 and June 2028 for a total duration of approximately 174 days, at which point the Proposed Project would be fully functional and ready for commercial operation.

3.7.2 Landscaping

The proposed LSPGC Collinsville Substation is located within a grazing area, approximately 1.5 miles from PG&E's existing 500 kV transmission lines, with the closest residence located approximately 3,600 feet from the facility. Therefore, LSPGC is not proposing any landscaping at the proposed LSPGC Collinsville Substation.

3.7.3 Demobilization and Site Restoration

3.7.3.1 Demobilization

Following construction, the process of demobilization would begin. First, all equipment not needed for the remaining testing and revegetation would be removed. Next, all temporarily disturbed work areas would be restored to their pre-construction conditions.

3.7.3.2 Site Restoration

All areas temporarily disturbed by Proposed Project activities would be restored to approximate pre-construction conditions or as otherwise provided by new or existing easements. All areas would be carefully assessed to be sure all residual construction debris and waste are removed and transported off site to an approved disposal facility. Any types of Proposed Project waste materials that are routinely recycled would be recycled in an appropriate fashion at an approved disposal facility. LSPGC and PG&E would conduct a final inspection to ensure that cleanup

activities are successfully completed as required. Areas that are disturbed by grading, auguring, or equipment movement would be restored to their original contours and drainage patterns unless otherwise directed by the applicable landowner. Work areas would be decompacted, and salvaged topsoil materials would be respread following recontouring to aid in restoration of temporarily disturbed areas. Revegetation activities would be conducted in accordance with the Proposed Project SWPPP and APMs recommended herein. Restoration could include recontouring, reseeding, and planting replacement vegetation, as appropriate. Additional restoration opportunities could include preparing the site for future utility uses. Erosion control measures may be required and would also be implemented in accordance with the Proposed Project SWPPP and APMs. Gravel placed to facilitate construction may be left in place if requested by applicable landowners.

3.8 OPERATION AND MAINTENANCE

The Proposed Project would be operated and maintained to meet all GO 95 requirements, including minimum vegetation and equipment clearances, in addition to the vegetation clearance requirements in California PRC Section 4292 and Title 14, Section 1254 of the California CCR.

3.8.1 Regulations and Standards

O&M of the Proposed Project would be conducted in accordance with all applicable Federal Energy Regulatory Commission, NERC, CPUC, or CAISO requirements. Any O&M work (e.g., high-voltage capital repair or replacement) would also be conducted in accordance with NESC, National Electrical Code, Cal/OSHA and other applicable regulations and standards. Both LSPGC and PG&E have Wildfire Management Plans, which are provided in Attachment 3-B: Wildfire Mitigation Plans.

3.8.2 System Controls and Operation Staff

3.8.2.1 LSPGC Facilities

The Proposed Project would be unmanned during O&M. The proposed LSPGC Collinsville Substation would be operated by LSPGC's 24-hour control center in Austin, Texas. Day-to-day management of the substation would be conducted by LSPGC's asset management teams based in Texas and Missouri. The substation would also be monitored by CAISO's control center in Folsom, California, and CAISO would have operational control of the facility with authority to direct LSPGC's control center.

The Proposed Project facilities would be incorporated into LSPGC's existing programs with existing equipment, experienced staff, and trusted contractors to provide operational and cost efficiencies with reduced risks. LSPGC's local maintenance/technical staff and existing LSPGC staff and outside resources would respond to maintenance issues and emergency situations. LSPGC currently has eight staff in its transmission maintenance group with an average experience of over 15 years. In addition, locally based field employees would support maintenance of the facilities.

3.8.2.2 PG&E Facilities

PG&E's facilities would continue to be unmanned during operations and monitored remotely. The Proposed Project facilities would be incorporated into PG&E's existing programs with

existing equipment, experienced staff, and trusted contractors. PG&E's local maintenance/technical staff and outside resources would respond to maintenance issues and emergency situations.

3.8.3 Inspection Programs for Substations

LSPGC would regularly inspect, maintain, and repair the Proposed Project substation facilities and access roads following completion of Proposed Project construction. PG&E would continue its regular inspections at its existing substations. Typical O&M activities would involve routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service. In general, monthly or quarterly inspections would be performed on the proposed LSPGC Collinsville Substation, as well as PG&E's existing substations to inspect each required piece of equipment in accordance with manufacturer recommendations. These inspections would be performed without taking the substation out of service. LSPGC and PG&E would normally perform routine ground inspections of substation facilities monthly using the access roads that were constructed for this purpose.

3.8.4 Maintenance Programs

3.8.4.1 LSPGC Facilities

3.8.4.1.1 Proposed LSPGC Collinsville Substation

It is anticipated that equipment located at the proposed LSPGC Collinsville Substation facility would be taken out of service periodically to perform more extensive checks and maintenance on the main components of the facility. Due to the diversity of equipment and the individual system components, a small, specialized team would be utilized to perform more extensive maintenance activities.

3.8.4.1.2 Proposed LSPGC 230 kV Transmission Line

Routine maintenance of the overhead and underground segments of the proposed LSPGC 230 kV Transmission Line is expected to require approximately one trip per year by crews composed of one to four people. Annual comprehensive checks and maintenance would be performed by LSPGC maintenance personnel or qualified contractors. Should structures require direct access during maintenance, overland access consistent with easement access rights and in coordination with the landowner would be utilized. The proposed LSPGC 230 kV Submarine Segment is not anticipated to require any regular maintenance. Should any portion of the cable become defective, a replacement segment of cable would be spliced to repair it and the defective portion would be abandoned in place. Any required submarine cable or cable segment replacement would involve similar methods and impacts as those associated with initial construction.

3.8.4.2 Proposed PG&E Facilities

The proposed PG&E 500 kV Interconnection would be inspected annually by PG&E routine patrols, either from the ground or by a drone/helicopter. The inspection process would involve routine patrols from existing local staff, either on the ground or by helicopter, tasked with patrolling the transmission lines. Normal inspection and patrols would typically be completed in a pickup truck and/or an off-road utility vehicle. While not expected, if vehicle access is not

available, an inspector would complete portions of the inspection on foot. Climbing inspections would be performed on an as-needed basis, based on specific identified conditions, and in compliance with CAISO guidelines and regulations.

3.8.5 Vegetation Management Programs

In accordance with fire break clearance requirements in GO 95, PRC Section 4292 and Title 14, Section 1254 of the CCR, LSPGC and PG&E would trim or remove flammable vegetation in the area surrounding the Proposed Project and all other safety hazards. Proposed Project-specific vegetation clearances would be determined by the CPUC. One-person crews typically conduct this work using mechanical equipment consisting of weed trimmers, rakes, shovels, and leaf blowers. State-approved herbicides would also be applied to treat bare-ground areas, as needed, during O&M activities. Pesticides would not be used during O&M activities. The proposed LSPGC 230 kV Transmission Line and Collinsville Substation would be inspected on an annual basis to determine if vegetation trimming or clearing is required. LSPGC and PG&E vegetation management activities would ensure a continuous defensible area around the substation and within transmission line ROW.

3.9 DECOMMISSIONING

Prior to removal or abandonment of any facilities, LSPGC would prepare a removal and restoration plan. The removal and restoration plan would address the removal of the proposed LSPGC Collinsville Substation and proposed LSPGC 230 kV Transmission Line from the permitted area; any requirements for restoration and revegetation; and the potential preparation of the property for future utility uses. The removal and restoration plan would then be approved by the CPUC prior to implementation. PG&E is not subject to decommissioning and would retain its facilities as long as they are useful.

3.10 ANTICIPATED PERMITS AND APPROVALS

3.10.1 Anticipated Permits and Approvals

The CPUC is the lead California agency for this Proposed Project. LSPGC would comply with CPUC GO 131-D Section III-B, which contains the permitting requirements for construction of the Proposed Project (CPUC 1995). This Proponent's Environmental Assessment was prepared as part of an application to obtain a CPCN for the Proposed Project. Although PG&E is not an applicant in LS Power's application for a CPCN, PG&E's scope of work is needed to interconnect the Proposed Project to PG&E's electrical grid. PG&E's substation modification and transmission line extension would be included in the CPUC's CEQA analysis. However, PG&E would likely utilize the adopted CEQA document to separately comply with the CPUC's permitting requirements under GO 131-D.

In addition to the CPCN, LSPGC (and PG&E) may be required to obtain several other permits from federal, state, and local agencies. Table 3-13: Permitting Requirements and Processes lists the permits, approvals, and licenses that LSPGC anticipates obtaining from jurisdictional agencies to construct the Proposed Project.

Table 3-13: Permitting Requirements and Processes

Agency	District/Office Representative Contact Information	Permit/Approval	Trigger	Status	Date Filed or Planned to be Filed
Federal					
FAA	Obstruction Evaluation Group California – Northern Tameria Burch, Technician tameria.burch@faa.gov (424) 405-7641 Justin Hetland, Specialist justin.hetland@faa.gov (847) 294-8084	Determination of No Hazard	This applies to potential obstruction of air space.	On hold until need for permit is evaluated	May 2025
State Historic Preservation Office	California Office of Historic Preservation Sacramento, CA 95816 info.calshpo@parks.ca.gov Monica Newman, Executive Secretary monica.newman@parks.ca.gov (916) 445-7000	Section 106 Consultation	This applies to ground-disturbing activities in an area with the potential for cultural resources.	On hold until closer to construction	March 2025
National Oceanic and Atmospheric Administration National Marine Fisheries Service – West Coast Region	California Central Valley Office (916) 930-5648 Cathy Marcinkevage, Assistant Regional Administrator cathy.marcinkevage@noaa.gov	Section 7 Consultation	This applies to activities occurring within waters of the U.S. that have the potential to impact species protected by the federal Endangered Species Act (FESA) or Essential Fish Habitat protected under the Magnuson-Stevens Fishery Conservation and Management Act.	On hold until closer to construction	February 2025

Agency	District/Office Representative Contact Information	Permit/Approval	Trigger	Status	Date Filed or Planned to be Filed
U.S. Fish and Wildlife Service (USFWS) – Region 8	San Francisco Bay-Delta Fish and Wildlife Office Tamara N. Ward, Bay-Delta Assistant Field Supervisor for External Affairs tamara_ward@fws.gov	Section 7 Consultation	This applies to activities occurring within critical habitat or with the potential to impact species protected by the FESA.	On hold until closer to construction	February 2025
USACE – Sacramento and San Francisco Districts	San Francisco Regulatory District cespn-pa2@usace.army.mil (415) 503-6958 Sacramento Regulatory District spk-pao@usace.army.mil (916) 557-5100	Section 10 Permit	This applies to construction within navigable waters of the U.S.	On hold until closer to construction	March 2025
		Section 404 Permit	This applies to discharge or placement of fill within waters of the U.S.	On hold until closer to construction	March 2025
		Section 408 Permit	This applies to permanent or temporary alteration or use of a USACE Civil Works project.	On hold until closer to construction	March 2025
State					
California Department of Fish and Wildlife (CDFW) – Bay Delta Region	Bay Delta Region askbdr@wildlife.ca.gov Regulations and Enforcement Information (707) 944-5549	Section 2081 Incidental Take Permit	This applies to potential take of California Endangered Species Act-listed species (Delta smelt and longfin smelt).	On hold until need for permit is evaluated	March 2025
		Section 1600 Lake and Streambed Alteration Agreement	This applies to alteration of a streambed.	On hold until closer to construction	March 2025

Agency	District/Office Representative Contact Information	Permit/Approval	Trigger	Status	Date Filed or Planned to be Filed
CSLC	Land Management Division (916) 574-1940	Lease Agreement	This applies to activities proposed on tidelands and submerged lands owned by the State of California.	On hold until closer to construction	February 2025
		Encumbrance Agreement	This applies to encumbering on an existing CSLC lease agreement.	On hold until closer to construction	February 2025
CPUC	Public Advisor's Office public.advisor@cpuc.ca.gov (415) 703-2074	CPCN	This applies to construction of an electric transmission line designed for operation at 200 kV or higher.	Application in progress	March 2024
		Public Utilities Code Section 851 Authorization	This applies to easements on the proposed LSPGC Manning Substation property between PG&E and LSPGC.	Application in progress	March 2024
San Francisco Bay Conservation and Development Commission	info@bcdc.ca.gov (415) 352-3600	Major Permit	This applies to work that is more extensive than a minor repair or improvement occurring within the Primary Management Area of the Suisun Marsh.	On hold until closer to construction	February 2025
State Water Resources Control Board	San Francisco Bay Region (510) 622-2300 Central Valley Region (916) 464-3291	NPDES Construction General Permit	This applies to construction activities resulting in the disturbance of 1 or more acre of land.	On hold until closer to construction	April 2026
		Section 401 Water Quality Certification	This applies to activities that require a federal authorization, are located in the jurisdiction of more than one Regional Water Quality Control Board, and may result in impacts to waters of the U.S.	Application in progress	March 2025

Agency	District/Office Representative Contact Information	Permit/Approval	Trigger	Status	Date Filed or Planned to be Filed
Local					
Solano County	Public Works pwpermits@solanocounty.com (707) 784-6060	Encroachment Permit	This applies to construction work within the Solano County ROW.	On hold until closer to construction	August 2025
	Public Works Engineering Division Grading@solanocounty.com (707) 784-6765	Grading Permit	This applies to construction activities requiring grading in Solano County.	On hold until closer to construction	August 2025
Contra Costa County	Public Works pw.permits@pw.cccounty.us (925) 313-2000	Encroachment Permit	This applies to construction work within the Contra Costa County ROW.	On hold until closer to construction	August 2025
City of Pittsburg	Engineering Division engfrontdesk@pittsburgca.gov	Encroachment Permit	This applies to construction work within the City of Pittsburg ROW.	On hold until closer to construction	August 2025

3.10.2 Rights-of-Way or Easement Applications

LSPGC would obtain rights for an approximately 32-acre portion of a parcel from an existing private landowner. In addition to the land rights for the substation, the Proposed Project would require new easements for the new transmission lines and interconnections that are outside of existing ROWs.

In addition, PG&E would obtain rights for the minor section of the proposed PG&E 500 kV Interconnection that would extend onto the proposed LSPGC Collinsville Substation property. These new easements to be secured are also summarized in Table 3-14: Permanent New Land and Right-of-Way Requirements.

Table 3-14: Permanent New Land and Right-of-Way Requirements

Proposed Project Component	Approximate Length (miles)	Typical Approximate Width* (feet)	Approximate Area (acres)
LSPGC Collinsville Substation	--	--	32.0
LSPGC 230 kV Overhead Segment	0.9	120	11.6
	< 0.1	230	0.7
LSPGC 230 kV Submarine Segment	4.5	130 to 480	201.8
LSPGC 230 kV Underground Segment	0.3	10	0.4
LSPGC Telecommunications Line	1.2	5	0.7
PG&E 500 kV Interconnection	3.0	150 to 350	63.6
Distribution Line	0.9	20	2.5

* Note: Typical widths have been provided; however, ROW would vary along each alignment, as appropriate. Final ROW widths would be determined during final engineering.

Because PG&E and LSPGC are subject to the jurisdiction of the CPUC, they must also comply with Public Utilities Code Section 851. Among other things, this code provision requires these utilities to obtain CPUC approval when they convey utility property, including on utility-owned property, to third parties. Obtaining CPUC approval for a Section 851 application requires compliance with the California Environmental Quality Act. LSPGC would file a Section 851 application concurrently with the Proposed Project's CPCN application; PG&E would also seek approval under Section 851 if PG&E conveys utility property rights to a third party.

3.11 APPLICANT-PROPOSED MEASURES

LSPGC would be responsible for overseeing the assembly of construction and environmental teams that would implement and evaluate the Proposed Project APMs. PG&E is not an applicant in this CPCN application proceeding and would not be subject to these APMs. However, PG&E would comply with a separate list of CMs.

LSPGC maintains an environmental compliance management program to allow for implementation of the APMs to be monitored, documented, and enforced during each Proposed Project phase, as appropriate. All those contracted by LSPGC to perform this work would be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects.

Implementation of the proposed APMs would be the responsibility of the environmental compliance team. The team would include an environmental project manager, resource specialists, and environmental monitors. All APMs would be implemented consistent with applicable federal, state, and local regulations. The environmental compliance team would be responsible for the inspection, documentation, and reporting of LSPGC compliance with all APMs as proposed. As needed, environmental specialists would be retained to verify that all APMs are properly implemented during the construction phase.

The APMs are described in Table 3-15: Applicant-Proposed Measures and are described in detail in Chapter 5 – Environmental Impact Assessment, which includes an analysis of why each APM was selected and how it would reduce and/or minimize potential impacts. In addition, all applicable CPUC Draft Environmental Measures were considered and included, as appropriate, as APMs to further reduce potential impacts.

If conditions occur where construction may potentially adversely affect a known or previously unknown environmentally sensitive resource, or if construction activities significantly deviate from Proposed Project requirements, LSPGC monitors and/or contract administrators would have the authority to halt construction activities, if needed, until an alternative method or approach can be identified. Any concerns that arise during implementation of the APMs would be communicated to the appropriate authority to determine if corrective action is required, or the concerns would be addressed on site, as applicable. As the proposed APMs are implemented, environmental monitors would be responsible for the review and documentation of such activities. Field notes and digital photographs would be used to document and describe the status of APMs as necessary.

3.12 PG&E CONSTRUCTION MEASURES

PG&E would comply with the CMs described in Table 3-16: PG&E Construction Measures. PG&E would be responsible for overseeing the assembly of construction and environmental teams that would implement and evaluate the CMs. As discussed throughout the resource impact analyses in Chapter 5 – Environmental Impact Assessment, not all of the CMs listed in Table 3-16: PG&E Construction Measures would be required in order to reduce impacts of the PG&E Proposed Project components to less-than-significant levels.

Table 3-15: Applicant-Proposed Measures

APM Number	Description
AES-1	**Staging Area Maintenance and Restoration.** All Proposed Project sites would be maintained in a clean and orderly state. Temporary nighttime lighting would be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of Proposed Project construction, staging and temporary work areas would be returned to pre-Proposed Project conditions, including regrading of the site and revegetation or repaving of disturbed areas to match pre-existing contours and conditions.
AG-1	**Landowner Coordination.** LSPGC would coordinate with landowners prior to construction and during restoration efforts. Measures to be implemented may include, but are not limited to, the following: • Notice would be provided to landowners outlining construction activities and restoration efforts. • Areas disturbed by construction of the Proposed Project would be restored in accordance with lease agreements, applicable O&M standards, and environmental permit requirements. • In areas containing permanent crops (e.g., grapevines and orchard crops) that must be removed to gain access to pole sites for construction purposes, LSPGC would provide compensation to the farmer and/or landowner in coordination with the landowner.
AIR-1	**Tier 4 Construction Equipment.** Construction equipment with a rating between 100 and 750 horsepower (hp) would be required to use engines compliant with EPA Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.
AIR-2	**Dust Control.** Measures to control fugitive dust emissions would be implemented during construction. These measures would be included in a Fugitive Dust Control Plan that would be prepared in accordance with Bay Area Air Quality Management District (BAAQMD) and Sacramento Metropolitan Air Quality Management District requirements. The measures would be implemented as needed to control dust emissions. These measures would include, but may not be limited to, the following: • Surfaces disturbed by construction activities would be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance. • Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles would be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, or would be covered. • Vehicles hauling soil and other loose material would be covered. • Vehicles would adhere to a speed limit of 15 mph on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas. • Visible mud or dirt trackout onto an adjacent public road would be removed at least once per day using wet power vacuum street sweepers.

APM Number	Description
	• Excavation, grading, and/or demolition activities would be suspended when average wind speeds exceed 20 mph and dust cannot be suppressed in accordance with the requirements of BAAQMD Rule 6-1. • Unpaved dirt roads providing access to sites located 100 feet or farther from a paved road would be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel. • Publicly visible signs would be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number would also be visible to ensure compliance with applicable regulations.
BIO-1	**Avoid Environmentally Sensitive Areas.** Biological field surveys (i.e., surveys to identify vegetation communities and land cover, aquatic features, and potential terrestrial habitat for special-status plant and wildlife species, as well as fully floristic botanical surveys) would be performed for any portion of the Proposed Project area not yet surveyed (e.g., areas that did not have landowner access, new or modified staging areas, pull sites, or other work areas). Sensitive biological resources or areas discovered during surveys would be subject to a buffer from construction activities in accordance with the applicable Proposed Project APMs. The findings of all biological field surveys on portions of the Proposed Project area not yet surveyed would be provided to the CPUC prior to construction commencing within those areas.
BIO-2	**Develop and Implement Restoration Plan.** A Proposed Project-specific restoration plan would be prepared for the Proposed Project and submitted to the CPUC for approval prior to the start of construction activities. The restoration plan would include procedures for restoration activities, including plant species to be planted, procedures to reduce weed encroachment, and expected timeframes and success criteria for restoration and revegetation. Revegetation activities would be conducted in accordance with the Proposed Project SWPPPs and restoration plan.
BIO-3	**Worker's Environmental Awareness Program (WEAP) Training.** All workers on the Proposed Project site would be required to attend a WEAP training. Training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. Additionally, the WEAP would train all construction personnel on hazardous materials management, hazardous wastes and stained or odiferous soils identification, and applicable regulations. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: • Environmentally sensitive area boundaries, • Housekeeping (i.e., trash and equipment cleaning), • Safety, • Work stoppage, • Communication protocol, and • Consequences of non-compliance.

APM Number	Description
BIO-4	**Delineation of Sensitive Resources.** All sensitive biological areas (e.g., aquatic resources and special-status plants) within Proposed Project work areas would be clearly marked prior to construction to restrict construction activities and equipment from entering these areas. Signage would be placed along regular intervals of this delineation prohibiting entry by Proposed Project personnel and identifying the delineated area as a sensitive resource. A buffer of at least 5 feet from all construction activities would be established around these areas. These buffers would be inspected regularly to ensure that they remain in place.
BIO-5	**Pre-Construction Plant Surveys.** Prior to initial vegetation clearing and ground-disturbing activities, a qualified biologist would conduct pre-construction surveys during the appropriate blooming period for Welsh mudwort, Delta tule pea, Mason's lilaeopsis, Bolander's water hemlock, and Suisun marsh aster. Surveys would occur within Proposed Project work areas with suitable habitat for these plants. In the event of the discovery of a previously unknown special-status plant, the area would be marked as a sensitive area and would be avoided to the maximum extent practicable. If avoidance of species listed under the FESA or CESA is not possible, the USFWS and/or CDFW would be consulted, as appropriate.
BIO-6	**Qualified Biologist Monitoring.** Any construction activities within suitable special-status species habitat that may impact sensitive biological resources would be monitored by a qualified biologist. The monitor/inspector would have the authority to stop work activities upon the discovery of sensitive biological resources and allow construction to proceed after the identification and implementation of steps required to avoid or minimize impacts to sensitive resources.
BIO-7	**Vehicle Cleaning.** All construction equipment and vehicles that would travel outside of approved access roads/designated parking areas (e.g., staging yards) would be cleaned prior to their initial arrival on the Proposed Project site to avoid spread of noxious weeds and non-native invasive plant species.
BIO-8	**Vehicle Travel.** Vehicles would adhere to a speed limit of 15 mph on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas. In addition, construction employees would be required to stay on established and clearly marked and existing roads and within the limits of disturbance (except when not feasible due to physical or safety constraints) and would be advised that care should be exercised when commuting to and from the Proposed Project area to reduce accidents and animal road mortality.
BIO-9	**Trapped Animal Prevention.** All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species.
BIO-10	**Delineation of Work Areas.** All work areas within the Proposed Project area would be clearly delineated prior to construction commencing with fencing, staking, or flags. Construction activities would be restricted to delineated work areas and all delineation would be maintained in working order until completion of construction.

APM Number	Description
BIO-11	**Pre-Construction Wildlife Surveys.** Prior to initial vegetation clearance and ground-disturbing activities within suitable habitat for special-status wildlife, a biologist would conduct pre-construction surveys within Proposed Project work areas for special-status wildlife. Within wetland habitats or other areas suitable for northwestern pond turtle occupation, a qualified biologist would examine potential basking sites for adult turtles, as well as potential nest sites in sandy or sparsely vegetated substrates; turtle nests would be flagged for avoidance. In pickleweed habitats or other areas suitable for salt marsh harvest mouse occupation, a qualified biologist would carefully inspect vegetation prior to vegetation clearance and ground disturbing activities to ensure no salt marsh harvest mouse individuals or nests are present and to encourage mice residing within or adjacent to the Proposed Project work areas to move into adjacent habitats prior to impacts commencing each day. The monitor/inspector would have the authority to stop work activities upon the discovery of sensitive biological resources and allow construction to proceed after the identification and implementation of steps required to avoid or minimize impacts to sensitive resources.
BIO-12	**Project Lighting.** The use of outdoor lighting during construction would be minimized whenever practicable. Photocell-controlled lighting (i.e., motion detection) would be provided at a level sufficient to provide safe entry and exit to the proposed LSPGC Collinsville Substation and control enclosures. All lighting would be selectively placed, shielded, and directed downward and away from sensitive habitat and resources to the maximum extent practicable.
BIO-13	**Nesting Bird Avoidance.** If feasible, construction and vegetation trimming/removal would be avoided during the migratory bird nesting or breeding season (i.e., February 15 to August 31). When it is not feasible to avoid construction during the nesting or breeding season, a survey would be performed in the area where the work is to occur to determine the presence or absence of nesting birds. If an active nest (i.e., containing eggs or young) is identified, a suitable construction buffer (which would differ based on species and location of nest) would be implemented to ensure that the nesting or breeding activities are not substantially adversely affected. If the nesting or breeding activities are being conducted by a federal or state-listed species, LSPGC and/or PG&E would consult with the USFWS and CDFW as necessary. Monitoring of the nest would continue until the birds fledge or construction is no longer occurring on the site.
BIO-14	**Burrowing Owl.** Prior to the initiation of construction activities occurring in suitable grassland habitat, a qualified biologist would conduct up to four protocol-level surveys for burrowing owl in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). A take avoidance survey for active burrows would also be conducted no more than 30 days prior and no less than 14 days prior to the start of construction in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If burrowing owls are present at the site, a qualified biologist would establish an exclusion zone in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If a qualified biologist experienced with burrowing owls determines the relocation of owls is necessary, a passive relocation effort may be conducted in coordination with the CDFW as appropriate and in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

APM Number	Description
BIO-15	**Wetland Birds.** To the greatest extent feasible, work within wetland habitats suitable for California black rail or Ridgway's rail occupation would be limited to a work window of September 1 through January 15, which is outside of the breeding season for these species. If work in suitable wetland habitats is not feasible during this work window, then prior to the initiation of activities, a qualified biologist would conduct protocol-level surveys for Ridgway's rail (USFWS 2015) and standardized tape call-back/response protocols for California black rail following a similar protocol (Hildie et al. 2005). If either species is found to be absent following these surveys, then work may proceed within wetland habitats outside of the prescribed work window.
BIO-16	**Vegetation and Tree Trimming/Removal.** Vegetation and tree trimming/removal would be limited to the minimum area necessary to allow construction to proceed and to provide adequate vegetation removal to meet initial electrical clearance and wildfire prevention requirements. Where feasible, shrubs and other woody vegetation would be cut at the base to preserve the existing root system and facilitate resprouting following the conclusion of Proposed Project construction.
BIO-17	**Raptor Nests.** If a raptor nest or breeding burrow is observed during pre-construction surveys, a qualified biologist would determine if it is active. If the nest is determined to be active, the biological monitor would monitor the nest to ensure that nesting or breeding activities are not substantially adversely affected. If the biological monitor determines that activities associated with the Proposed Project are disturbing or disrupting nesting or breeding activities, the biological monitor would make recommendations to reduce noise or disturbance in the vicinity of the nest, such as temporarily suspending work in the area. If the nest is determined to be inactive, the nest would be removed under direct supervision of the qualified biologist.
BIO-18	**In-Water Work Window.** To minimize potential impacts to fish during in-water work (i.e., disturbance to the Delta substrate or placement of construction materials below the waterline) both from general disturbance or from the potential introduction of deleterious materials that may disrupt both migratory events and cause impacts to species during key times of year when more sensitive life stages (i.e., eggs and fry) are present, a work window of July 1 to November 30 would be enacted.
BIO-19	**In-Water Pile Driving.** The following measures would be implemented during the driving of all piles: • In-water work would be limited to the July 1 to November 30 work window as stated in APM BIO-18. • To the greatest extent feasible, the driving of steel piles would be conducted with a vibratory hammer. • When installation with an impact hammer is required for steel pipe piles driven in water, the following additional measures would be employed: – Use of a soft start (i.e., gradually increasing energy and frequency) at the start of driving, or after a cessation of driving for more than 1 hour. – Use a bubble curtain during the pile driving process. Alternatively, underwater sound monitoring could be performed during pile driving activities for a minimum of 1 day for each pile size and type utilized during construction to verify sound levels would not exceed a peak of 206 decibels (dB) or cumulative sound exposure level of 183 dB as a substitute for a bubble curtain. If monitoring indicates that these noise levels would be exceeded, additional noise reduction measures (e.g., isolation of the piles via a temporary cofferdam or limiting pile strikes) would be implemented to reduce noise levels.

APM Number	Description
BIO-20	**Intake Screening.** To minimize the potential for fish to be entrained by the Proposed Project, any pumps or water intakes used by the Proposed Project would be screened in accordance with the following CDFW and NMFS screening requirements for water diversions within the Delta (CDFG 2000, NMFS 1997). If any variation from these criteria is necessary, the Proponent would consult with the agency responsible for the species for recommendations to protect fish.
BIO-21	**Invasive Species Management for In-Water Work.** To help reduce the potential effects of invasive species from construction of the Proposed Project the following measures would be implemented: • Aquatic vessels brought to the study area from ports outside of San Francisco Bay and/or the Delta for aquatic construction would follow all maritime regulations relating to the exchange of ballast water to prevent the spread of invasive species from outside ports. • Any in-water fill materials (e.g., piles) would be new and not salvaged from areas outside of San Francisco Bay. • Any pumps or in-water equipment that may be needed during construction would be cleaned and dried for at least 72 hours prior to first being used on the Proposed Project. Continual presence on site would not require drying between uses.
BIO-22	**Aquatic Sediment Screening and Testing.** Prior to installation of cables, screening of the cable alignment based on available background resources (e.g., EnviroStor) would be conducted to determine if there have been any known spills or other hazardous materials releases that potentially intersect with the alignment. If any known spills or other hazardous materials releases are discovered, an aquatic sediment screening and testing program would be developed to evaluate the risk of exposing hazardous sediments to the marine environment. The program would entail the following: • Representative aquatic sediment samples would be collected at a minimum of three locations placed evenly along the alignment. The depth of the samples would be consistent with the depth of trenching at each sample location. • Sediment samples would be tested according to methods prescribed in the Guidelines for Implementation of the Inland Testing Manual in San Francisco Bay or updated similar manual approved by the San Francisco Bay Dredge Material Management Office (DMMO) (DMMO 2001). The results of this test would be compared to concentrations allowed for in-bay disposal by the San Francisco Bay DMMO to determine if sediments are clean or require special handling. • Aquatic sediments that exceed San Francisco Bay DMMO testing standards would: – Be avoided by the cable installation route, or – Be removed through dredging and disposed of at an appropriate facility approved by the RWQCB, or – Be controlled via use of a silt curtain or other appropriate BMP approved by the RWQCB. • Cable installation and hydroplow use would be limited to the specified areas and the minimum length necessary.

APM Number	Description
BIO-23	**Aquatic Spill Prevention and Control.** A spill prevention and control plan would be developed and implemented for the Proposed Project throughout all phases of construction. This plan would, at a minimum, include the following parameters to reduce potential effects from spills: • Procedures to ensure any equipment used in water (e.g., hydroplow or excavators) are cleaned of excess lubricants and fuels. • Identification of any hazardous materials used by the Proposed Project. • Storage locations and procedures for such materials. • Spill prevention practices, as well as BMPs, employed for various activities. • Requirements to inspect equipment regularly such that it is maintained to be free of leaks. • Spill kit location, cleanup, and notification procedures.
BIO-24	**Marine Mammals - Pile Driving.** When an impact hammer is necessary to drive piles, a biological monitor would be present to observe for wildlife and would halt pile-driving operations if marine mammals are observed within a distance where they may be affected by sounds created during pile driving.
BIO-25	**Shade Minimization.** Where feasible, the Proposed Project would include the installation of light-transmitting surfaces to minimize shade beneath the in-water transition structure. Materials installed for light transmission should allow for a minimum of 40 percent light transmission to the waters below. If the final design can incorporate a minimum of 25 percent of the surface area using light transmitting surfaces, no additional measures are required as sufficient light would be allowed to reach waters below such that critical habitat would not be shaded in a way that minimizes reductions in habitat productivity. In the event light-transmitting surfaces cannot be installed for safety, structural, or accessibility reasons, the Proposed Project may also install lights beneath the structure to offset light loss within the permanently shaded area. If either of these options are infeasible, the Proposed Project would mitigate for the portion of the structural footprint, which would be permanently shaded. Areas permanently shaded by the overwater structure may be mitigated with one, or a combination of the following means: • Removing equivalent shaded coverage over open water and/or in-water fill at a nearby location, • With the purchase of mitigation credits from an approved mitigation bank at a 1-to-1 ratio (i.e., critical habitat permanently shaded: mitigation habitat), or • By other similar actions approved by regulatory agencies, so long as those alternative actions achieve a similar effect as described previously (e.g., actions which cause ecological uplift of habitat quality).

APM Number	Description
BIO-26	**Overwater Concrete Casting.** The following measure would be implemented during the casting of overwater concrete: • The bottom elevation of the transition structure would be set at an elevation above the 100-year flood level to allow water and debris to flow beneath the structure during the curing process. • All overwater concrete would be poured into water-tight forms, and isolated from waters of the Delta until concrete has fully cured (typically 30 days). • Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water would be excluded from the site until the sealant is dry. • Any water used to keep concrete moist during the curing process would not be allowed to run off of the structure. Concrete forms would also be sufficiently designed to catch and hold any such cure water. • At all times when concrete is being poured or when working with wet concrete, a monitor would be present to inspect the containment structures and ensure that no concrete or cure water escapes the containment structure.
CUL-1	**Worker's Environmental Awareness Program.** In accordance with this measure, the Proposed Project's WEAP would include, at minimum: • Training on how to identify potential cultural resources and human remains during the construction process; • 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 Proposed Project; • A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and policies; and • A statement by the construction company or applicable employer agreeing to abide by the WEAP, and other applicable laws and regulations. The WEAP would be provided to all Proposed Project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker would be involved in ground-disturbing activities without having participated in the WEAP.
CUL-2	**Avoid Environmentally Sensitive Areas.** Cultural resource surveys would be performed for any portion of the Proposed Project area not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys would be subject to a 50-foot buffer around the boundary of each respective resource and designated as environmentally sensitive areas. Methods of environmentally sensitive area delineation may include, as applicable, flagging, rope, tape, or fencing. The environmentally sensitive areas should be clearly marked on all pertinent construction plans. Where operationally feasible, all NRHP- and CRHR-eligible resources would be protected from direct Proposed Project impacts by Proposed Project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources would be avoided by all Proposed Project construction and restoration activities, where feasible. If work within the 50-foot buffer cannot be avoided, then monitoring would be required.

APM Number	Description
CUL-3	**Inadvertent Discoveries.** In the event that previously unidentified cultural resources are uncovered during implementation of the Proposed Project, all work within 50 feet of the discovery would be halted and redirected to another location. A qualified archaeologist(s) would inspect the discovery and determine whether further investigation is required. The qualifications of the archaeologist(s) would be approved by the CPUC and U.S. Army Corps of Engineers (USACE). If the discovery can be avoided and no further impacts would occur, the resource would be documented on California Department of Parks and Recreation cultural resource records, and no further effort would be required. If the resource cannot be avoided and may be subject to further impact, the significance and NRHP and CRHR eligibility of the resource would be evaluated and, in consultation with the CPUC and USACE, appropriate treatment measures would be determined. All work would remain halted until a Secretary of the Interior-qualified archaeologist approves the treatment measures. Preservation in place would be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3), if it is demonstrated that resources cannot feasibly be avoided, and if the unearthed resource is prehistoric or Native American in nature, a Native American representative, in consultation with the CPUC and USACE, would develop additional treatment measures, such as data recovery consistent with CEQA Guidelines 15126.4(b)(3)(C-D). Archaeological materials recovered during any investigation would be curated at an accredited curation facility or transferred to the appropriate tribal organization.
CUL-4	**Paleolandform Testing.** Prior to construction, the paleolandform would be evaluated through coring and soil analysis. If this analysis indicates the potential for cultural resources, a Paleolandform Monitoring Plan would be developed, approved by the CPUC, and implemented during submarine cable installation within 500 feet of the potential cultural resources.
GEN-1	**Scour Analysis.** LSPGC would submit a Scour Analysis to the USACE evaluating the appropriate burial depth of the proposed LSPGC 230 kV Submarine Segment's cables. The evaluation would consider the potential scour and dredging activities along the cables' alignment. Following the USACE's review, LSPGC would provide the study to the CPUC for its records.
GEO-1	**Geological Hazards and Disturbance to Soils.** The following measures would be implemented during construction to minimize impacts from geological hazards and disturbance to soils: • Keep vehicles and construction equipment within the limits of the Proposed Project and in approved construction work areas to reduce disturbance to topsoil. • Salvage any disturbed topsoil during temporary grading activities to a maximum depth of 6 inches or to the actual depth if shallower (as identified in a site-specific geotechnical engineering report) to avoid the mixing of soil horizons. • Avoid construction in areas with saturated soils where topsoil salvage has not occurred whenever practical to reduce impacts to soil structure and allow safe access. Similarly, avoid topsoil salvage in saturated soils to maintain soil structure. • Keep topsoil material on site in the immediate vicinity of the temporary disturbance or at a nearby approved work area to be used in the restoration of temporarily disturbed areas. Recontour temporarily disturbed areas following construction to match pre-construction grades. Site and manage on-site material storage in accordance with all required permits and approvals.

APM Number	Description
	• Keep vegetation removal and soil disturbance to a minimum and limited to only the areas needed for construction and to provide adequate vegetation removal to meet initial electrical clearance and wildfire prevention requirements. Dispose of removed vegetation off site at an appropriate licensed facility, or it can be chipped on site to be used as mulch during restoration.
GHG-1	**Greenhouse Gas Emissions Reduction During Construction.** The following measures would be implemented during construction to minimize GHG emissions: • If suitable park-and-ride facilities are available in the Proposed Project vicinity, construction workers would be encouraged to carpool to the job site. • On-road and off-road vehicle tire pressures would be inflated to manufacturer specifications; tires would be checked and reinflated at regular intervals. • Demolition debris would be recycled for reuse to the extent feasible. • Line power, instead of diesel generators, would be used at construction sites where feasible. • Construction equipment would be maintained per the manufacturer's specifications.
HAZ-1	**Air Transit Coordination.** LSPGC would implement the following protocols related to helicopter use during construction and air traffic: • LSPGC would comply with all applicable FAA regulations regarding air traffic within 2 miles of the Proposed Project alignment. • LSPGC's helicopter operator would coordinate all Proposed Project helicopter operations with local airports before and during Proposed Project construction. • Helicopter use and landing zones would be managed to minimize impacts on local residents.
PALEO-1	**WEAP Training.** Prior to the start of the construction activities, all field personnel would receive a WEAP training on paleontological resources. The training would provide a description of the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project area, the role of the paleontological monitor, steps to follow if a fossil discovery is made, and contact information for the paleontologist. The training would be developed by the paleontologist and would be delivered concurrently with other training, including cultural, biological, and safety.
PALEO-2	**Paleontological Monitoring.** A professional paleontologist would be retained to monitor initial ground-disturbing activities in areas mapped as Pleistocene alluvial fan deposits (Qpf) and Montezuma Formation (Qmz). Monitoring would entail the visual inspection of excavated or graded areas and trench sidewalls. If a paleontological resource is discovered, the paleontological monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. If the resource is determined to be of scientific significance, the paleontological monitor would complete the following steps: • If fossils are discovered, all work in the immediate vicinity would be halted to allow the paleontological monitor to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the

APM Number	Description
	paleontological monitor would recover them by following standard field procedures for collecting paleontological resources. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (e.g., skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontological monitor would have the authority to temporarily direct, divert, or halt construction activity to ensure that the fossils can be removed in a safe and timely manner. • An accredited repository, which has agreed to accept fossils that may be discovered during Proposed Project-related excavations, would be identified prior to construction activities. Upon completion of fieldwork, all significant fossils collected would be prepared in a properly equipped laboratory to a point ready for curation. Preparation may include the removal of excess matrix from fossil materials and stabilizing or repairing specimens. During preparation and inventory, the fossil specimens would be identified to the lowest taxonomic level practical prior to curation at an accredited repository (usually a museum). The fossil specimens would be delivered to the accredited museum or repository no later than 30 days after all laboratory work is completed. The cost of curation would be assessed by the repository and would be the responsibility of the client.
HYD-1	**Utilize In-Water Sediment Containment during Open Trenching in Marine Environments.** In-water sediment control BMPs (e.g., sediment curtains, silt barriers, turbidity curtains, or similar technologies) would be utilized when open trenching would occur in marine environments to reduce the amount of disturbed sediment discharged to the surrounding area and to reduce potential short-term impacts from mobilized sediment on surrounding benthic environments.
PUB-1	**School Access.** Construction of the proposed LSPGC Telecommunication Line within 320 feet of Saint Peter Martyr School would be coordinated with the school's administration and conducted during the summer months, at a time when school is out of session, in order to minimize disruptions to school access.
REC-1	**Access Restrictions in the Delta.** Construction crews would coordinate with the USCG's San Francisco Waterways Branch, the San Francisco VTC, and the City of Pittsburg's harbor master prior to any temporary in-water access restrictions to ensure that Delta users are aware of upcoming restrictions. In addition, a Local Notice to Mariners would be submitted to the USCG's District 11 at least 15 days prior to the start of in-water construction.
TRA-1	**Navigational Study.** LSPGC would submit a Navigational Study to the USCG documenting the potential effects of the construction and O&M of the Proposed Project on boat navigation within the Suisun Marsh and the Delta. Following the USCG's review, LSPGC would provide the study to the CPUC for its records prior to in-river construction.
UTIL-1	**Induction Study.** An induction study would be conducted to evaluate the potential effects of the Proposed Project on pipelines in its vicinity. The study would include applicable standards of the NESC pertaining to the need for interference analysis and anti-corrosion/cathodic protection. The study would model the electrical interference effects on pipelines during different electrical conditions, such as maximum load and fault conditions. Additionally, the study would perform a coating stress voltage and alternating current (AC) density analysis on the pipelines. The induction study would recommend AC mitigation methods based on the findings. All recommendations of the study would be incorporated into the final engineering and design for the Proposed Project.

APM Number	Description
FIRE-1	**Construction Fire Prevention Plan.** A Proposed Project-specific CFPP would be prepared and submitted to the CPUC for review prior to initiation of construction. The CFPP would be fully implemented throughout the construction period and would include, at a minimum, the following: • The purpose and applicability of the CFPP. • Responsibilities and duties. • Preparedness training and drills. • Procedures for fire reporting, response, and prevention that include the following: – Identification of daily site-specific risk conditions, – The tools and equipment needed on vehicles and to be on hand at sites, – Reiteration of fire prevention and safety considerations during tailboard meetings, and – Daily monitoring of the red flag warning system with appropriate restrictions on types and levels of permissible activity. • Coordination procedures with federal and local fire officials. • Crew training, including fire safety practices and restrictions. • Method(s) for verifying that all CFPP protocols and requirements are being followed. A Proposed Project Fire Marshal or similar qualified position would be established to enforce all provisions of the CFPP, as well as perform other duties related to fire detection, prevention, and suppression for the Proposed Project. Construction activities would be monitored to ensure implementation and effectiveness of the CFPP.

Table 3-16: PG&E Construction Measures

CM Number	Description
AES-1	All work areas would be maintained in a clean and orderly state.
AG-1	**Landowner Coordination.** PG&E would coordinate with landowners prior to construction and during restoration efforts. Measures to be implemented may include, but are not limited to, the following: • Provide notice to landowners outlining construction activities and restoration efforts. • Areas disturbed by construction of the Proposed Project restored in accordance with lease agreements, applicable operation and maintenance standards, and environmental permit requirements. • In areas containing permanent crops (i.e., grape vines, orchard crops, etc.) that must be removed to gain access to pole sites for construction purposes, PG&E may provide compensation to the farmer and/or landowner in coordination with the landowner.
AIR-1	**Tier 4 Construction Equipment.** Construction equipment with a rating between 100 and 750 hp would be required to use engines compliant with Environmental Protection Agency Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.
AIR-2	**Fugitive Dust Control.** The following actions would be taken, as applicable and feasible, to control fugitive dust during construction. BAAQMD notifications would be made in accordance with any requirements in effect at the time of construction. • Applying water to disturbed areas and to storage stockpiles. • Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities. • Limit vehicle speed to 15 mph. • Load haul trucks with a freeboard (space between top of truck and load) of six inches or greater. • Cover the top of the haul truck load. • Clean-up track-out at least daily.
BIO-1	**Vernal Pool and Waters Avoidance.** Prohibit vehicular and equipment refueling 250 feet from the edge of vernal pools, and 100 feet from the edge of other wetlands, streams, or waterways. If refueling must be conducted closer to wetlands, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. Maintain spill prevention and cleanup equipment in refueling areas. Maintain a buffer of 250 feet from the edge of vernal pools and 50 feet from the edge of wetlands, ponds, or riparian areas. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew would implement other measures as prescribed by the land planner, biologist, or HCP administrator to minimize impacts by flagging access, requiring foot access, restricting work until dry season, or requiring a biological monitor during the activity.

CM Number	Description
BIO-2	**Revegetation.** If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew would revegetate the area with a commercial "weed free" seed mix.
BIO-3	**Worker's Environmental Awareness Training.** All workers on the Proposed Project site would be required to attend a Workers Environmental Awareness Program (WEAP) training. Training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: • Environmentally sensitive area boundaries, • Housekeeping (i.e., trash and equipment cleaning), • Safety, • Work stoppage, • Communication protocol, and • Consequences of non-compliance.
BIO-4	**Delineation and Avoidance of Sensitive Habitat Features.** A Designated Biologist would clearly identify sensitive resources that crews must avoid for the duration of the activities with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize or avoid disturbance.
BIO-5	**Special-Status Plant Species.** Occurrences of special-status plant species would be avoided to the extent practicable and would include performance of Proposed Project activities in special-status plant habitat after senescence. PG&E has created "Map Book zones" for the 13 state or federally listed plants that are covered in the O&M HCP. A Map Book zone is defined as an area of occupied or potentially occupied the HCP-covered plant species habitat as determined by PG&E botanical surveys. When rare and endangered plant species subject to the NPPA cannot be avoided, PG&E would follow the requirements of California Fish and Game Code Sections 1913(b) and 1913(c) concerning notification to CDFW at least 10 days in advance and provide an opportunity to salvage such species. If a special-status plant is found or known to occur, the plant would be avoided if feasible (i.e., O&M objectives could still be met). If feasible to avoid, avoidance would include establishing a buffer around the plants and demarcation of the buffer by a qualified biologist or botanist using flagging. Consideration of site-specific environmental factors such as terrain, site hydrology, light, and potential introduction of invasive plants may inform the avoidance approach.
BIO-6	**Biological Monitor.** For Covered Activities in Covered Species modeled habitat that require work over a period of two weeks or greater, a General Biological Monitor would conduct compliance inspections, at a minimum, once every week after clearing, grubbing, and grading are completed and during periods of inactivity.

CM Number	Description
BIO-7	**Clean Equipment and Materials.** Permittee would implement the following for activities that involve ground disturbance: • Mud and/or accumulated soils would be removed from equipment and vehicles to the maximum extent practicable. • Vehicles and equipment would be cleaned or washed before entering a new work site. • A log would be kept for each work site and would be completed to document each cleaning or washing of vehicles or equipment before entering each new work site. • Vehicles would be staged and stored on paved or cleared areas to the extent practicable. • Certified weed-free mulch, straw, hay bales, or equivalent materials would be used where necessary.
BIO-8	**Vehicle Travel.** Permittee would: • Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt). • Use existing access and ROW roads. Minimize the development of new access and ROW roads, including clearing and blading for temporary vehicle access in areas of natural vegetation. • Locate off-road access routes and work sites to minimize impacts on plants, shrubs, and trees, small mammal burrows, and unique natural features (e.g., rock outcrops). • Limit vehicle speeds on unpaved roads to 15 miles per hour.
BIO-9	**Trapped Animal Prevention.** Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews would search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist would be notified and would relocate the species to adjacent habitat or the species would be allowed to naturally disperse, as determined by a biologist. Minimize potential for covered species to seek refuge or shelter in pipes and culverts. Inspect pipes and culverts, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Immediately contact a biologist if a covered species is suspected or discovered.
BIO-10	**Minimize Footprint.** Minimize the activity footprint and minimize the amount of time spent at a work location to reduce the potential for take of species.
BIO-11	**Construction Hours and Lighting.** Construction activities would cease 30 minutes before sunset and would not begin prior to 30 minutes after sunrise, where feasible. Night work would be limited in extent, duration, and brightness, to the extent feasible. If temporary construction lighting is required, PG&E would use shielded construction light fixtures, or otherwise screen or direct lighting away from nearby residences except in the cases of emergency.

CM Number	Description
BIO-12	**Nesting Birds.** If work is anticipated to occur within the nesting bird season (February–August 31) nesting birds, including raptors and other species protected under the Migratory Bird Treaty Act, may be impacted. If active nests are discovered, exclusionary measures and/or designated avoidance buffers may be required and implemented according to the guidance in the PG&E Nesting Bird Management Plan. The Proposed Project biologist determines if the construction action would impact the nest, and if so, identifies whether alternative actions or monitoring can be implemented to avoid impacts. If active nests are observed during construction, crews must immediately alert the PG&E project biologist. Nests with eggs and/or chicks would be avoided: contact a biologist, land planner or the Avian Protection Program manager for further guidance.
BIO-13	**Felling Trees.** Directionally fell trees away from an exclusion zone, if an exclusion zone has been defined. If this is not possible, remove the tree in sections. Avoid damage to adjacent trees to the extent possible. Avoid removal of snags and conifers with basal hollows, crown deformities, and/or limbs over 6 inches in diameter.
BIO-14	**Conservation Landowner Notification.** Notify conservation landowner at least 2 business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice would be provided if possible or if required by other permits. If the work is an emergency, as defined in PG&E's Utility Procedure ENV-8003P-01, PG&E would notify the conservation landowner within 48 hours after initiating emergency work. While this notification is intended only to inform conservation landowner, PG&E would attempt to work with the conservation landowner to address landowner concerns.
BIO-15	**Prohibitions.** Prohibit trash dumping, firearms, open fires (such as barbecues), hunting, and pets (except for safety in remote locations) at work sites.
BIO-16	**Fire Suppression.** During fire season in designated State Responsibility Areas, equip all motorized equipment with federally approved or state-approved spark arrestors. Use a backpack pump filled with water and a shovel and fire-resistant mats and/or windscreens when welding. During fire "red flag" conditions as determined by CAL FIRE, curtail welding. Each fuel truck would carry a large fire extinguisher with a minimum rating of 40 B:C. Clear parking and storage areas of all flammable materials.
BIO-17	**Erosion and Sediment Control BMPs.** Utilize standard erosion and sediment control BMPs (pursuant to the most current version of PG&E's *Stormwater Field Manual for Construction Best Management Practices*) to prevent construction site runoff into waterways.
BIO-18	**Soil Stockpiling.** Stockpile soil within established work area boundaries and locate stockpiles so as not to enter water bodies, stormwater inlets, other standing bodies of water. Cover stockpiled soil prior to precipitation events.
CUL-1	**Worker Awareness Training.** PG&E would provide environmental awareness training on archeological resources protection. This training may be administered by the PG&E cultural resources specialist (CRS) or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the Proposed Project and would at minimum include: types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing cultural resources

CM Number	Description
CUL-2	**Flag and Avoid Known Resources.** Sites would be marked with flagging tape, safety fencing, and/or sign designating it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment would not intrude on these sites during construction. At the discretion of the PG&E CRS, monitoring may be done in lieu of or in addition to flagging. If it is determined that the Proposed Project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the National Register of Historic Places (NRHP)/California Register of Historic Resources (CRHR) would be conducted. Should the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level would be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.
CUL-3	**Unanticipated Cultural Resources Discoveries.** a. Unanticipated Cultural Resources. If unanticipated cultural resources are inadvertently discovered during site preparation or construction activities, work would stop in that area and within 50 feet of the find until CRS or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the CRS's approval. PG&E would implement the CRS's or their designee's recommendations for treatment of discovered cultural resources. b. Human Remains. In the unlikely event that human remains or suspected human remains are uncovered during preconstruction testing or during construction, all work within 50 feet of the discovery would be halted and redirected to another location. The find would be secured, and the CRS or designated representative would be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the CRS would determine whether the find is an archaeological deposit and whether paragraph (a) of this CM should apply. If the remains are human, the cultural resources specialist would immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the cultural resources specialist contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC, as required by PRC Section 5097.98, would determine and notify the Most Likely Descendant.

CM Number	Description
GEO-1	**Minimize Construction in Soft or Loose Soils.** Where soft or loose soils are encountered during Proposed Project construction, several actions are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these actions may be implemented to eliminate impacts from soft or loose soils: • Locating construction facilities and operations away from areas of soft and loose soil. • Over-excavating soft or loose soils and replacing them with engineered backfill materials. • Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction. • Installing material, such as aggregate rock, steel plates, or timber mats, over access roads. • Treating soft or loose soils in place with binding or cementing.
PALEO-1	**Worker Awareness Training.** PG&E would provide environmental awareness training on paleontological resources protection. This training may be administered by the PG&E cultural resources specialist (CRS) or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the Proposed Project and would at minimum include: types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing paleontological resources.
PALEO-2	**Paleontological Monitoring.** A professional paleontologist would be retained to monitor initial ground-disturbing activities in previously undisturbed areas mapped as Montezuma Formation (Qmz). Monitoring would entail the visual inspection of excavated or graded areas and trench sidewalls. If a paleontological resource is discovered, the paleontological monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. If the resource is determined to be of scientific significance, the paleontological monitor would complete the following steps: • If fossils are discovered, all work in the immediate vicinity would be halted to allow the paleontological monitor to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the paleontological monitor would recover them by following standard field procedures for collecting paleontological resources. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (e.g., skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontological monitor would have the authority to temporarily direct, divert, or halt construction activity to ensure that the fossils can be removed in a safe and timely manner. • An accredited repository, which has agreed to accept fossils that may be discovered during Proposed Project-related excavations, would be identified prior to construction activities. Upon completion of fieldwork, all significant fossils collected would be prepared in a properly equipped laboratory to a point ready for curation. Preparation may include the removal of excess matrix from fossil materials and stabilizing or repairing specimens. During preparation and inventory, the fossil specimens would be

CM Number	Description
	identified to the lowest taxonomic level practical prior to curation at an accredited repository (usually a museum). The fossil specimens would be delivered to the accredited museum or repository no later than 30 days after all laboratory work is completed. The cost of curation would be assessed by the repository and would be the responsibility of the client.
GHG-1	**Greenhouse Gas Emissions Reduction During Construction.** The following actions would be taken, as feasible, to minimize greenhouse gas emissions. • Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the Proposed Project's construction schedule. • Minimize unnecessary construction vehicle idling time for on-road and off-road vehicles. The ability to limit construction vehicle idling time would 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 Proposed Project would 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 would be shut off. Construction foremen would include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings would include discussion of a "common sense" approach to vehicle use. • Maintain construction equipment in proper working conditions in accordance with PG&E standards. • Minimize construction equipment exhaust by using low-emission or electric construction equipment, where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later would be registered under the CARB Statewide Portable Equipment Registration Program. • Minimize welding and cutting by using compression of 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. • Encourage recycling construction waste where feasible.
HAZ-1	**Hazardous-Substance Control and Emergency Response.** PG&E would implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Proposed Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. If it is necessary to store chemicals on-site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on-site, as applicable.

CM Number	Description
	Proposed Project construction would involve soil surface blading/leveling, excavation of up to several feet, and augering to a maximum depth of 35 feet in some areas. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested, and if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following: • Proper disposal of potentially contaminated soils. • Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources. • Emergency response and reporting procedures to address hazardous material spills. • Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.
HAZ-2	**Worker Environmental Awareness.** The training would include the following components related to hazards and hazardous materials: • PG&E Health, Safety, and Environmental expectations and management structure. • Applicable regulations. • Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed. • Summary of the primary workplace hazards to which workers may be exposed. • Overview of the controls identified in the Storm Water Pollution Prevention Plan.
HAZ-3	**Air Transit Coordination.** PG&E would implement the following protocols related to helicopter use during construction and air traffic: • PG&E would comply with all applicable Federal Aviation Administration (FAA) regulations regarding air traffic within 2 miles of the Proposed Project alignment. • PG&E's helicopter operator would coordinate all Proposed Project helicopter operations with local airports before and during Proposed Project construction. • Helicopter use and landing zones would be managed to minimize impacts on local residents.

CM Number	Description
HYD-1	**Micro-Site Distribution Poles.** The distribution poles associated with the proposed PG&E 12 kV Distribution Line would be micro-sited in a manner that minimizes permanent impacts to sensitive wetland resources located along the alignment as a result of pole siting to the extent feasible. In the event that it is not possible to site poles in a manner that avoids impacts to wetlands, all appropriate permits would be obtained and any associated permit conditions would be implemented.
HYD-2	**Prepare and Implement a Storm Water Pollution Prevention Plan.** PG&E would prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body. BMPs to be part of the Proposed Project-specific SWPPP may include, but are not limited to, the following control measures. • Implementing temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) to control erosion from disturbed areas. • Protecting drainage facilities in downstream off-site areas from sediment using appropriate BMPs. • Protecting the quality of surface water from non-stormwater discharges such as equipment leaks, hazardous materials spills, and discharge of groundwater from dewatering operations. • Restoring disturbed areas, after Proposed Project construction is completed, unless otherwise requested by the landowner in agricultural land use areas.
NOI-1	**Employ Noise-Reducing Construction Practices during Temporary Construction Activities.** PG&E would employ standard noise-reducing construction practices such as the following: • Ensure that all equipment is equipped with mufflers that meet or exceed factory new-equipment standards. • Locate stationary equipment as far as practical from noise-sensitive receptors. • Limit unnecessary engine idling. • Limit all construction activity near sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime Proposed Project construction be necessary because of planned clearance restrictions, affected residents would be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.

CM Number	Description
TRA-1	**Temporary Traffic Controls.** PG&E would obtain any necessary transportation and encroachment permits from the California Department of Transportation and the local jurisdictions, as required, including those related to state route crossings and the transport of oversized loads and certain materials, and would comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. PG&E would develop road and lane closure or width reduction or traffic diversion plans as required by the encroachment permits. Construction activities that are in or along or that cross local roadways would follow best management practices and local jurisdictional encroachment permit requirements—such as traffic controls in the form of signs, cones, and flaggers—to minimize impacts on traffic and transportation in the Proposed Project area.
TRA-2	**Coordinate Road Closures with Emergency Service Providers.** At least 24 hours prior to implementing any road or lane closure, PG&E would coordinate with applicable emergency service providers in the Proposed Project vicinity. PG&E would provide emergency service providers with information regarding the road or lanes to be closed; the anticipated date, time, and duration of closures; and a contact telephone number.
FIRE-1	**Fire Risk Management.** PG&E would follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Proposed Project personnel would be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads would have federally approved or State-approved spark arrestors. All off-road vehicles would be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens would be used when welding. In addition, during fire “red flag” conditions (as determined by CAL FIRE), welding would be curtailed. Every fuel truck would carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials would be removed from equipment parking and storage areas.

CHAPTER 4 – DESCRIPTION OF ALTERNATIVES

This chapter identifies alternatives to the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) that were evaluated during the initial routing phase. Section 15126 of the California Environmental Quality Act (CEQA) Guidelines states that:

> "an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

As described in Chapter 2 – Introduction, the Proposed Project is being proposed with the following objectives:

- Meet the California Independent System Operator's (CAISO's) policy-driven need for the Proposed Project to address a number of identified transmission constraints on the Cayetano-North Dublin 230 kV Line, Lone Tree-USWP-JRW-Cayetano 230 kV Line, and Las Positas-Newark 230 kV Line and provide an additional supply from the 500 kV system into the northern Greater Bay Area.

- Meet the functional specifications set forth by CAISO for the LSPGC Collinsville 500/230 kV Substation and 230 kV transmission lines located near or adjacent to Pacific Gas and Electric Company's (PG&E's) existing Vaca Dixon-Tesla 500 kV Transmission Line. Close proximity to the existing PG&E 500 kV transmission line corridor would reduce the length of the 500 kV transmission interconnection lines, thereby reducing the right-of-way (ROW) requirements and the potential for significant environmental impacts.

- Achieve commercial operation by June 2028 in order to address critical reliability issues within the transmission system, such as high voltage under non-peak conditions and voltage that varies significantly on a daily basis.

- Improve and maintain the reliability of the transmission grid by addressing overloads on the Cayetano-North Dublin 230 kV Line, Lone Tree-USWP-JRW-Cayetano 230 kV Line, and Las Positas-Newark 230 kV Line and increase deliverability of renewable power by building and operating a facility that would help keep transmission voltages within specified parameters, reduce transmission losses, increase reactive margin for the system bus, increase transmission capacity, provide a higher transient stability limit, increase damping of minor disturbances, and provide greater voltage control and stability.

- Facilitate deliverability of load from existing and proposed renewable generation projects in the northern Greater Bay Area and corresponding progress toward achieving California's Renewables Portfolio Standard (RPS) goals in a timely and cost-effective manner by California utilities.

- To the extent practicable, locate the Proposed Project on land that is or has previously been disturbed, is in an existing ROW or adjacent to existing utility uses, or would otherwise minimize environmental impacts in a manner consistent with prudent transmission planning.

- Construct and operate the facility with safety as a top priority.

- Meet the Proposed Project need in a safe, cost-effective manner and consistent with LSPGC's cost containment agreement in the Approved Project Sponsor Agreement.

- Comply with and assist CAISO in meeting applicable Reliability Standards and Criteria developed by the North American Electric Reliability Corporation, Western Electricity Coordinating Council, and CAISO.

- Design and construct the Proposed Project in conformance with LSPGC's standards, the National Electric Safety Code, and other applicable national and state codes and regulations.

These objectives were used to develop and evaluate alternatives to the Proposed Project.

4.1 ALTERNATIVES CONSIDERED

4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders

CAISO considered a no-option alternative and reconductoring alternative to the Proposed Project. The no-option alternative would take no action and maintain the status quo. The reconductoring alternative would initially reconductor several 230 kV lines and implement system reinforcements in the future (CAISO 2022). Both alternatives were rejected by CAISO.

4.1.2 Alternatives Suggested by the Public or Agencies

No alternatives were suggested by the public or agencies during public outreach efforts conducted by the applicant.

4.1.3 Reduced Footprint Alternatives

No reduced footprint alternatives were considered.

4.1.4 Project Phasing Options

No project phasing options were considered. As described in Chapter 3 – Project Description, all components of the Proposed Project would be installed during a single phase of construction, and no future phases of development are associated with the Proposed Project. Any future modification of the proposed LSPGC Collinsville Substation would be dependent upon future needs; at this time, no modification of the Proposed Project is planned on a defined timeline. In addition, no significant environmental impacts were identified that could be ameliorated through the temporal phasing of the Proposed Project.

4.1.5 Alternative Facility and Construction Activity Sites

The subsections that follow describe one substation site alternative, which has one 500 kV interconnection alternative route and one 230 kV overhead transmission line alternative route. One variation was considered for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line extension to the proposed LSPGC Collinsville Substation. The alternatives and interconnection variation, as well as the Proposed Project facilities, are depicted in Figure 4-1: Alternatives and Route Variations.

4.1.5.1 Substation Site and Transmission Line Alternatives

As depicted in Figure 4-1: Alternatives and Route Variations, LSPGC has identified one substation site alternative, which has one alternative route for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line extension and one 230 kV overhead transmission line alternative route that extends toward the northern shore of the Sacramento River. One variation for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line extension was identified to the proposed LSPGC Collinsville Substation. A description of each alternative and variation and its ability to satisfy the Proposed Project's objectives are provided in the subsections that follow.

4.1.5.1.1 Substation Alternative

As shown in Figure 4-1: Alternatives and Route Variations, the Substation Alternative is located adjacent to and south of Talbert Lane, approximately 0.9 mile east of Collinsville Road, and approximately 530 feet west of PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line.

This alternative is consistent with the Proposed Project's objectives of being in close proximity to PG&E's existing 500 kV transmission line corridor and would allow for the construction and operation of a facility that would help keep transmission voltages within specified parameters, reduce transmission losses, increase reactive margin for the system bus, increase transmission capacity, provide a higher transient stability limit, increase damping of minor disturbances, and provide greater voltage control and stability.

Because PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line would be interconnected to the new substation, proximity to these connection points was identified as a key cost-driving factor. LSPGC identified an alternative route for PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line extension to the Substation Alternative site to further consider the feasibility of this alternative, as described in Section 4.1.5.2 Substation Alternative Route Alternatives. The Substation Alternative would meet all of the Proposed Project's objectives. Therefore, this alternative has been carried forward for analysis in Chapter 6 – Comparison of Alternatives of this Proponent's Environmental Assessment (PEA).

4.1.5.2 Substation Alternative Route Alternatives

500 kV Interconnection Alternative

LSPGC identified one alternative route to the Proposed Project's 500 kV interconnection route. As shown in Figure 4-1: Alternatives and Route Variations, the 500 kV Interconnection Alternative would extend approximately 530 feet from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line to the east side of the Substation Alternative. This alternative route would include the same components as the Proposed Project; however, when compared to the

Proposed Project, the 500 kV Interconnection Alternative would be approximately 15 times shorter than the Proposed Project's 500 kV interconnection route. This alternative route would meet all Proposed Project's objectives. Therefore, this alternative has been carried forward for analysis in Chapter 6 – Comparison of Alternatives.

230 kV Overhead Transmission Line Alternative

LSPGC identified one 230 kV overhead transmission line alternative route to the Proposed Project's 230 kV overhead transmission line route. As shown in Figure 4-1: Alternatives and Route Variations, the 230 kV Overhead Transmission Line Alternative would begin at the Substation Alternative and extend approximately 1.8 miles toward the northern shore of the Sacramento River. The 230 kV Overhead Transmission Line Alternative would include the same components as the Proposed Project but would be approximately two times longer than the Proposed Project's 230 kV Overhead Transmission Line. This alternative route would meet all Proposed Project's objectives. Therefore, this alternative has been carried forward for analysis in Chapter 6 – Comparison of Alternatives.

4.1.5.3 500 kV Interconnection Variation

As shown in Figure 4-1: Alternatives and Route Variations, the 500 kV Interconnection Variation would begin at the proposed LSPGC Collinsville Substation and extend approximately 1.2 miles along the same route as the Proposed Project's 500 kV interconnection route. However, with the 500 kV Interconnection Variation, the eastern 500 kV transmission line would extend an additional 300 feet before turning and traveling for approximately 0.5 mile to interconnect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The 500 kV Interconnection Variation would include the same components as the Proposed Project but would extend the route of the eastern 500 kV transmission line by approximately 300 feet. This alternative route would meet all Proposed Project's objectives. Therefore, this alternative has been carried forward for analysis in Chapter 6 – Comparison of Alternatives.

4.1.5.4 Construction Activity Site Alternatives

No construction activity site alternatives were considered.

4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives

No renewable, energy conservation, energy efficiency, demand response, distributed energy resources, or energy storage alternatives were considered.

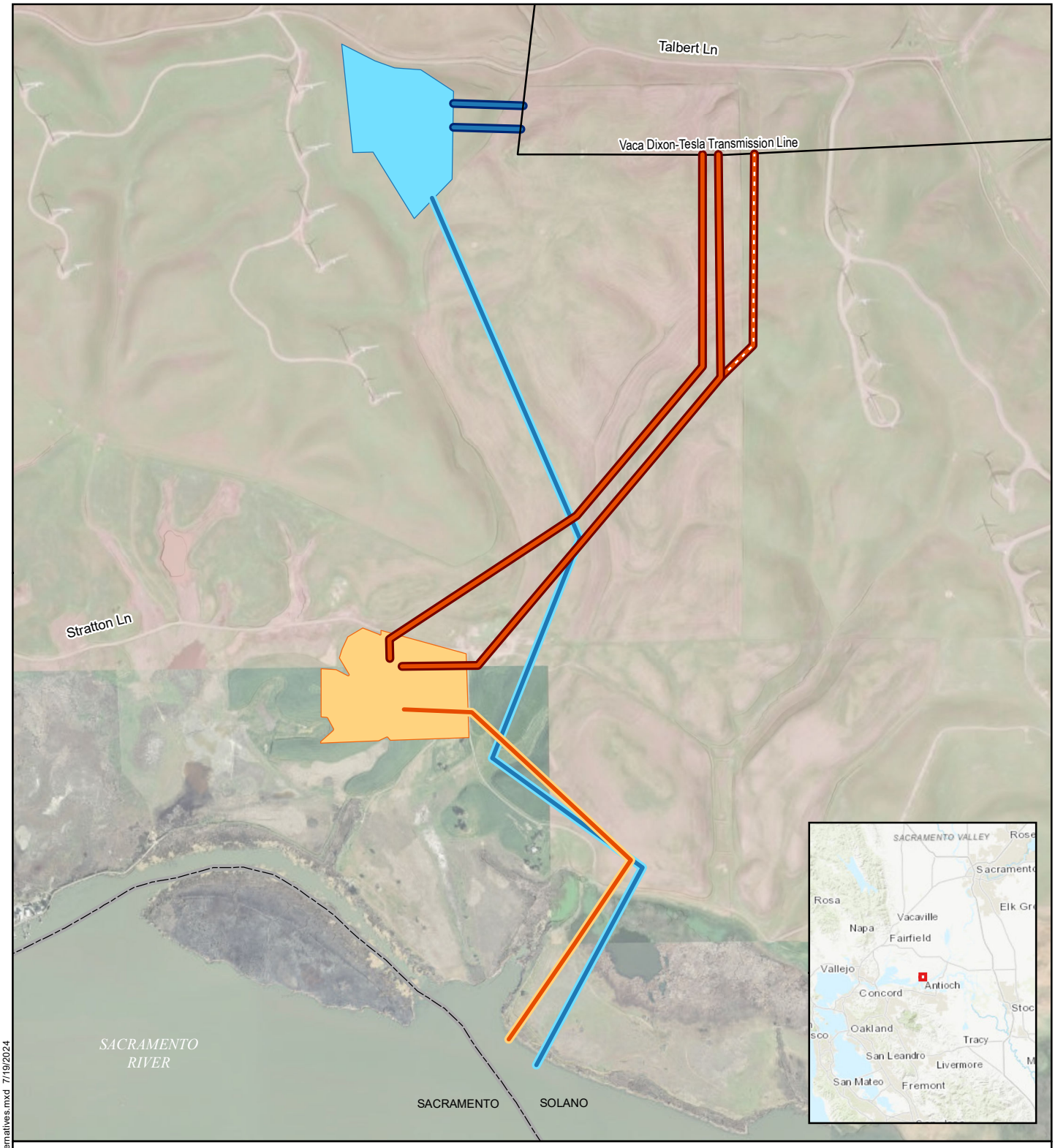


Figure 4-1: Alternatives and Route Variations **Collinsville 500/230 Kilovolt Substation Project**

Proposed Project (Old)

- LSPGC 230 kV Overhead Segment
- PG&E 500 kV Overhead Interconnection
- PG&E 500 kV Overhead Interconnection Route Variation
- LSPGC Collinsville Substation Site

Alternative Project

- LSPGC 230 kV Overhead Segment
- PG&E 500 kV Overhead Interconnection
- LSPGC Collinsville Substation Site Alternative

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4.1.7 Avoid or Limit the Construction of New Transmission-Voltage Facilities

All of the alternatives would involve the construction of 500 kV facilities. Transmission-voltage facilities are required to meet the Proposed Project objectives because distribution-voltage facilities would not be able to supply the load on the 230 kV corridor between PG&E's existing Contra Costa and Newark substations under normal, N-1, and N-2 contingency conditions.[1]

4.1.8 Other Technological Alternatives

No other technological alternatives were considered.

4.1.9 Alternative Engineering or Technological Approaches

No alternative engineering or technological approaches were considered.

4.2 NO PROJECT ALTERNATIVE

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project (CEQA Guidelines Section 15126.6[e]). Under the No Project Alternative, improving and maintaining the reliability of the transmission grid and deliverability of renewable and energy storage portfolio resources in the area would be limited by multiple thermal overloads on the 230 kV corridor between Contra Costa and Newark under normal, N-1, and N-2 contingency. PG&E's existing infrastructure in the area would attempt to provide additional capacity to the San Francisco Bay Area; however, these mitigating actions would fall well short of the forecasted demand. Therefore, the No Project Alternative would fail to meet the Proposed Project's objectives because it would not meet CAISO's policy-driven need to address overloads on the 230 kV corridor between Contra Costa and Newark under normal, N-1, and N-2 contingency; address critical reliability issues within the transmission system; increase deliverability of renewable power to help keep transmission voltages within specified parameters; reduce transmission losses; increase reactive margin for the system bus; increase transmission capacity; provide a higher transient stability limit; increase damping of minor disturbances; provide greater voltage control and stability; and facilitate deliverability of load from existing and proposed renewable generation projects in the San Francisco Bay Area and corresponding progress toward achieving California's RPS goals in a timely and cost-effective manner by California utilities.

4.2.1 Rejected Alternatives

All alternatives addressed in Section 4.1 Alternatives Considered were selected by LSPGC for analysis in Chapter 6 – Comparison of Alternatives.

LSPGC did not receive any additional comments from other public agencies on the alternatives during preparation of the PEA.

[1] Normal or N-0 conditions refers to when the electric system is functioning normally and is not experiencing outages. N-1 contingency refers to the first contingency, or an outage occurring to a single component (e.g., a transformer or transmission circuit) of the electric system. N-2 contingency refers to when an outage occurs to two components of the electric system (CAISO 2021).

CHAPTER 5 – ENVIRONMENTAL IMPACT ASSESSMENT

This chapter examines the potential environmental impacts of the Collinsville 500/230 Kilovolt Substation Project (Proposed Project). The organization of this chapter is described in the following subsections.

5.0 ORGANIZATION OF RESOURCE AREA SECTIONS

Environmental analysis of the Proposed Project by resource area is provided in Sections 5.1 through 5.21 of this Proponent's Environmental Assessment (PEA). These sections present the environmental and regulatory setting, impact questions, methodology, impact analysis, applicable California Public Utilities Commission (CPUC) Draft Environmental Measures, LS Power Grid California, LLC's (LSPGC's) applicant-proposed measures (APMs), and Pacific Gas and Electric Company's (PG&E's) Construction Measures (CMs). Tables and figures are included within the text of each section. The sections are organized as follows:

- Section 5.1 Aesthetics
- Section 5.2 Agriculture and Forestry Resources
- Section 5.3 Air Quality
- Section 5.4 Biological Resources
- Section 5.5 Cultural Resources
- Section 5.6 Energy
- Section 5.7 Geology, Soils, and Paleontological Resources
- Section 5.8 Greenhouse Gas Emissions
- Section 5.9 Hazards, Hazardous Materials, and Public Safety
- Section 5.10 Hydrology and Water Quality
- Section 5.11 Land Use and Planning
- Section 5.12 Mineral Resources
- Section 5.13 Noise
- Section 5.14 Population and Housing
- Section 5.15 Public Services
- Section 5.16 Recreation
- Section 5.17 Transportation
- Section 5.18 Tribal Cultural Resources
- Section 5.19 Utilities and Services Systems
- Section 5.20 Wildfire
- Section 5.21 Mandatory Findings of Significance

5.0.1 Environmental Setting

The analysis of each resource area begins with an examination of the existing physical setting (i.e., baseline conditions as determined pursuant to Section 15125[a] of the California Environmental Quality Act [CEQA] Guidelines) that may be impacted by the Proposed Project.

5.0.2 Regulatory Setting

The Regulatory Setting section provides a discussion of federal, state, and local regulations, plans, policies, and/or laws that are directly relevant to the environmental resource area being analyzed.

5.0.3 Impact Questions

The Impact Questions section identifies the criteria used to determine when physical changes to the environment created as a result of the Proposed Project would be considered significant. The significance criteria serve as a benchmark for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area" affected by the Proposed Project. The significance determination under each impact analysis is made by comparing the construction and operation and maintenance impacts of the Proposed Project with the conditions in the Environmental Setting section and comparing the difference to the significance criteria.

5.0.4 Impact Analysis

The Impact Analysis section identifies the methodology used to analyze potential environmental impacts for each resource area. Some evaluations may be quantitative, while others are qualitative. This section includes the analysis of potential impacts associated with each resource area. The impacts are compared to the significance criteria to determine the level of significance.

The impact sections focus on impacts that are considered potentially significant per the requirements of CEQA. An impact is considered significant if it leads to a "substantial, or potentially substantial, adverse change in the environment." Impacts from the Proposed Project fall within one of the following categories:

- **No Impact:** There would be no impact to the identified resource as a result of the Proposed Project.

- **Less-than-Significant Impact:** Some impacts may result from the Proposed Project; however, they are judged to be less than significant. Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource. A less-than-significant impact applies when the environmental impact does not exceed the significance threshold or with the proper APMs, the impacts have been reduced to less than significant.

- **Less-than-Significant Impact with Mitigation Incorporated:** Significant adverse impacts may occur; however, with proper agency-imposed mitigation, the impacts can be reduced to less than significant.

- **Potentially Significant Impact:** Adverse impacts may occur that would be significant even after APMs and/or agency-imposed mitigation have been applied to minimize their severity. A potentially significant or significant impact applies when the environmental

impact exceeds the significance threshold, or information was lacking to make a less-than-significant impact determination.

5.0.5 CPUC Draft Environmental Measures

Attachment 4 of the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and PEAs provides Draft Environmental Measures for consideration during PEA development. These Draft Environmental Measures were considered and incorporated for each applicable resource area analyzed in this chapter of the PEA.

5.0.6 Applicant-Proposed Measures

Section 15126.4(a)(3) of the CEQA Guidelines states that mitigation measures are not required for effects that are not found to be significant. Therefore, when an impact is found to be less than significant, no APMs may be proposed. When there is the potential for the Proposed Project to result in a significant impact, APMs have been identified. For the purposes of CEQA, APMs are treated as mitigation measures that could minimize potentially significant or significant impacts that may result from the Proposed Project. Compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less-than-significant levels are not considered mitigation measures under CEQA. Section 15370 of the CEQA Guidelines defines mitigation to include the following:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments, including through the permanent protection of such resources in the form of conservation easements.

A complete list of APMs and CMs are provided in Table 3-15: Applicant-Proposed Measures and Table 3-16: PG&E Construction Measures, respectively in Chapter 3 – Project Description.

5.1 AESTHETICS

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

This section describes the aesthetic resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.1.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.1.1.1 Landscape Setting

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be in the Montezuma Hills in southern Solano County. The Montezuma Hills consist of gently rolling hills of similar size, texture, and color. The proposed LSPGC Collinsville Substation would be located along Stratton Lane at approximately 50 feet above mean sea level with the surrounding peaks at generally 150 to 250 feet above sea level. The hills and peaks to the north and west are dotted with wind turbines and related energy infrastructure, an important element of the visual landscape in the Montezuma Hills. The proposed LSPGC Collinsville Substation site itself has been recently used for crops and grazing.

The vegetation in the Montezuma Hills area is generally annual grassland used for grazing. Very few trees are located in the area, and the trees that appear are associated with the residences in the unincorporated community of Collinsville or the occasional rural farmstead in the hills. Permanent and seasonal wetlands contrast with dry grassland. Adjacent to the west and southwest of the Montezuma Hills is the Suisun Marsh, which comprises approximately 111,500 acres of tidal marsh, managed wetlands, waterways, and lowland and upland grassland areas.

The proposed LSPGC 230 kV Submarine Segment would be located in the Delta waterways; however, it would be beneath the Delta waterways and would not be perceptible by any viewers. The in-river structure would be located approximately 0.1 mile from the Montezuma Hills' southern shoreline in the Delta waterways and would not be perceptible from any of the Key Observation Points (KOPs) and is not discussed further. The Delta waterways vary in color from bright blue in the marina areas to blue-green to green-grey depending on the water depth and vegetation.

The landscape setting surrounding the proposed LSPGC 230 kV Underground Segment and PG&E's existing Pittsburg Substation are not addressed as the only visible Proposed Project components; two new riser poles would result in only a *de minimis* change in this heavily industrialized, degraded visual environment (Arcadis 2023). In addition, the proposed LSPGC Telecommunications Line would be installed underground and would not be visible to the public. As a result, the landscape setting surrounding the proposed LSPGC Telecommunications Line is not addressed.

5.1.1.2 Scenic Resources

The proposed LSPGC Collinsville Substation and PG&E 12 kV Distribution Line would be approximately 3 miles east of Grizzly Island Road, which is a Solano County-designated scenic roadway (Solano County 2008). Grizzly Island Road extends generally southeast through the Suisun Marsh. The proposed LSPGC Collinsville Substation (including the microwave tower), LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line are within the viewshed of the eastern end of Grizzly Island Road and the fishing piers located there. Geographic information system- (GIS-) based viewshed analysis utilizing a 10-meter digital elevation model indicates that the Proposed Project components would be located in an area that is theoretically visible from the fishing piers. However, due to the distance from the road and fishing piers, profile of the infrastructure, and intervening

vegetation, the proposed LSPGC Collinsville Substation (including the microwave tower), LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would not be visible from this location.

The proposed PG&E 500 kV Interconnection would be approximately 5 miles west of State Route (SR-) 160, which is an officially designated State Scenic Highway (California Department of Transportation [Caltrans] 2024). SR-160 crosses the San Joaquin River and travels along the eastern edge of the Sacramento River. PG&E's existing Pittsburg Substation is approximately 1.4 miles north of SR-4, which is a Contra Costa County-designated scenic roadway. SR-4 extends west to east from Interstate 80 to SR-160 through northern Contra Costa County. Due to distance, topography, and the existing built environment, none of the Proposed Project components would be visible from either SR-160 or SR-4. No other scenic vistas, national scenic areas, state-designated scenic highways, or other identifiable scenic resources are located within 5 miles of the Proposed Project.

5.1.1.3 Viewshed Analysis

The Proposed Project area is gently sloping land in the Montezuma Hills and the viewshed is enclosed by the hills on the north and east; the shorelines of the City of Antioch and City of Pittsburg on the south side of the Delta waterways; and the unincorporated community of Collinsville and the Suisun Marsh to the west and southwest, with the City of Benecia and the Diablo Range cutting off the view in the distance. The distance of views to and from the site on Stratton Lane are generally 4 to 5 miles but the extended views with discernable mountain peaks reach a distance of approximately 10 miles. Topography obscures many views within the Proposed Project area.

5.1.1.4 Landscape Character Units

A landscape character unit is a portion of the landscape that exhibits consistent elements and features that create a unified view. Five landscape character units have been identified for the Proposed Project viewshed, as illustrated in Figure 5.1-1: Landscape Character Units and Representative Photographs/KOPs.

5.1.1.4.1 Landscape Unit 1, Montezuma Hills Landscape Character Unit

The Montezuma Hills range in elevation from 25 to 350 feet above mean sea level and contain valley floor grasslands that are periodically cultivated for dryland production of oats, wheat, and barley.

The Montezuma Hills are monochromatic in color most of the year due to the limited variation in vegetation. The landscape is honey brown in the dry season and lush green in the wetter season. Wind turbines dot the hills and winding access roads carve through the landscape. The predominant uses in the area are energy production (e.g., wind energy) and grazing. Little to no residential use exists within the viewshed.

5.1.1.4.2 Landscape Unit 2, Collinsville Shoreline Landscape Character Unit

The Collinsville shoreline includes the unincorporated community of Collinsville and the Suisun Marsh. The Suisun Marsh is the largest brackish water wetland on the west coast. It is managed

for recreational purposes, such as fishing and hunting, and is cherished for its biodiversity. The marsh is home to birds, mammals, fish, amphibians, and reptiles.

The visual landscape of this character unit has a complex texture with a variety of grasses and low-growing shrubs with varied colors from light tan to deep brown to vibrant green in the drier season and varying shades of green in the wetter season. The area also features larger trees that are absent from the Montezuma Hills landscape character unit. This landscape character unit is less than 25 feet above mean sea level and is therefore subject to tidal influence.

5.1.1.4.3 Landscape Unit 3, Pittsburg Shoreline Landscape Character Unit

The Pittsburg shoreline is along the New York Slough on the south side of the Sacramento River. The shoreline features a mix of waterfront uses, including a public marina, private yacht club, parks, multiple residential developments, and industrial complexes. The area is urban in nature, highly developed, with manicured landscaping and a mix of colors and textures from lush green to steel grey. The industrial areas stand in stark contrast to the wetlands, river, and developed parklands in the Pittsburg area.

5.1.1.4.4 Landscape Unit 4, Delta Waterways Landscape Character Unit

The Delta waterways vary in color from bright blue in the marina areas to blue-green to green-grey depending on the water depth and vegetation. The Delta is used for recreational purposes, such as fishing and boating, but is also a sensitive and key link in California's ecosystem.

5.1.1.4.5 Landscape Unit 5, Wetland Landscape Character Unit

Many islands are located in the Delta. The proposed LSPGC 230 kV Submarine Segment would be west of Winter Island and Browns Island and east of Chain Island, Van Sickle Island, and Chipps Island. All are rich in natural habitat and feature diverse species that create a visually complex landscape with colors varying from tan to brown to vivid green. None of these islands are inhabited by humans, but they do contain diverse plants and wildlife.

5.1.1.5 Viewers and Viewer Sensitivity

Accepted visual assessment methods establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria used to evaluate visual impact significance, is defined as the extent to which the viewing public would notice or experience a change in visual quality. Viewer sensitivity is based on a viewer's ability to perceive the landscape and is affected by their activity on the landscape. Viewer sensitivity can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, viewing duration, viewing distance, adjacent land use, and special management or planning designation. Visual sensitivity would vary with the type of users. The primary viewer groups—motorists, agricultural workers, and residents—and their associated viewer sensitivities within the Proposed Project area are described in the following subsections.

5.1.1.5.1 Motorists

Motorists include local travelers who are familiar with the visual setting and regional travelers using area roadways on an occasional basis. Local travelers include those commuting to or from work, as well as residents of Collinsville. Regional motorists include those attending the area for

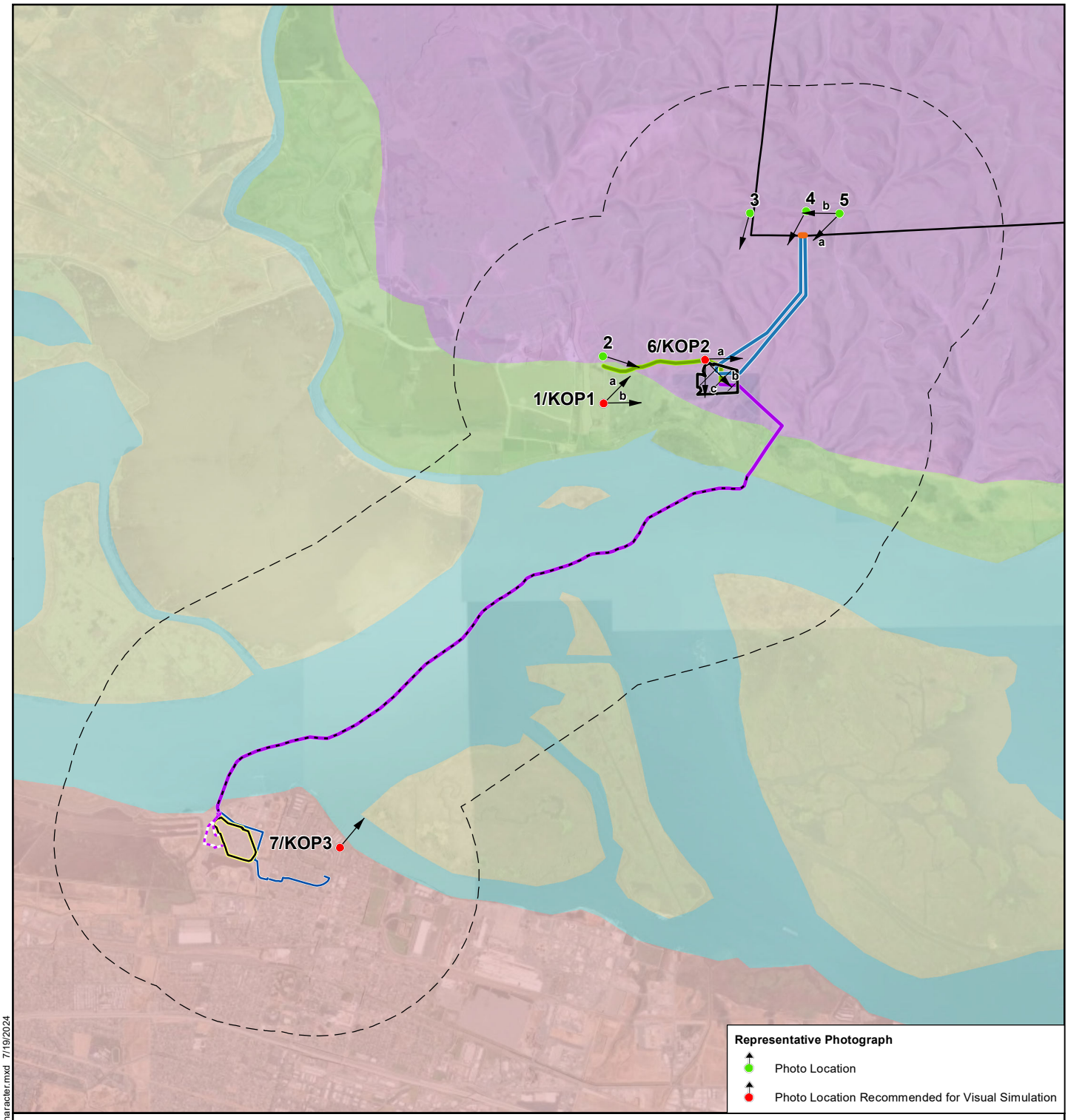

Figure 5.1-1: Landscape Character Units and Representative Photographs/KOPs **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer
- Landscape Unit 1 - Montezuma Hills Landscape Character Unit
- Landscape Unit 2 - Collinsville Shoreline Landscape Unit
- Landscape Unit 3 - Pittsburg Shoreline Landscape Character Unit
- Landscape Unit 4 - Sacramento River Character Unit
- Landscape Unit 5 - Wetland Landscape Character Unit

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recreational activities. The duration of motorists' views is generally brief due to the topography and winding nature of the local roads and averages a few seconds. Given the short duration of views and the transience of most viewers, motorists' viewer sensitivity is considered low to moderate.

5.1.1.5.2 Workers

Land use in the Montezuma Hills area is largely agriculture and energy production; workers harvesting crops or tending energy facilities are the second-largest viewer group. The duration of workers' views can be long depending on the work being performed. Given their focus on work tasks while in the Montezuma Hills area, workers' viewer sensitivity is considered low.

5.1.1.5.3 Residents

The largest viewer group would be residents. Southwest of the proposed LSPGC Collinsville Substation is the unincorporated community of Collinsville. The small community has fewer than 20 residential structures. In contrast, the residential area surrounding the Pittsburg Marina includes hundreds of residential structures.

The views of the Proposed Project from the two residential areas vary greatly, with the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line located near Collinsville having screened views through intervening topography and vegetation and the Pittsburg residents having a view across the Delta and at a distance of approximately 5 miles. Given the long duration of views and their connection to place, residents' viewer sensitivity is considered moderate to high.

As discussed previously, the proposed LSPGC 230 kV Underground Segment and associated riser structures adjacent to PG&E's existing Pittsburg Substation would result in only a *de minimis* change in this heavily industrialized, degraded visual environment. The proposed LSPGC 230 kV Submarine Segment and LSPGC Telecommunications Line would be installed beneath the surface and would not be visible to residents. As a result, residents' viewer sensitivity was not considered for the proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, or LSPGC Telecommunications Line.

5.1.1.5.4 Recreationists

Another primary group of viewers are recreationists who may be local or visiting. For the purposes of the study, boaters have been excluded because the vantage point of a boater requires special equipment that is unavailable to the average member of the public. The study considers recreationists that are walking, biking, sightseeing, or fishing from shore. This group generally places a high value on scenic resources and views tend to be long in duration. Given the long duration of views and their value on scenic resources, recreationists' viewer sensitivity is considered moderate to high.

5.1.1.6 Representative Viewpoints

Selection of the representative viewpoints began with a desktop review of Proposed Project maps; GIS data; and federal, state, and local plans and policies. Through the desktop study, seven representative viewpoints were selected from which to obtain photographs in the field to characterize the existing visual condition and assess potential use in visual simulations. Site

reconnaissance was conducted in August 2023 to obtain the photographs from the representative locations and views. All points are publicly accessible, although some would not frequently be used by the public as they are located on unpaved roads.

5.1.1.7 Representative Photographs

Figure 5.1-2: Representative Photograph 1a, Figure 5.1-3: Representative Photograph 1b/KOP 1, Figure 5.1-4: Representative Photograph 2, Figure 5.1-5: Representative Photograph 3, Figure 5.1-6: Representative Photograph 4, Figure 5.1-7: Representative Photograph 5a, Figure 5.1-8: Representative Photograph 5b, Figure 5.1-9: Representative Photograph 6a, Figure 5.1-10: Representative Photograph 6b/KOP 2, and Figure 5.1-11: Representative Photograph 6c present a set of 11 photographs taken from representative locations within the Proposed Project area and viewshed.

Table 5.1-1: Summary of Representative Viewpoints includes information regarding each viewpoint location, primary viewer types, and backdrop conditions to Proposed Project components. Taken together, these photographs convey a general sense of the existing visual character of the landscape within the vicinity of the Proposed Project.

Table 5.1-1: Summary of Representative Viewpoints

Photograph Number and Location	Primary Viewers	Predominant Backdrop for Proposed Project Structures
1a and 1b. Collinsville Road	Landowners, Residents	Landscape and sky. The brown and green grasslands and undulating brown hills dominate the view with the wind turbines prominent in the background.
2. Collinsville Road	Landowners, Agricultural and Energy Facility Workers, Residents	Landscape and sky. The grey-green and brown grasslands in the foreground open up to brown undulating hills in the middle ground with wind turbines and sky in the background. Two oak trees interrupt the landscape in the middle ground.
3. Talbert Lane	Landowners, Agricultural and Energy Facility Workers	Landscape and sky. The rolling hills off the side of Talbert Lane feature grasses of brown and green. Dominant in the middle ground of the view is a lattice tower and associated power lines.
4. Talbert Lane	Landowners, Agricultural and Energy Facility Workers	Landscape and sky. The rolling hills provide a short view of brown grasslands. The top of a lattice tower and three wind turbines are visible in the middle ground.
5a and 5b. Talbert Lane	Landowners, Agricultural and Energy Facility Workers	Landscape and sky. The sky and to a lesser extent the green fields form the backdrop for the structures.
6a, 6b, and 6c. Stratton Lane	Landowners, Agricultural and Energy Facility Workers	Landscape and sky. Rolling brown grass covered hills with patches of green.
7. Pittsburg Marina	Residents, Regional Visitors	Water, landscape, and sky. The manmade marina is in the foreground with the Delta waterways beyond in the middle ground. The Montezuma Hills dotted with wind turbines form the background.

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Figure 5.1-2: Representative Photograph 1a
(Looking Northeast)

Figure 5.1-3: Representative Photograph 1b/KOP 1
(Looking East)

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INSIGNIA ENVIRONMENTAL ARCADIS

Figure 5.1-4: Representative Photograph 2
(Looking East-Southeast)

Figure 5.1-5: Representative Photograph 3
(Looking South-Southwest)

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Figure 5.1-6: Representative Photograph 4
(Looking Southwest)

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Figure 5.1-7: Representative Photograph 5a
(Looking Southwest)

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Figure 5.1-8: Representative Photograph 5b
(Looking West)

INSIGNIA ENVIRONMENTAL ARCADIS

Figure 5.1-9: Representative Photograph 6a
(Looking East)

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Figure 5.1-10: Representative Photograph 6b/KOP 2
(Looking East-Southeast)

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INSIGNIA ENVIRONMENTAL ARCADIS

Figure 5.1-11: Representative Photograph 6c
(Looking Southeast)

The set of photographs also demonstrates that existing transmission and distribution facilities within the Proposed Project viewshed, including those associated with the Proposed Project, are established elements of the area's visual setting.

5.1.1.8 Visual Resource Management Areas

No classified Visual Resource Management Areas are located within the Proposed Project area because it is not located on federal lands (Bureau of Land Management [BLM] 2020, United States [U.S.] Department of Transportation [DOT] 2015).

5.1.2 Regulatory Setting

5.1.2.1 Regulatory Setting

5.1.2.1.1 Federal

No federal laws or regulations are relevant to the Proposed Project as it is not located on any federal lands.

5.1.2.1.2 State

California Department of Transportation's State Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, state legislation is required.

5.1.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Resources Chapter of the Solano County General Plan includes goals, policies, and implementation measures to guide development and protect visual quality within the county on a long-term basis. The Resources Chapter of the Solano County General Plan includes the following policies that are relevant to the Proposed Project:

- Policy RS.G-4: Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.
- Policy RS.G-6: Preserve the visual character and identity of communities by maintaining open space areas between them.
- Policy RS.P-35: Protect the unique scenic features of Solano County, particularly hills, ridgelines, wetlands, and water bodies.
- Policy RS.P-36: Support and encourage practices that reduce light pollution and preserve views of the night sky.
- Policy RS.P-37: Protect the visual character of designated scenic roadways.
- Policy RS.P-58: Require the siting of energy facilities in a manner compatible with surrounding land uses and in a manner that will protect scenic resources.

Sacramento County General Plan

The Circulation Element of the Sacramento County General Plan identifies the following objective to preserve and enhance the aesthetic quality of scenic roads:

- Objective: To retain designation of the River Road (State Route 160) as an Official State and County Scenic Highway and to preserve and enhance its scenic qualities.

Contra Costa County General Plan

The Transportation and Circulation Element of the Contra Costa County General Plan contains policies and implementation measures to identify, preserve, and enhance scenic routes in the county. The following policies from the Transportation and Circulation Element are relevant to the Proposed Project:

- Policy 5-47: Scenic corridors shall be maintained with the intent of protecting attractive natural qualities adjacent to various roads throughout the county.
- Policy 5-49: Scenic views observable from scenic routes shall be conserved, enhanced, and protected to the extent possible.
- Policy 5-50: The existing system of scenic routes shall be enhanced to increase the enjoyment and opportunities for scenic pleasure driving to major recreational and cultural centers throughout this and adjacent counties.

City of Pittsburg General Plan

The City of Pittsburg General Plan does not contain any goals or policies relevant to the Proposed Project.

5.1.3 Impact Questions

5.1.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For Aesthetics, the CEQA Checklist asks if the Project would:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

5.1.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for aesthetics.

5.1.4 Impact Analysis

5.1.4.1 Aesthetics Impact Analysis

5.1.4.1.1 Would the project have a substantial adverse effect on a scenic vista?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. No scenic vistas are located in the Proposed Project area; therefore, no impact would occur from the LSPGC and PG&E Proposed Project components.

5.1.4.1.2 Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. The nearest state scenic highway to the LSPGC and PG&E Proposed Project components is SR-160, which is approximately 5 miles east of where the proposed LSPGC 230 kV Submarine Segment and PG&E 500 kV Interconnection would be located. The LSPGC and PG&E Proposed Project components would not substantially damage scenic resources within SR-160 as no portion of the Proposed Project would cross SR-160. Therefore, the Proposed Project would have no impact.

5.1.4.1.3 Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Construction

LSPGC Components

Less-than-Significant Impact. Construction-related visual impacts of the LSPGC Proposed Project components would not substantially degrade the existing visual character or quality of the site and its surroundings. During construction of the LSPGC Proposed Project components, visual impacts would include the presence of workers, portable buildings, construction equipment, and vehicles associated with the installation of the substation components and new transmission line structures. To varying degrees, construction activity would be noticeable to motorists and the small number of local residents. Most of the construction activity would be limited to locations set back from roadways.

During construction, fugitive dust generated by construction activities could affect visibility in the Proposed Project vicinity. As described in Section 5.3 Air Quality, applicant-proposed measure (APM) AIR-2 would require fugitive dust control measures, consistent with Bay Area Air Quality Management District (BAAQMD) and Sacramento Metropolitan Air Quality Management District (SMAQMD) requirements. These measures would be implemented as needed during construction and would reduce the potential for dust emissions to adversely affect the scenic quality of the area.

Ground disturbance would occur during construction of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line. In addition, minor ground disturbances may occur when temporary staging and work areas are established to support construction activities. Ground disturbances would potentially degrade the existing visual character or quality of public views of the site and its surroundings. APM AES-1 would be implemented to ensure construction staging areas are sited away from public view where possible, and temporary staging and work areas are

maintained in a clean and orderly state to reduce impacts associated with temporary, minor ground disturbances.

A limited degree of visual contrast could occur due to ground disturbance activity, such as the creation of newly exposed soil areas; however, the effect would be minimized as much of the area is subject to soil disturbance as a result of agricultural activities. Therefore, the disturbed areas would blend in with the surrounding landscape setting, thus reducing visual contrast and potential visibility of these areas. Due to the existing disturbance of land from agricultural activities, as well as the limited duration of construction activities, construction-related visual effects would be less than significant. Implementation of APMs AES-1 and GEO-1, which would ensure that Proposed Project staging and temporary work areas would be returned to pre-construction conditions (including regrading disturbed areas to match pre-existing contours and conditions), would further minimize these impacts.

Construction of the proposed LSPGC Telecommunications Line is not anticipated to degrade the existing visual character as horizontal directional drilling methods would be used to install the telecommunications line underground. Therefore, little ground disturbance would occur, and the only visual impacts would result from the presence of workers, construction equipment, and vehicles. In addition, construction of the proposed LSPGC Telecommunications Line is only anticipated to last 3 months. Given the short-term nature of construction activities and lack of visual impacts associated with the proposed LSPGC Telecommunications Line, impacts would be less than significant.

Construction associated with the proposed in-river components are not anticipated to significantly impact the existing visual character. A barge towing a submerged hydroplow would be used to install the proposed LSPGC 230 kV Submarine Segment in the Delta waterways. Similarly, a barge would be used to install the in-river transition structure. Because the barge would appear similar to any other vessel moving through the Delta waterways, no impact associated with construction of the proposed in-river components would occur.

Construction of the proposed LSPGC 230 kV Underground Segment and associated riser structures adjacent to PG&E's existing Pittsburg Substation would occur in a heavily industrialized, degraded visual environment; therefore, no impact would occur.

PG&E Components

Construction-related visual impacts of the PG&E Proposed Project components would not substantially degrade the existing visual character or quality of the site and its surroundings. During construction of the PG&E Proposed Project components, visual impacts would include the presence of workers, portable buildings, construction equipment, and vehicles associated with the installation of new transmission and distribution line structures. To varying degrees, construction activity would be noticeable to motorists and the small number of local residents. Most of the construction activity would be limited to locations set back from roadways.

During construction, fugitive dust generated by construction activities could affect visibility in the Proposed Project vicinity. As described in Section 5.3 Air Quality, Construction Measure (CM) AIR-2 would require fugitive dust control measures, consistent with BAAQMD

requirements. These control measures would be implemented during construction and would reduce the potential for dust emissions to adversely affect the scenic quality of the area.

Ground disturbance would occur during construction of the proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line. In addition, minor ground disturbances may occur when temporary staging and work areas are established to support construction activities. Ground disturbances would potentially degrade the existing visual character or quality of public views of the site and its surroundings. CM AES-1 would be implemented to ensure construction staging and work areas are maintained in a clean and orderly state to reduce impacts associated with temporary, minor ground disturbances.

A limited degree of visual contrast could occur due to ground disturbance activity, such as the creation of newly exposed soil areas; however, the effect would be minimized as much of the area is subject to soil disturbance as a result of agricultural activities. Therefore, the disturbed areas would blend in with the surrounding landscape setting, thus reducing visual contrast and potential visibility of these areas. Due to the existing disturbance of land from agricultural activities, as well as the limited duration of construction activities, construction-related visual effects would be less than significant. Implementation of CMs AES-1 and GEO-1, which would mitigate for soft or loose soils to prevent dust emissions, would further minimize these impacts.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The visual impact analysis evaluated the visual changes that would occur from implementing the Proposed Project using the standards of quality, consistency, and symmetry typically used for a visual assessment. This assessment is based on a review of maps, site photographs, aerial photographs, Proposed Project-specific technical drawings, and the rendering of the LSPGC and PG&E Proposed Project components. Analysis of the impacts on existing visual resources from implementing the Proposed Project is based on evaluating the extent and implications of the visual changes and considering the following factors:

- Specific changes to the visual character, and specifically valued qualities of the affected environment;
- Visual context of the affected environment; and
- Number of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by Proposed Project actions.

The impact analysis primarily focuses on aboveground LSPGC and PG&E Proposed Project components having the largest potential to impact the existing visual resources, including the Proposed Project's construction and permanent aboveground components. An assessment of visual quality is subjective, and reasonable disagreement can occur as to whether alterations in the visual character of the potentially affected area would be adverse or beneficial.

To determine whether the LSPGC and PG&E Proposed Project components would substantially degrade the existing visual character or quality of the site and its surroundings, three of the representative photographs were chosen as KOPs. The validity of each of the representative views was confirmed in the field; from the 11 representative photographs, representative

photographs 1, 6, and 7 were selected as KOPs for which visual simulations were developed. The selections were made based on the following:

- Views of the proposed substation,
- Likely views of residents who may see the proposed substation and/or alignment from public roads,
- Likely views of recreationists who may see the proposed substation and/or alignment from public spaces,
- Likely views of motorists who may see the proposed substation and/or alignment from public roads,
- Likely views of workers who may see the proposed substation and/or alignment from public roads, and
- Locations and users that would be most sensitive to changes in visual conditions.

The KOP locations are presented in Figure 5.1-1: Landscape Character Units and Representative Photographs/KOPs.

The set of visual simulations presented in Figures 5.1-12 through 5.1-17 documents the Proposed Project-related visual changes that would occur at the three KOPs and provides the basis for evaluating potential visual effects associated with the LSPGC and PG&E Proposed Project components. The simulations presented consist of two full-page images designated "existing view" and "simulated view."

The visual simulations included in Figure 5.1-12: Collinsville Road Looking East (KOP 1) – Existing View through Figure 5.1-17: Plaza Marina Looking Northeast (KOP 3) – Simulated View were developed using systematic site photography, computer modeling, and digital rendering techniques. Photographs were taken using a digital single-lens reflex camera with fixed focal length 50-millimeter lens, which represents an approximately 40-degree horizontal view angle. Photography viewpoint locations were documented in the field using photo log sheet notations, Global Positioning System (GPS) recordings, and basemap annotations. Digital aerial photographs and Proposed Project design information provided the basis for developing three-dimensional computer modeling of the LSPGC and PG&E Proposed Project components. For each simulation viewpoint, the viewer location was input from GPS data using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlaid on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the three-dimensional modeling combined with selected digital site photographs.

The evaluation of potential visual effects considered factors such as the extent of change to the visibility of existing power lines, the degree to which the various LSPGC and PG&E Proposed Project components would contrast with or be integrated into the existing landscape, the extent of change in the landscape's composition and character, and the number and sensitivity of viewers. An analysis of the visual change to be realized at each KOP is presented in the sections that follow.

As discussed previously, the proposed LSPGC 230 kV Underground Segment and associated riser structures adjacent to PG&E's existing Pittsburg Substation would result in only a *de*

minimis change in this heavily industrialized, degraded visual environment. The proposed LSPGC 230 kV Submarine Segment and LSPGC Telecommunications Line would be installed beneath the surface and not visible to residents. As a result, the proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line, as well as PG&E's existing Pittsburg Substation would have no impact on the existing visual character or quality of public views.

KOP 1

LSPGC and PG&E Proposed Project components that would be visible from KOP 1 include the proposed LSPGC Collinsville Substation; the LSPGC 230 kV Overhead Segment structures, which measure 55 to 199 feet in height; the proposed PG&E 500 kV Interconnection structures, which measure 100 to 160 feet in height; and the proposed PG&E 12 kV Distribution Line structures, which measure 30 to 40 feet in height. A variety of new steel and wood structures would be visible, including single poles, groups of poles in close proximity to each other, lattice steel towers (LSTs), and A-frame structures within the proposed LSPGC Collinsville Substation. The tubular steel poles (TSPs) and structures that would be constructed within the proposed LSPGC Collinsville Substation would be made of dulled grey galvanized steel to the extent that equipment and components with non-reflective finishes are commercially available. The proposed LSPGC Collinsville Substation would be surrounded by a 10-foot-tall, prefabricated interlocking security wall with 1 foot of barbed wire on top.

The visual quality would be degraded by the addition of the proposed LSPGC Collinsville Substation, LSTs, TSPs, and conductor within the view. The new steel structures clustered together at the substation would clutter the view more than the existing wind turbines. Some of the structures would daylight the hilltops and work against the generally pleasing pattern of the wind turbines. While the existing view contains energy infrastructure, it is harmonious and rhythmic, while the proposed infrastructure would be dominant and visually discordant, creating an inharmonious landscape.

The viewers in the area of KOP 1 are residential landowners, workers, and recreationists. The number of viewers is low as the Collinsville community is small; however, the residents and recreationists would have views of long duration and would notice the change to the landscape. The landowners and agricultural workers would also notice the change, but they would be less likely to be sensitive to the change. The view of the Delta waterways would be unaffected.

Overall, the resulting visual impact at KOP 1 would be perceptible and the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would reduce the natural harmony and coherence by introducing a cultural infrastructure into a perceived natural landscape. While wind energy infrastructure and electrical distribution and transmission lines are typical in the views of the Montezuma Hills, the new infrastructure would be different in form and/or color than the existing wind and electrical infrastructure and would stand in contrast, and it would therefore be highly noticeable. However, because the existing visual character and quality of the site and its surroundings is presently degraded by the presence of dozens of tall, white wind turbines, the extent of degradation associated with the permanent LSPGC and PG&E Proposed Project components would not be substantial and impacts would be less than significant.

Figure 5.1-12: Collinsville Road Looking East (KOP 1) - Existing View

Figure 5.1-13: Collinsville Road Looking East (KOP 1) - Simulated View

Figure 5.1-14: Stratton Lane Looking East-Southeast (KOP 2) - Existing View

Figure 5.1-15: Stratton Lane Looking East-Southeast (KOP 2) - Simulated View

Figure 5.1-16: Plaza Marina Looking Northeast (KOP 3) - Existing View

Figure 5.1-17: Plaza Marina Looking Northeast (KOP 3) - Simulated View

LSPGC's facilities associated with the Proposed Project would be remotely monitored on a day-to-day basis. The proposed LSPGC Collinsville Substation would only require quarterly inspections, and the proposed LSPGC 230 kV Overhead Segment would only require annual comprehensive checks and maintenance. These O&M activities would not change the character or decrease the quality of any visual or scenic resources in the area. Similarly, PG&E's O&M activities would be similar to those currently performed in the Proposed Project area. Therefore, O&M activities associated with PG&E's facilities would not change the character or decrease the quality of any visual or scenic resources in the area.

KOP 2

LSPGC and PG&E Proposed Project components that would be visible from KOP 2 include the proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line. The wood pole line and conductors associated with the proposed PG&E 12 kV Distribution Line would be visible. In the foreground, the proposed LSPGC Collinsville Substation, conductor, and a variety of new steel structures (including single poles, groups of poles in close proximity to each other, and LSTs) would be visible in the foreground. The new steel structures would be constructed of dulled grey galvanized steel to the extent commercially available. Also visible in this view would be proposed LSPGC Collinsville Substation components, including, among other components, capacitors and low-profile steel structures that would generally not be visible from KOP 1. The proposed LSPGC Collinsville Substation would be surrounded by a 10-foot-tall, prefabricated interlocking security wall with 1 foot of barbed wire on top.

The visual quality would be degraded by the introduction of the proposed LSPGC Collinsville Substation, new LSTs, and wood poles within the view. While this view is typical, it is part of a larger attractive viewshed, and the introduction of the vertical elements contrasts the otherwise horizontal landscape, reducing the coherence and, therefore, the visual quality. The introduction of the proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would change the agricultural character of the landscape as there is currently little to no visible energy infrastructure south of Stratton Lane.

Overall, the resulting visual impact at KOP 2 would be perceptible and the proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would reduce the natural harmony and coherence by introducing cultural infrastructure into a perceived natural landscape. KOP 2 is accessed by local roads used generally by workers and landowners. The proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be visible from KOP 2; however, workers and landowners may expect this view as existing wind turbines and electrical facilities are located throughout the Montezuma Hills. The duration of views would be relatively short and the number of viewers from Stratton Lane would be low. Given the short view duration and the low to moderate viewer sensitivity, the addition of the vertical elements would result in a moderate overall impact. The proposed LSPGC Collinsville Substation would be visible from certain locations along the road but obscured at others due to changes in topography. The long-term operations-related visual effects would degrade the existing visual character or quality of the site and its surroundings, but the extent of degradation would not be substantial; therefore, the impacts would be less than significant.

KOP 3

LSPGC and PG&E Proposed Project components that would be visible from KOP 3 include the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment structures, PG&E 500 kV Interconnection structures, and PG&E 12 kV Distribution Line structures. Although views from KOP 3 would be long in duration and the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment structures, PG&E 500 kV Interconnection structures, and PG&E 12 kV Distribution Line structures are visible, the view is distant, the change would likely be imperceptible to most viewers, and it does not measurably change the quality of the view. Therefore, impacts would be less than significant.

5.1.4.1.4 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

LSPGC Components

Less-than-Significant Impact. Construction activities associated with the LSPGC Proposed Project components would not create a new source of light that would adversely affect day views in the area. Glare from construction equipment could occur depending on the time of day and the position of a viewer relative to the construction equipment; however, such glare would be transient and ephemeral, and associated impacts would be less than significant.

Most construction would take place during daylight hours; however, at limited times, some construction activities may be required or finished at night, and these activities would require lighting for safety. In these situations, portable temporary lighting would be directed exclusively to on-site locations and used to illuminate the immediate work area. Staging areas may be lit for staging and security, and lighting in these areas would be directed on site and shielded to reduce light escape, in accordance with APM AES-1. With the implementation of this APM, the impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. Construction activities associated with the PG&E Proposed Project components would not create a new source of light that would adversely affect day views in the area. Glare from construction equipment could occur depending on the time of day and the position of a viewer relative to the construction equipment; however, such glare would be transient and ephemeral, and associated impacts would be less than significant.

Most construction would take place during daylight hours; however, at limited times, some construction activities may be required or finished at night, and these activities would require lighting for safety. In these situations, portable temporary lighting would be directed exclusively to on-site locations and used to illuminate the immediate work area. Staging areas may be lit for staging and security, and lighting in these areas would be directed on site and shielded to reduce light escape, in accordance with CM BIO-11. Thus, impacts would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. Glare occurs when a high degree of contrast is evident between bright and dark areas in a field of view, making it difficult for the human eye to adjust to differences in brightness. Non-specular conductors and non-reflective insulators would be installed as part of the LSPGC Proposed Project components. The transmission structures would be constructed from non-reflective dulled grey galvanized steel to the extent commercially available. The structures and equipment to be installed at the proposed LSPGC Collinsville Substation would have non-reflective finishes and neutral earth-tone colors to the extent commercially available. These design features would minimize the potential effect of glare, resulting in less-than-significant impacts.

No structures would exceed 199 feet above ground level, and the Proposed Project alignment would not be closer than 10 miles to the nearest airport, and therefore, Federal Aviation Administration (FAA) notification would not be required. Furthermore, screening of the LSPGC Proposed Project components using the FAA Notice Criteria Tool (the results of which are included in Attachment 5.9-D: FAA Notice Criteria Tool Results) concluded that no LSPGC Proposed Project component would pose a hazard to air navigation. Although not anticipated, if the height of cranes used during construction reaches 200 feet or higher above ground level, the appropriate noticing would be filed with the FAA, and the Proposed Project would adhere to all FAA recommendations. Thus, aeronautical obstruction lighting is not anticipated to be implemented, and the transmission lines would not be a new source of light.

Lighting would be installed at the proposed LSPGC Collinsville Substation; the lighting would conform to National Electric Safety Code (NESC) requirements and other applicable outdoor lighting codes. NESC recommends, as good practice, illuminating the substation facilities to a minimum of 22 lux or two footcandles. Photocell-controlled lighting would be provided at a level sufficient to ensure safe entry and exit to the proposed LSPGC Collinsville Substation and control buildings, in accordance with APM BIO-12. Additional manually controlled lighting would be provided to create safe working conditions at the proposed LSPGC Collinsville Substation when required. All lighting provided would be shielded and pointed down to minimize glare onto surrounding properties and habitats, as described in APMs BIO-12 and AES-1. Light fixtures would be located near major outdoor equipment, general substation areas, and building exteriors. Lights would be mounted on structures, poles, and supplementary buildings as required. Lights would be motion-activated to avoid any unnecessary use or potential disturbance.

The Proposed Project would be remotely monitored on a day-to-day basis and would require quarterly inspections of the proposed LSPGC Collinsville Substation and annual comprehensive checks and maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. These O&M activities would usually occur during the day; nighttime maintenance activities are not expected to occur more than once per year. Nighttime lighting would generally only be used for security purposes and would be shielded and directed to prevent glare and light escape. Transmission line O&M activities are not anticipated to occur

during nighttime hours, except in the event of an emergency. Given the design and use of lighting at the proposed LSPGC Collinsville Substation, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. As described previously, glare occurs when a high degree of contrast is evident between bright and dark areas in a field of view, making it difficult for the human eye to adjust to differences in brightness. Non-specular conductors and non-reflective insulators would be installed as part of the PG&E Proposed Project components. The interconnection and distribution structures would be constructed from non-reflective dulled grey galvanized steel, to the extent commercially available, or wood. This design feature would minimize the potential effect of glare, resulting in less-than-significant impacts.

No structures would exceed 199 feet above ground level, and the Proposed Project alignment would not be closer than 10 miles to the nearest airport, and therefore, FAA notification would not be required. Furthermore, screening of the PG&E Proposed Project components using the FAA Notice Criteria Tool (the results of which are included in Attachment 5.9-D: FAA Notice Criteria Tool Results) concluded that no PG&E Proposed Project components would pose a hazard to air navigation. Although not anticipated, if the height of cranes used during construction reaches 200 feet or higher above ground level, the appropriate noticing would be filed with the FAA, and the Proposed Project would adhere to all FAA recommendations. Thus, aeronautical obstruction lighting is not anticipated to be implemented, and the transmission lines would not be a new source of light.

O&M activities for PG&E Proposed Project components are not anticipated to occur during nighttime hours, except in the event of an emergency. PG&E's O&M activities would be similar to those currently performed in the Proposed Project area. Therefore, impacts would be less than significant.

5.1.5 CPUC Draft Environmental Measures

The CPUC recommended a draft environmental measure for aesthetics. The recommended environmental measure is included in Section 5.1.6.1 Aesthetics Applicant-Proposed Measures as APM AES-1.

5.1.6 Applicant-Proposed Measures

5.1.6.1 Aesthetics Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM AES-1: Staging Area Maintenance and Restoration.** All Proposed Project sites would be maintained in a clean and orderly state. Temporary nighttime lighting would be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of Proposed Project construction, staging and temporary work areas would be returned to pre-Proposed Project conditions, including regrading of the site and revegetation or repaving of disturbed areas to match pre-existing contours and conditions.

5.1.6.2 Cross-Referenced Applicant-Proposed Measures

The following cross-referenced APMs would be implemented to reduce aesthetic quality impacts associated with the LSPGC Proposed Project components:

- **APM AIR-2: Dust Control.** Measures to control fugitive dust emissions would be implemented during construction. These measures would be included in a Fugitive Dust Control Plan that would be prepared in accordance with BAAQMD and SMAQMD requirements. The measures would be implemented as needed to control dust emissions. These measures would include, but may not be limited to, the following:

  - Surfaces disturbed by construction activities would be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance.

  - Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles would be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, or would be covered.

  - Vehicles hauling soil and other loose material would be covered.

  - Vehicles would adhere to a speed limit of 15 miles per hour (mph) on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas.

  - Visible mud or dirt trackout onto an adjacent public road would be removed at least once per day using wet power vacuum street sweepers.

  - Excavation, grading, and/or demolition activities would be suspended when average wind speeds exceed 20 mph and dust cannot be suppressed in accordance with the requirements of BAAQMD Rule 6-1.

  - Unpaved dirt roads providing access to sites located 100 feet or farther from a paved road would be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel.

  - Publicly visible signs would be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number would also be visible to ensure compliance with applicable regulations.

- **APM BIO-12: Project Lighting.** The use of outdoor lighting during construction would be minimized whenever practicable. Photocell-controlled lighting (i.e., motion detection) would be provided at a level sufficient to provide safe entry and exit to the proposed LSPGC Collinsville Substation and control enclosures. All lighting would be selectively placed, shielded, and directed downward and away from sensitive habitat and resources to the maximum extent practicable.

- **APM GEO-1: Geological Hazards and Disturbance to Soils.** The following measures would be implemented during construction to minimize impacts from geological hazards and disturbance to soils:

  - Keep vehicles and construction equipment within the limits of the Proposed Project and in approved construction work areas to reduce disturbance to topsoil.

  - Salvage any disturbed topsoil during temporary grading activities to a maximum depth of 6 inches or to the actual depth if shallower (as identified in a site-specific geotechnical engineering report) to avoid the mixing of soil horizons.

  - Avoid construction in areas with saturated soils where topsoil salvage has not occurred whenever practical to reduce impacts to soil structure and allow safe access. Similarly, avoid topsoil salvage in saturated soils to maintain soil structure.

  - Keep topsoil material on site in the immediate vicinity of the temporary disturbance or at a nearby approved work area to be used in the restoration of temporarily disturbed areas. Recontour temporarily disturbed areas following construction to match pre-construction grades. Site and manage on-site material storage in accordance with all required permits and approvals.

  - Keep vegetation removal and soil disturbance to a minimum and limited to only the areas needed for construction and to provide adequate vegetation removal to meet initial electrical clearance and wildfire prevention requirements. Dispose of removed vegetation off site at an appropriate licensed facility, or it can be chipped on site to be used as mulch during restoration.

5.1.7 PG&E Construction Measures

5.1.7.1 Aesthetics Construction Measures

The following CM would be implemented for the PG&E Proposed Project components:

- **CM AES-1:** All work areas would be maintained in a clean and orderly state.

5.1.7.2 Cross-Referenced PG&E Construction Measures

The following cross-referenced CMs would be implemented for the PG&E Proposed Project components:

- **CM AIR-2: Fugitive Dust Control.** The following actions would be taken, as applicable and feasible, to control fugitive dust during construction. BAAQMD notifications would be made in accordance with any requirements in effect at the time of construction.

  - Applying water to disturbed areas and to storage stockpiles.

  - Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities.

- Limit vehicle speed to 15 mph.
- Load haul trucks with a freeboard (space between top of truck and load) of six inches or greater.
- Cover the top of the haul truck load.
- Clean-up track-out at least daily.

- **CM BIO-11: Construction Hours and Lighting.** Construction activities would cease 30 minutes before sunset and would not begin prior to 30 minutes after sunrise, where feasible. Night work would be limited in extent, duration, and brightness, to the extent feasible. If temporary construction lighting is required, PG&E would use shielded construction light fixtures, or otherwise screen or direct lighting away from nearby residences except in the cases of emergency.

- **CM GEO-1: Minimize Construction in Soft or Loose Soils.** Where soft or loose soils are encountered during Proposed Project construction, several actions are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these actions may be implemented to eliminate impacts from soft or loose soils:
  - Locating construction facilities and operations away from areas of soft and loose soil.
  - Over-excavating soft or loose soils and replacing them with engineered backfill materials.
  - Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.
  - Installing material, such as aggregate rock, steel plates, or timber mats, over access roads.
  - Treating soft or loose soils in place with binding or cementing.

5.1.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to aesthetics associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would share a viewshed and introduce electric transmission structures and equipment with similar visual characteristics. As such, the potential modification would result in less-than-significant impacts to scenic resources and the visual quality of the surrounding area, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

This section describes the agriculture and forestry resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.2.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission

Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.2.1.1 Agricultural Resources

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 12 kV Distribution Line, and PG&E 500 kV Interconnection would be located on lands designated as Agriculture by the Solano County General Plan Land Use Element, and within the Solano County-identified Montezuma Hills agricultural region. The Montezuma Hills agricultural region is approximately 58,035 acres and rotates between sheep grazing and the growing of small grains, including oats and barley. The proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, LSPGC Telecommunications Line, and PG&E's existing Pittsburg Substation are not located on agricultural lands. No portion of the Proposed Project would be located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

5.2.1.1.1 Prime Farmland, Unique Farmland, or Farmland of Statewide Importance

The California Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP) Important Farmland Finder was reviewed to determine areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on which the Proposed Project would be located or which it would traverse. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces Important Farmland Maps, which combine soil quality, available irrigation, and land use information. The California Environmental Quality Act (CEQA) defines Farmland as land that qualifies under the FMMP as one of the following three categories:

- **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.

- **Farmland of Statewide Importance** is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.

- **Unique Farmland** is Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California.

The FMMP Important Farmland Finder identifies additional categories, including Confined Animal Agriculture, Nonagricultural and Natural Vegetation, Semi-agricultural and Rural

Commercial Land, Vacant or Disturbed Land, Rural Residential Land, Urban and Built-up Land, and Water; however, the CEQA Environmental Checklist only considers lands identified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland for agricultural impact assessment purposes.

Figure 5.2-1: California Important Farmland in the Proposed Project Area displays the Proposed Project in relation to California DOC farmland designations. The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be located on lands designated as Grazing Land (i.e., land on which the existing vegetation is suited to the grazing of livestock). The proposed LSPGC 230 kV Submarine Segment would be installed within and below the sediment surface of the Delta; therefore, it would not be on agricultural land. The proposed LSPGC 230 kV Underground Segment and LSPGC Telecommunications Line would be on land designated as Urban and Built-up Land, which is land used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes (California DOC 2023). Likewise, PG&E's existing Pittsburg Substation is on lands designated as Urban and Built-up Land.

5.2.1.1.2 Areas Under Williamson Act Contract

The Proposed Project is not located on agricultural lands subject to active Williamson Act contracts.

5.2.1.1.3 Agricultural Use Zoning

The Proposed Project components located in Solano County, including the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, portions of the LSPGC 230 kV Submarine Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be within agricultural zoning districts. No other portion of the Proposed Project would be located within an agricultural zoning district.

Approximately 0.7 mile of the proposed LSPGC 230 kV Overhead Segment, 0.2 mile of the proposed LSPGC 230 kV Submarine Segment, 1.4 miles of the proposed PG&E 500 kV Interconnection, and 0.5 mile of the proposed PG&E 12 kV Distribution Line would be located on Solano County lands or in Solano County waters zoned for Exclusive Agricultural (A-160) (Solano County 2023a). Lands zoned for A-160 preserve agriculture in Solano County by allowing agricultural-related support uses, excluding incompatible uses, and protecting the viability of the family farm (Solano County 2023b).

The proposed LSPGC Collinsville Substation and approximately 0.4 mile of the proposed PG&E 12 kV Distribution Line would be on Solano County land zoned as Suisun Marsh Agriculture (ASM-160). ASM-160 districts are intended to preserve lands best suited for permanent agricultural use and conserve the upland and lowland grasslands adjacent to the Suisun Marsh by ensuring developments are compatible with the protection of the Suisun Marsh (Solano County 2023b).

Article II of the Solano County zoning code describes the permitted uses in A-160 and ASM-160 districts. A pipeline, transmission, or distribution line in a right-of-way (ROW) is an allowable use; however, a utility facility or infrastructure outside of a ROW requires a use permit (Solano County 2023b). In addition, developments in ASM-160 districts require a marsh development permit.

However, the California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project pursuant to CPUC General Order (GO) 131-D, Section XIV.B. Therefore, the Proposed Project is not subject to local zoning regulations.

5.2.1.1.4 Active Agricultural Use

The Proposed Project area on the north side of the Sacramento River is occasionally used for grazing and hay cultivation. In June 2023, Insignia Environmental (Insignia) staff visited the north side of the Sacramento River and noted that the grasslands in that area appear to be regularly grazed. In addition, at least one watering station and potential cattle pen are located near Stratton Lane. In August 2023, Insignia staff visited the proposed LSPGC Collinsville Substation site and noted that hay had been harvested and stockpiled at the site.

5.2.1.2 Forestry Resources

There are no lands in the Proposed Project area designated as applicable forestry resources, forest land, timberland, or timberland zoned Timberland Production as defined by Public Resources Code 12220(g)25, Public Resources Code 4526, or California Government Code (CGC) Section 51104(g).

5.2.2 Regulatory Setting

5.2.2.1 Federal

5.2.2.1.1 Farmland Protection Policy Act

The National Agricultural Land Study of 1980-1981 found that millions of acres of farmland were being converted out of agricultural production in the United States each year. The 1981 Congressional report “Compact Cities: Energy-Saving Strategies for the Eighties” (Compact Cities report) identified the need for Congress to implement programs and policies to protect farmland and combat urban sprawl and the waste of energy and resources that accompanies sprawling development.

The Compact Cities report indicated that much of the sprawl was the result of programs funded by the federal government. With this in mind, Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. The final rules and regulations were published in the Federal Register on June 17, 1995. The FPPA and its implementing rules and regulations set forth provisions intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses.

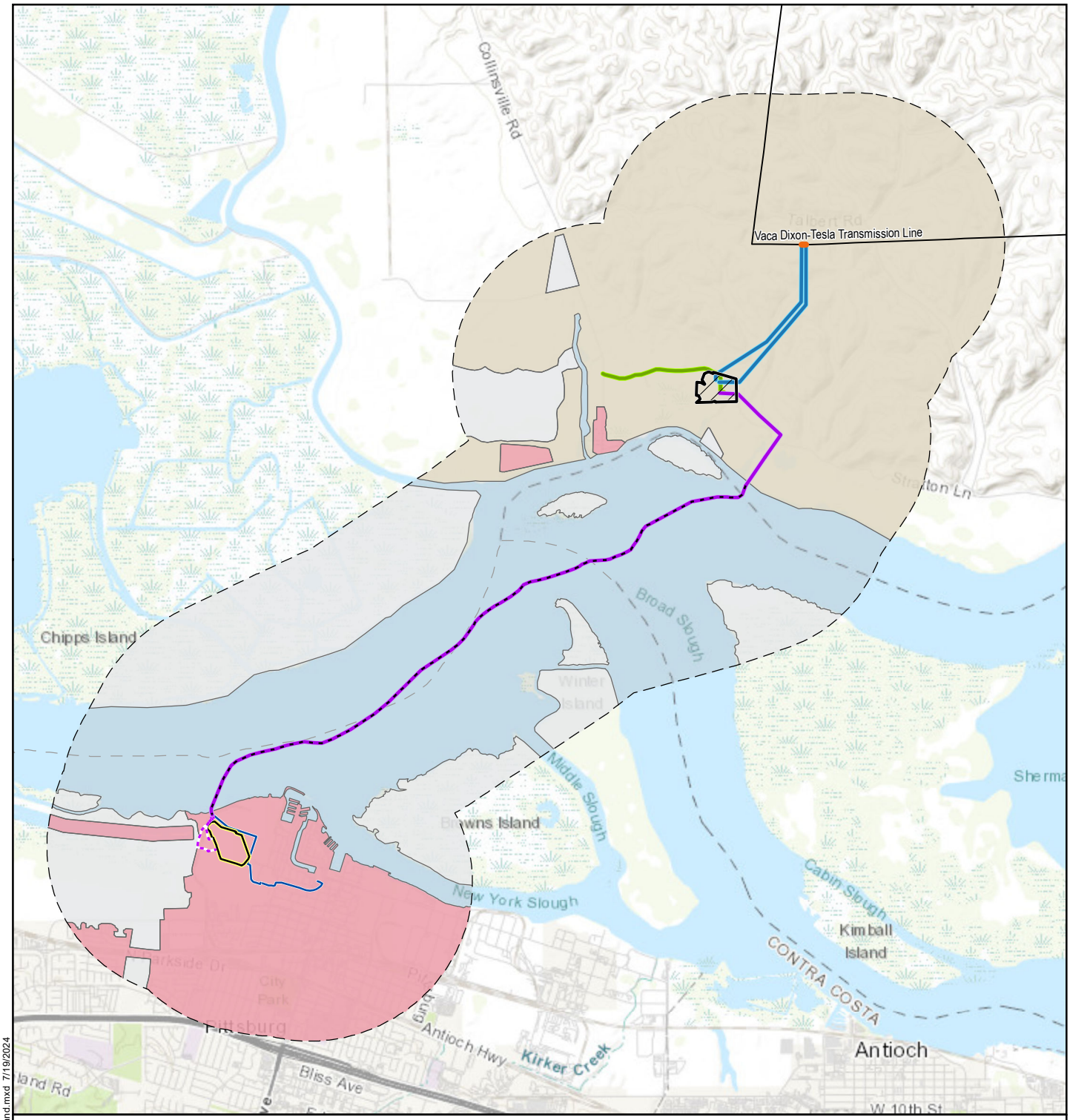

Figure 5.2-1: California Important Farmland in the Proposed Project Area

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- 1-Mile Buffer
- Grazing Land
- Other Land
- Urban and Built-Up Land

1:60,000

0 4,000 8,000 Feet

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5.2.2.2 State

5.2.2.2.1 Williamson Act

The California Land Conservation Act of 1965 (Williamson Act) (CGC § 51200 et seq.) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value.

The Williamson Act also allows local governments to establish agricultural preserves, which are parcels of land set aside for agricultural uses (CGC § 51230). These parcels are a minimum of 100 acres and are typically not located in areas where public utility improvements and associated land acquisitions may be necessary.

The Williamson Act declares that agricultural land parcels will be large enough to sustain their agricultural use if the land is at least 10 acres in the case of prime agricultural land, or at least 40 acres in the case of land that is not prime agricultural land (CGC § 51222). Although the Williamson Act does not specify compatible land uses for property located adjacent to contract lands or agricultural preserves, it does state that cities and counties must determine compatible land use types while recognizing that temporary or permanent population increases frequently impair or hamper agricultural operations.

5.2.2.2.2 California Government Code

CGC Section 51238 includes the provisions related to the Williamson Act that state the following:

> "Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve."

5.2.2.2.3 Farmland Mapping and Monitoring Program

The California DOC, under the Division of Land Resource Protection, has established the FMMP to monitor the conversion of the state's farmland to and from agricultural use. The FMMP maps agriculturally viable lands and designates specific categories including Prime Farmland, Unique Farmland, Non-Prime Farmland, or Farmland of Statewide Importance. The California DOC prepares and maintains an automated map and database system to record and report changes in the use of agricultural lands every 2 years on even-numbered calendar years (California DOC 2023).

5.2.2.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Contra Costa County, Sacramento County, Solano County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

5.2.2.3.1 Contra Costa County General Plan

The Conservation Element of the Contra Costa County General Plan details goals and policies that encourage the preservation and enhancement of agricultural resources in the county (Contra Costa County 2000). The Contra Costa County Conservation Element does not contain any agricultural policies relevant to the Proposed Project.

5.2.2.3.2 Sacramento County General Plan

The Agricultural Element of the Sacramento County General Plan outlines objectives and policies that aim to protect important farmlands from conversion and encroachment and conserve agricultural resources (Sacramento County 2019). The Sacramento County Agricultural Element does not contain any agricultural policies relevant to the Proposed Project.

5.2.2.3.3 Solano County General Plan

The Agriculture Element of the Solano County General Plan identifies policies to preserve existing agricultural communities, promote agricultural businesses, and maintain Solano County's agricultural identity. The following policies from the Solano County Agriculture Element are relevant to the Proposed Project (Solano County 2008):

- AR.G-2: Preserve and protect the county's agricultural lands as irreplaceable resources for present and future generations.
- AR.G-5: Reduce conflict between agricultural and nonagricultural uses in Agriculture-designated areas.

5.2.2.3.4 Solano County Zoning Code

Article II of the Solano County zoning code details the allowable uses in agricultural districts crossed by the Proposed Project. Zoning code information is provided below (Solano County 2023b):

- 28.21.20 Agricultural District Land Uses and Permit Requirements: A pipeline, transmission, or distribution line in a ROW is an allowable use. A utility facility or infrastructure outside of a ROW requires a use permit.

- 28.22.20 Suisun Marsh Agricultural District Land Uses and Permit Requirements: A pipeline, transmission, or distribution line in a ROW is an allowable use. A utility facility or infrastructure outside of a ROW requires a use permit.

5.2.2.3.5 City of Pittsburg General Plan

The City of Pittsburg General Plan does not contain any agricultural policies relevant to the Proposed Project (City of Pittsburg 2001).

5.2.3 Impact Questions

5.2.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For agriculture and forestry resources, the CEQA Environmental Checklist asks if the Proposed Project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

- Conflict with existing zoning for agricultural use, or a Williamson Act contract?

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

- Result in the loss of forest land or conversion of forest land to non-forest use?

- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

5.2.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA Impact Questions required for Agriculture and Forestry Resources.

5.2.4 Impact Analysis

5.2.4.1 Agriculture and Forestry Impact Analysis

5.2.4.1.1 Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would not require the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line in Solano County would be on lands designated as Grazing Land by the California DOC FMMP. The proposed LSPGC 230 kV Submarine Segment would be constructed in the Delta and not on agricultural land. The proposed LSPGC 230 kV Underground Segment and LSPGC Telecommunications Line would be on City of Pittsburg lands defined as Urban and Built-up Land by the California DOC FMMP. Therefore, no portion of the LSPGC and PG&E Proposed Project components would occur on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be converted as a result of construction or O&M activities associated with the LSPGC and PG&E Proposed Project components, and no impact would occur.

5.2.4.1.2 Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would not cross any parcels with existing Williamson Act contracts, as shown in Figure 5.2-2: Williamson Act Contract Properties in the Proposed Project Area. Therefore, the LSPGC and PG&E Proposed Project components would not conflict with any existing Williamson Act contracts during construction or O&M of the Proposed Project, and there would be no impact.

The proposed LSPGC Collinsville Substation and PG&E 12 kV Distribution Line would be located on Solano County land zoned as ASM-160. The proposed LSPGC Collinsville Substation would not conflict with the ASM-160 zone as an electrical substation is an allowable use in ASM-160 zoning districts provided it receives a Solano County-issued use permit and marsh development permit. The proposed LSPGC 230 kV Overhead Segment, LSPGC 230 kV Submarine Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be located on land or in water zoned as A-160 by the County of Solano. The Proposed Project would not conflict with the A-160 zone, as utility infrastructure is allowed in A-160 zoning districts provided it receives a Solano County-issued use permit. Although the LSPGC and PG&E Proposed Project components would require permits to be constructed in Solano County

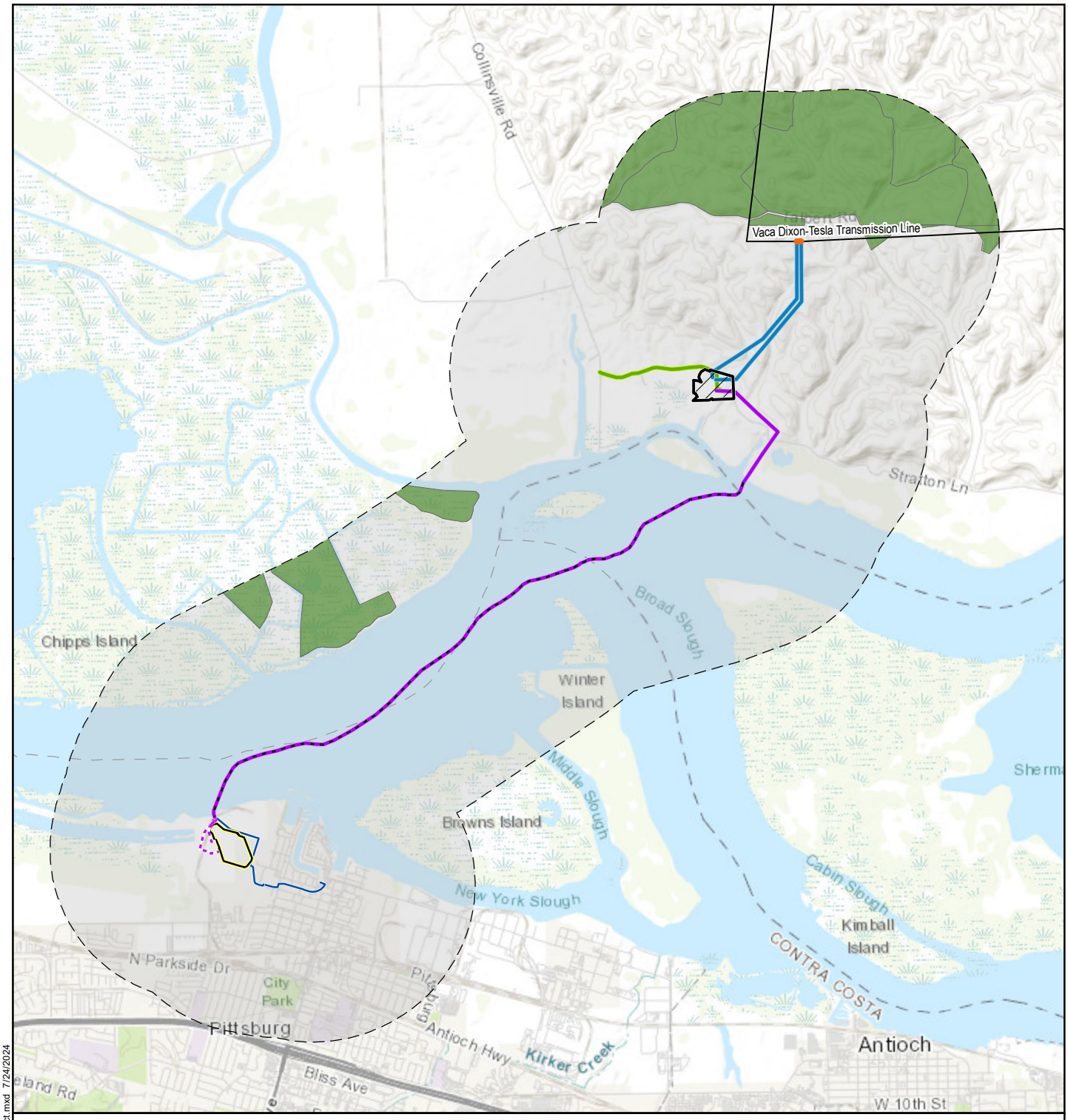

Figure 5.2-2: Williamson Act Contract Properties in the Proposed Project Area

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- 1-Mile Buffer
- Williamson Act Properties

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agricultural zoning districts, electric transmission facilities that are regulated by the CPUC are not subject to local land use and zoning regulations or discretionary permits pursuant to CPUC GO 131-D, Section XIV.B. Therefore, the LSPGC and PG&E Proposed Project components would not conflict with existing zoning for agricultural use. O&M activities would take place within a new ROW and would have no effect on local zoning. No impact would occur.

5.2.4.1.3 Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. No areas of forest land, timberland, or timberland zoned Timberland Production are located in the vicinity of the LSPGC and PG&E Proposed Project components. The LSPGC and PG&E Proposed Project components would not conflict with the zoning or cause the rezoning of forest lands or result in the conversion of timberland as none are present in the vicinity of these components. Therefore, no impact would occur.

5.2.4.1.4 Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. No areas of forest land are located in the vicinity of the LSPGC and PG&E Proposed Project components. The LSPGC and PG&E Proposed Project components would not result in the loss or conversion of forest land to non-forest use as no areas of forest land are present in the vicinity of these components. Therefore, no impact would occur.

5.2.4.1.5 Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. As discussed previously, the LSPGC and PG&E Proposed Project components would not result in the temporary or permanent loss of forest land, as no forest lands occur in the vicinity of these components. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be converted to non-agricultural use as no portion of the LSPGC and PG&E Proposed Project components would occur on lands with these designations.

O&M of the Proposed Project would not result in the conversion of farmland or forest land. Stormwater and any potential pollutants or hazardous materials generated at the proposed LSPGC Collinsville Substation would be retained on site or disposed of at properly licensed

facilities and would not affect the adjacent agricultural uses. Therefore, O&M activities would not have any adverse impact on agricultural activities.

The LSPGC and PG&E Proposed Project components would not impact any forest land, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and would not involve other changes to the existing environment that would potentially result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use or conversion of forest land to non-forest use. Therefore, no impact would occur.

5.2.4.2 Prime Farmland Soil Impacts

The LSPGC and PG&E Proposed Project components would have no impact on Prime Farmland as no Prime Farmland is in the vicinity of these components.

5.2.4.3 Williamson Act Impacts

The LSPGC and PG&E Proposed Project components would not conflict with any Williamson Act contract properties as they would not cross any land under the Williamson Act.

5.2.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures suggested for Agriculture and Forestry Resources.

5.2.6 Applicant-Proposed Measures

5.2.6.1 Agriculture and Forestry Resources Applicant-Proposed Measures

No applicant-proposed measures (APMs) would be implemented for agriculture and forestry resources because no impact would occur.

5.2.7 PG&E Construction Measures

5.2.7.1 Agriculture and Forestry Resources PG&E Construction Measures

No Construction Measures would be implemented for agriculture and forestry resources because no impact would occur.

5.2.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to agricultural and forestry resources associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not require the conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to non-agricultural use; would not result in the loss of forest land or conversion of forest land to non-forest use; and would not conflict with an existing Williamson Act contract. No additional Mitigation Measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.3 AIR QUALITY

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

This section describes the air quality in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.3.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.3.1.1 Air Quality Plans

The State of California has 35 specific air districts, which are each responsible for ensuring that criteria air pollutant (CAP) emissions meet the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Air quality is managed

by air districts through monitoring and management of air basins. Air quality compliance and implementation of planning documents is therefore addressed at the air basin level. Three designations can be applied to an area for a particular CAP:

- **Nonattainment:** This designation applies when standards have not been met.
- **Attainment:** This designation applies when standards are achieved.
- **Unclassified:** This designation applies when there is not sufficient monitoring data to determine attainment or nonattainment.

Air basins that exceed either the NAAQS or the CAAQS for any CAPs are designated as nonattainment areas for that pollutant. California created the State Implementation Plan (SIP) to provide control measures needed to attain ambient air quality standards.

The Proposed Project would predominantly be situated within the San Francisco Bay Area Air Basin (SFBAAB) under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), with a small portion of the proposed LSPGC 230 kV Submarine Cable within the Sacramento Valley Air Basin under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Air quality in this area is determined by topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. Ozone (O_3) and particulate matter (PM) are the major regional air pollutants of concern in the San Francisco Bay Area. The climate in the Proposed Project area is influenced by the mixture of cool air that flows from the Pacific Ocean and San Francisco Bay to lower areas in Solano County, with warm summer air from the Sacramento Valley. The resulting temperature and atmospheric pressure differences generate high wind speeds.

It is the responsibility of the BAAQMD and SMAQMD to ensure that the CAAQS and NAAQS are achieved and maintained in their geographical jurisdictions. Health-based air quality standards have been established for the following CAPs:

- O_3,
- Carbon monoxide (CO),
- Nitrogen dioxide (NO_2),
- PM with a mean diameter of less than 10 microns (PM_{10}),
- PM with a mean diameter of less than 2.5 microns ($PM_{2.5}$),
- Sulfur dioxide (SO_2), and
- Lead (Pb).

Furthermore, California has set additional standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride (C_2H_3Cl), and visibility-reducing particles (VRP). Attainment of the CAAQS and NAAQS protects sensitive receptors and the public from CAPs that are known to have adverse human health effects. As summarized in Table 5.3-1: Attainment Status within the BAAQMD and SMAQMD, the Proposed Project area is currently designated as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. Section 5.3.2.1.4 Local discusses plans that the BAAQMD and SMAQMD have prepared to address O_3, PM_{10}, and/or $PM_{2.5}$ within their jurisdictions.

Table 5.3-1: Attainment Status within the BAAQMD and SMAQMD

CAP	BAAQMD		SMAQMD	
	State	Federal	State	Federal
O_3	Nonattainment	Nonattainment	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment	Attainment	Nonattainment
PM_{10}	Nonattainment	Unclassified	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A	Attainment	N/A
Pb	Attainment	Unclassified/Attainment	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A	Unclassified	N/A
VRP	Unclassified	N/A	Unclassified	N/A

Source: CARB 2024b

5.3.1.2 Air Quality

Air quality influences public health and welfare, the economy, and quality of life. Air pollutants can additionally adversely affect the production and quality of agricultural crops, visibility, native vegetation, and buildings and structures.

Within the Proposed Project area, O_3, PM_{10}, and $PM_{2.5}$ are the CAPs of primary concern due to the BAAQMD's and SMAQMD's nonattainment status. O_3 is formed in the atmosphere by photo-chemical reactions between reactive organic compounds and nitrogen oxides (NO_x) that are emitted throughout the air basin and in areas upwind of the air basin. PM tends to be emitted either directly from dust-generating sources or can be formed in the atmosphere as a precipitate of sulfur oxides or NO_x. Sources of these pollutants and their precursors include mobile sources (e.g., automobiles and trucks), area sources (e.g., farming activities or use of consumer products), and stationary sources (e.g., industrial facilities) (United States [U.S.] Environmental Protection Agency [EPA] 2024). Table 5.3-2: NAAQS and CAAQS Exceedances identifies the number of days that the NAAQS and CAAQS were exceeded in 2020, 2021, and 2022 in the vicinity of the Proposed Project.

Additionally, the BAAQMD and SMAQMD operate a system of air monitoring stations, which analyze air quality data on an hourly basis throughout their respective jurisdictions. The Fairfield Chadbourne Road Air Monitoring Station, located approximately 15 miles northwest of the proposed LSPGC Collinsville Substation, is the nearest station to the Proposed Project that monitors for O_3; and the Concord Air Monitoring Station, located approximately 10 miles southwest of PG&E's existing Pittsburg Substation, is the nearest station to the Proposed Project that monitors for $PM_{2.5}$. The Vacaville-Merchant Street Air Monitoring Station, located approximately 20 miles northwest of the proposed LSPGC Collinsville Substation, is the nearest

station to the Proposed Project that monitors for PM_{10}. Table 5.3-3: Ambient Air Quality Summary identifies the maximum measured concentrations at these stations between 2021 and 2023.

Table 5.3-2: NAAQS and CAAQS Exceedances

CAP Standard	2020	2021	2022
NAAQS			
O_3 – 1-hour standard	0	0	0
O_3 – 8-hour standard	3	2	0
PM_{10} – 24-hour standard	--	0	0
$PM_{2.5}$ – 24-hour standard	16.2	2	0
CAAQS			
O_3 – 1-hour standard	1	0	0
O_3 – 8-hour standard	3	2	0
PM_{10} – 24-hour standard	--	--	0

Source: California Air Resources Board (CARB) 2024a
Notes:

- -- = Information not available
- O_3 data from the Fairfield-Chadbourne Road Air Monitoring Station
- PM_{10} data from the Vacaville-Merchant Street Air Monitoring Station operated by the Yolo-Solano Air Quality Management District
- $PM_{2.5}$ data from the Concord Air Monitoring Station

Table 5.3-3: Ambient Air Quality Summary

CAP	Closest Monitoring Site	Averaging Time	CAAQS	NAAQS	2021	2022	2023
O_3	Fairfield-Chadbourne Road	1 Hour	0.090 ppm	--	0.093 ppm	0.081 ppm	0.078 ppm
		8 Hour	0.070 ppm	0.070 ppm	0.078 ppm	0.063 ppm	0.064 ppm
PM_{10}	Vacaville-Merchant Street	24 Hour	50 µg/m^3	150 µg/m^3	49 µg/m^3	35 µg/m^3	25 µg/m^3
$PM_{2.5}$	Concord	24 Hour	--	35 µg/m^3	97 µg/m^3	43 µg/m^3	77 µg/m^3

Sources: BAAQMD 2024a, U.S. EPA 2024a
Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter; -- = Information not available

5.3.1.3 Sensitive Receptor Locations

Some exposed population groups (e.g., children and people who are elderly or ill) can be especially vulnerable to airborne chemicals and irritants and are termed "sensitive receptors." In addition, due to sustained exposure durations, all persons located within residential areas are considered sensitive receptors. In general, sensitive receptor locations include, but are not limited to schools, hospitals, day care centers, convalescence homes, residential uses, places of worship, libraries, offices, city and county buildings, and outdoor recreational areas. The nearest sensitive receptors to the planned construction activities in Solano County are 18 residences along Collinsville Road. These residences are located approximately 0.4 mile south of the proposed PG&E 12 kV Distribution Line and approximately 1 mile southwest of the proposed LSPGC Collinsville Substation. In Contra Costa County, numerous residences, Marina Community Center, and St. Peter Martyr School would be located directly adjacent to the proposed LSPGC Telecommunications Line.

5.3.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.3.2.1 Regulatory Setting

5.3.2.1.1 Federal

Clean Air Act

The 1970 federal Clean Air Act (CAA) established ambient air quality standards for six pollutants—O_3, PM_{10}, CO, NO_2, SO_2, and Pb—that are known to have adverse impacts on human health and the environment. To protect human health and the environment, the U.S. EPA set primary and secondary maximum ambient thresholds for CAPs. The primary thresholds were set to protect human health, particularly for children and the elderly, as well as for individuals who suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further adverse effects on animals, crops, vegetation, and buildings. The NAAQS are the combined primary and secondary standards set by the U.S. EPA. The 1977 CAA Amendments required each state to develop and maintain a SIP for each CAP that exceeds the NAAQS for that pollutant. The SIP serves as a tool to reduce levels of pollutants known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was further amended to strengthen regulation of both stationary and mobile emission sources for the CAPs.

A new federal O_3 standard of 0.080 ppm was established in 1997 and was based on a longer averaging period (8 hours versus 1 hour), recognizing that prolonged exposure to O_3 is more damaging. In 2001, the U.S. EPA implemented new health-based NAAQS for O_3 and PM_{10}. In February 2007, the NAAQS for NO_2 was amended to lower the existing not-to-exceed 1-hour standard of 0.25 ppm to 0.18 ppm and established a new annual standard of 0.030 ppm. In March 2008, the U.S. EPA further lowered the 8-hour O_3 standard from 0.080 ppm to 0.075 ppm. The new federal standard for PM is based on finer particles ($PM_{2.5}$ versus PM_{10}), recognizing that $PM_{2.5}$ may remain in the lungs longer and contribute to greater respiratory illness. In October 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 ppm to 0.070 ppm.

In August 2022, the U.S. Congress passed the Inflation Reduction Act, which added seven new sections to the CAA (Sections 132 through 138), providing the U.S. EPA with over $41 billion to implement new programs. as well as increase the effectiveness and usability of existing ones.

5.3.2.1.2 State

California Air Resources Board

CARB sets the laws and regulations for air quality on the state level. The CAAQS are similar to the NAAQS and also restrict four additional contaminants. Table 5.3-4: Ambient Air Quality Standards identifies both the NAAQS and CAAQS. The following additional contaminants are regulated by CARB:

- VRP are particles in the air that obstruct visibility.
- Sulfates are salts of sulfuric acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.
- H_2S is a colorless, toxic, and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness and possibly death.
- C_2H_3Cl, also known as chloroethene, is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride.

California Clean Air Act

The California Clean Air Act of 1988 (CCAA) provided the framework for the management of air quality throughout the state. The CCAA requires local air quality management districts to develop and implement strategies to attain the CAAQS. For some pollutants, the CAAQS are more stringent than the NAAQS, and the CCAA mandated that the air quality management districts prepare air quality management plans that specify how both the federal and state standards would be met. The CAAQS are listed in Table 5.3-4: Ambient Air Quality Standards.

CARB enforces the CAAQS and works with the State's Office of Environmental Health Hazard Assessment in identifying toxic air contaminants (TACs) and enforcing rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987. Enacted to identify TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, this law requires that a business or other establishment identified as a significant source of toxic emissions must provide the affected population with information about health risks posed by those emissions.

Table 5.3-4: Ambient Air Quality Standards

Pollutant	Average Time	CAAQS[1]		NAAQS[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
O_3[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet photometry	--	--	--
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)	Same as Primary Standard	Ultraviolet Photometry
PM_{10}[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--	--	--
$PM_{2.5}$[9]	24 Hour	--	--	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12.0 µg/m^3	Gravimetric or Beta Attenuation	9.0 µg/m^3	15 µg/m^3	
CO	8 Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry	9 ppm (10 mg/m^3)	--	Non-Dispersive Infrared Photometry
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
NO_2[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.100 ppm[8] (188 µg/m^3)	--	

Pollutant	Average Time	CAAQS[1]		NAAQS[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
SO_2[11]	Annual Arithmetic Mean	--	--	0.030 ppm[10] (for Certain Areas)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	0.14 ppm[10] (for Certain Areas)[9]	--	
	3 Hour	--	--	--	0.5 ppm (1,300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	--	
Pb[12, 13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	--	--	--
	Calendar Quarter	--	--	1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	--	--	0.15 µg/m^3		
VRP	8 Hour	See Note 14		--		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
H_2S	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
C_2H_3Cl[12]	24 Hour	0.010 ppm (26 µg/m^3)	Gas Chromatography			

Source: Western Regional Climate Center 2018

Acronyms: ppm = parts per million; µg/m^3 = micrograms per cubic meter; -- = Not applicable

Notes:

1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and PM (PM_{10}, $PM_{2.5}$, and VRP) are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 NAAQS (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure that can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used, but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.

[8] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] In February 2024, U.S. EPA lowered the federal primary $PM_{2.5}$ annual standard to 9.0 µg/m^3 from the 12.0 µg/m^3 standard set in 2012. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[12] CARB has identified Pb and C_2H_3Cl as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for Pb was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[14] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

5.3.2.1.3 Regional

Bay Area Air Quality Management District

The BAAQMD has jurisdiction over all of or portions of the nine counties—Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma—that surround the San Francisco Bay Area. The following rules established by the BAAQMD to regulate air quality are relevant to the Proposed Project:

- Rule 6-1 – General Requirements: Limits the quantity of particulate matter through the establishment of limitations on emission rates, emission concentrations, visible emissions, and opacity, including:
  - A person shall not emit from any source for a period or aggregate periods of no more than 3 minutes in any hour a visible emission that is as dark or darker than No. 1 in the Ringelmann Chart or to obscure an observer's view to an equivalent or greater degree.
  - A person shall not emit from any source for a period or aggregate periods of no more than 3 minutes in any hour an emission equal to or greater than 20-percent opacity.
  - A person shall not emit from any source for a period or aggregate periods of no more than 3 minutes in any hour a visible emission that is as dark or darker than No. 2 in the Ringelmann Chart, or to obscure an observer's view to an equivalent or greater degree, or be equal to or greater than 40 percent opacity from internal combustion engines of less than 25 liters displacement.
  - No person shall emit particles from any operation in sufficient number to cause annoyance to any other person where the particles are large enough to be visible as individual particles at the emission point, or of such size and nature as to be visible individually as incandescent particles. This Section shall only apply if such particles fall on real property other than the property of the person responsible for the emission.
- Rule 6-6 – Prohibition of Trackout: Limits the quantity of particulate matter through control of trackout onto paved public roads.

2022 CEQA Guidelines

The BAAQMD's California Environmental Quality Act (CEQA) Guidelines were developed to assist lead agencies in evaluating air quality and climate impacts from proposed land use projects and plans in the SFBAAB. The guidelines are designed to provide BAAQMD-recommended procedures for evaluating potential air quality and climate impacts during the environmental review process. More specifically, the guidelines establish numerical thresholds that can be used to evaluate a project's potential impacts, as summarized in Table 5.3-5: BAAQMD CAP Mass Significance Thresholds.

Table 5.3-5: BAAQMD CAP Mass Significance Thresholds

CAP	Average Daily Construction Emissions (pounds)	Operational Emissions	
		Average Daily Emissions (pounds)	Annual Emissions (tons per year)
NO_X	54	54	10
Reactive organic gas (ROG)	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10

Source: BAAQMD 2024b

Note: No numerical threshold exists for construction-related emissions of fugitive dust. The BAAQMD strongly recommends implementing all feasible fugitive dust management practices as presented in its CEQA Guidelines.

Bay Area 2017 Clean Air Plan: Spare the Air, Cool the Climate

The Bay Area 2017 Clean Air Plan: Spare the Air, Cool the Climate was adopted April 19, 2017, and replaces the previous 2010 Clean Air Plan. The updated document provides a comprehensive plan to improve the air quality and protect public health in the San Francisco Bay Area, with an emphasis on climate change and its effects. This plan defines control strategies that the BAAQMD will implement to reduce emissions of harmful pollutants, reduce exposure of communities to air pollutants, and reduce greenhouse gas (GHG) emissions; and sets specific goals to accomplish by the year 2050. The 2017 Clean Air Plan lists four key priorities necessary to protect public health and the climate: reduce CAPs and TACs, reduce emissions of "Super-GHGs," reduce demand for fossil fuels, and decarbonize the energy system.

Bay Area 2005 Ozone Strategy

The Bay Area 2005 Ozone Strategy was prepared in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments. This plan provides a roadmap showing how the San Francisco Bay Area will achieve compliance with the state 1-hour standard for O_3. This plan also addresses national O_3 standards, climate change, PM emissions, and the environmental review process.

Particulate Matter 2.5 Nonattainment (24-hour)

The BAAQMD is currently in nonattainment status for 24-hour $PM_{2.5}$ and is working closely with local, state, and federal partners to implement key strategies that address this pollutant. Some of these strategies include regulations and permit requirements for new construction to limit PM emissions, restrictions on wood-burning activities during times when the "Spare the Air Alert" is activated, and public outreach activities to solicit input on PM planning. Additionally, in fall of 2019, the BAAQMD's Advisory Council began convening a symposium series on $PM_{2.5}$ to facilitate a discussion with nationally recognized scientists and stakeholders to identify the most effective measures to further protect public health.

Sacramento Municipal Air Quality Management District

The SMAQMD has jurisdiction over Sacramento County and has established the following rules to regulate air quality are relevant to the Proposed Project:

- Rule 201 General Permit Requirements: The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain a permit.

- Rule 401 Ringelmann Chart: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is:

  – As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
  – Of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring system to a degree equal to or greater than does smoke.

- Rule 402 Nuisance: A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- Rule 403 Fugitive Dust: A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Reasonable precautions shall include, but are not limited to:

  – Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the construction of roadways or the clearing of land.

  – Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts;

  – Other means approved by the Air Pollution Control Officer.

- Rule 404 Particulate Matter: A person shall not discharge into the atmosphere from any source particulate matter in excess of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot).

- Rule 441 Organic Solvents: The purpose of this rule is to limit the emissions from the use of organic solvents. This rule also specifies the reduction, monitoring, reporting, and disposal requirements.

2022 CEQA Guidelines

The SMAQMD's Guide to Air Quality Assessment in Sacramento County provides methods for the analysis and review of CAP emissions from development projects located in the district's jurisdiction. The guide provides suggested methods for quantifying emissions, required best management practices (BMPs) for reducing project emissions, and numerical thresholds that can be used to evaluate a project's potential impacts, as summarized in Table 5.3-6: SMAQCD CAP Mass Significance Thresholds.

Table 5.3-6: SMAQCD CAP Mass Significance Thresholds

CAP	Construction Emissions		Operational Emissions	
	Maximum Daily (pounds)	Annual (tons)	Maximum Daily (pounds)	Annual (tons)
NO_X	85	None	65	None
ROG	None	None	65	None
PM_{10}	80	14.6	80	14.6
$PM_{2.5}$	82	15	82	15

Source: SMAQMD 2024a

Note: PM_{10} and $PM_{2.5}$ thresholds during construction and O&M only apply if all feasible best available control technology/BMPs are applied. If these measures are not applied, the threshold is zero.

2015 Ozone National Ambient Air Quality Standard State Implementation Plan

The 2015 Ozone National Ambient Air Quality Standard State Attainment Plan outlines the SMAQMD's efforts to comply with the 8-hour NAAQS for O_3. This plan also documents the district's progress toward attainment. The SMAQMD has set an attainment deadline of August 3, 2033.

5.3.2.1.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county regulations are not applicable as Solano, Sacramento, and Contra Costa counties do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, and programs for informational purposes.

5.3.2.2 Air Permits

The Proposed Project does not propose any stationary emission source equipment and would, therefore, not require any air quality permits.

5.3.3 Impact Questions

5.3.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For air quality, the CEQA Environmental Checklist asks if the Proposed Project would:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Result in a cumulatively considerable net increase of any CAP for which the project region is nonattainment under an applicable federal or state ambient air quality standard?
- Expose sensitive receptors to substantial pollutant concentrations?
- Result in other emissions (e.g., those leading to odors) adversely affecting a substantial number of people?

5.3.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for air quality.

5.3.4 Impact Analysis

5.3.4.1 Air Quality Impact Analysis

5.3.4.1.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

Construction

LSPGC and PG&E Components

No Impact. The BAAQMD and SMAQMD are the agencies responsible for managing local air quality, administering California and federal air pollution control programs, and ensuring attainment and maintenance of the ambient air quality standards. To this end, the districts have established air quality plans to address nonattainment areas. A project would be considered inconsistent with an air quality plan or applicable attainment plan if it could cause population and/or employment growth or growth in vehicle miles traveled in excess of the growth forecasts included in an applicable air quality plan or attainment plan. Because construction of the LSPGC and PG&E Proposed Project components would not result in population growth, it would not conflict with the growth projections used in the development of the applicable air quality plans. Section 5.14 Population and Housing provides a more detailed discussion of economic and population growth associated with the LSPGC and PG&E Proposed Project components.

Annual emissions associated with LSPGC and PG&E Proposed Project component construction would be temporary and would represent a small fraction of the regional emission inventories included in the applicable air quality plans. Construction of the LSPGC and PG&E Proposed

Project components would be performed in compliance with applicable air district rules and regulations, ensuring that activities would be consistent with air district efforts to achieve attainment and maintenance of the standards. The Proposed Project-related annual emissions occurring in compliance with these rules and regulations would not conflict with or obstruct implementation of the applicable air quality plans.

Because the LSPGC and PG&E Proposed Project components' annual construction emissions are not expected to substantially contribute to regional emissions and would not conflict with the growth projections in the applicable air quality plans, and because construction of these components would be performed in compliance with applicable air district rules and regulations, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plans. As a result, there would be no impact.

Operations and Maintenance

LSPGC Components

No Impact. The LSPGC Proposed Project components would be operated by LSPGC's control center in Austin, Texas and LSPGC's maintenance/technical staff, utilizing existing LSPGC staff and outside contractor resources for maintenance and emergency response. The Proposed Project would be incorporated into LSPGC's existing programs and existing equipment, experienced staff, and trusted contractors to provide operational and cost efficiencies with reduced risks. The Proposed Project would also be monitored by the California Independent System Operator's (CAISO's) control center in Folsom, California; and CAISO would have operational control of the proposed LSPGC Collinsville Substation facility with authority to direct LSPGC's control center. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted. A small, specialized team would be utilized to perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance.

Overall, the LSPGC Proposed Project components would result in nominal equipment and vehicle use during O&M activities, such as maintenance and inspection trips. These activities would result in a minor incremental increase in regional emissions. As a result, these emissions would not affect the inventories included in the applicable air quality plans and would be consistent with BAAQMD and SMAQMD efforts to achieve attainment and maintenance of the standards. Therefore, no impact would occur from O&M of the LSPGC Proposed Project components.

PG&E Components

No Impact. The operation of the proposed PG&E 500 kV Interconnection would not require the hiring of full-time staff. Maintenance and emergency response would be carried out by existing PG&E employees. The increased O&M activities would represent a minor incremental increase in regional emissions. As a result, these emissions would not affect the inventories included in the applicable air quality plans and would be consistent with BAAQMD efforts to achieve attainment and maintenance of the standards. Therefore, no impact would occur from O&M of the PG&E Proposed Project components.

5.3.4.1.2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Construction

LSPGC Components

Less-than-Significant Impact. Construction of the LSPGC Proposed Project components would require the use of off-road construction equipment, on-road vehicles, boats, and light-duty helicopters, as itemized in Table 3-9: Proposed Construction Equipment and Workforce in Chapter 3 – Project Description. These vehicles would generate CAP emissions that could contribute to existing or projected violations of the ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$. Table 5.3-7: BAAQMD Average Daily Construction Emissions summarizes the anticipated uncontrolled average daily construction emissions for each year of construction and compares them to the applicable thresholds. Attachment 5.3-A: Air Quality and GHG Calculations documents the methods used to quantify the anticipated emissions.

Table 5.3-7: BAAQMD Average Daily Construction Emissions

Construction Year	Average Daily Emissions (pounds per day)				
	ROG	NO_x	SO_2	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Uncontrolled Emissions					
2026	12.4	**113.8**	0.4	4.5	3.8
2027	14.7	**123.8**	0.3	6.0	5.0
2028	5.1	46.8	0.1	2.3	2.0
Threshold	54	54	--	82	54
Exceeded?	No	**Yes**	N/A	No	No
Controlled Emissions					
2026	4.9	53.5	0.4	2.2	1.7
2027	7.6	51.4	0.3	3.4	2.6
2028	2.3	16.6	0.1	1.2	1.0
Threshold	54	54	--	82	54
Exceeded?	No	No	N/A	No	No

Notes: Values shown in bold text exceed the applicable threshold. Emissions from both LSPGC and PG&E Proposed Project components within the BAAQMD's jurisdiction are accounted for.

As shown in Table 5.3-7: BAAQMD Average Daily Construction Emissions, uncontrolled average daily emissions from LSPGC and PG&E components of the Proposed Project would exceed applicable thresholds for NO_x in 2026 and 2027. All other emissions would be below applicable thresholds. To reduce these construction emissions from the LSPGC Proposed Project components, applicant-proposed measure (APM) AIR-1 would be implemented. APM AIR-1 would require all construction equipment with a rating between 100 and 750 horsepower (hp) to

comply with U.S. EPA Tier 4 non-road engine standards, where equipment is available. Table 5.3-7: BAAQMD Average Daily Construction Emissions also summarizes the anticipated emissions with APM AIR-1 implemented for the construction of LSPGC Proposed Project components and PG&E's Construction Measure (CM) AIR-1 implemented for the construction of PG&E Proposed Project components. PG&E's CM AIR-1 is described in the subsequent discussion under PG&E Components. As shown, controlled construction emissions from both the LSPGC and PG&E Proposed Project components would not exceed the significance threshold for any CAPs. Therefore, construction of the LSPGC Proposed Project components within the BAAQMD would not result in a cumulatively considerable net increase of CAPs.

As noted in Table 5.3-5: BAAQMD CAP Mass Significance Thresholds, the BAAQMD does not have a numerical threshold to evaluate fugitive dust emissions from construction projects. Instead, the BAAQMD requires projects to implement all feasible BMPs to reduce fugitive dust emissions. APM AIR-2 would require that fugitive dust control measures consistent with BAAQMD requirements be implemented as needed during construction of the LSPGC Proposed Project components. These requirements include the following:

- Requiring exposed surfaces to be watered,
- Covering haul trucks transporting loose material,
- Cleaning trackout daily,
- Requiring trucks to maintain a speed limit of 15 miles per hour (mph) on unpaved Proposed Project-specific construction routes and within temporary work areas,
- Suspending earth-moving activities when average windspeeds exceed 20 mph,
- Washing vehicle tires prior to leaving the site, and
- Stabilizing unpaved access roads.

With the implementation of APM AIR-2, fugitive dust would be controlled, and impacts would be less than significant within the BAAQMD.

Construction activities within the SMAQMD would be limited to the installation of the cables associated with the proposed LSPGC 230 kV Submarine Segment. Maximum daily emissions associated with this phase of construction have been compared to the applicable mass emissions thresholds in Table 5.3-8: SMAQMD Maximum Daily Construction Emissions.

As shown in Table 5.3-8: SMAQMD Maximum Daily Construction Emissions, all emissions would be below the applicable thresholds. As noted in the SMAQMD's guidelines, all applicable basic construction emission control practices must be implemented for these thresholds to apply. APM AIR-2, which would control fugitive dust, has been designed to implement these control practices as needed from the SMAQMD. Therefore, a cumulatively considerable net increase in emissions would not occur within the SMAQMD.

Table 5.3-8: SMAQMD Maximum Daily Construction Emissions

Construction Year	Maximum Daily Emissions (pounds per day)				
	ROG	NO_x	SO_2	PM_{10}	$PM_{2.5}$
Uncontrolled Emissions					
2027	8.4	74.8	0.2	4.2	2.5
Threshold	--	85	--	80	82
Exceeded?	N/A	No	N/A	No	No
Controlled Emissions					
2027	2.4	14.1	0.2	0.5	0.4
Threshold	--	85	--	80	82
Exceeded?	N/A	No	N/A	No	No

PG&E Components

Less-than-Significant Impact. Construction of the PG&E Proposed Project components would require the use of off-road construction equipment, on-road vehicles, boats, and light-duty helicopters, as itemized in Table 3-9: Proposed Construction Equipment and Workforce in Chapter 3 – Project Description. These vehicles would generate CAP emissions that could contribute to existing or projected violations of the ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$. Table 5.3-7: BAAQMD Average Daily Construction Emissions summarizes the anticipated uncontrolled average daily construction emissions, including emissions from the PG&E Proposed Project components, for each year of construction and compares them to the applicable thresholds. Attachment 5.3-A: Air Quality and GHG Calculations documents the methods used to quantify the anticipated emissions.

As shown in Table 5.3-7: BAAQMD Average Daily Construction Emissions, uncontrolled average daily emissions from LSPGC and PG&E Proposed Project components would exceed applicable thresholds for NO_x in 2026 and 2027. All other emissions would be below applicable thresholds. To reduce construction emissions for the PG&E Proposed Project components, CM AIR-1 would be implemented. CM AIR-1 would require all construction equipment with a rating between 100 and 750 hp to comply with U.S. EPA Tier 4 non-road engine standards, where equipment is available. Table 5.3-7: BAAQMD Average Daily Construction Emissions also summarizes the anticipated emissions with CM AIR-1 implemented for the construction of PG&E Proposed Project components and the previously described APM AIR-1 implemented for construction of LSPGC Proposed Project components. As shown, controlled construction emissions from both the LSPGC and PG&E Proposed Project components would not exceed the significance threshold for any CAPs. Therefore, construction of the PG&E Proposed Project components within the BAAQMD would not result in a cumulatively considerable net increase of CAPs.

As noted in Table 5.3-5: BAAQMD CAP Mass Significance Thresholds, the BAAQMD does not have a numerical threshold to evaluate fugitive dust emissions from construction projects. Instead, the BAAQMD requires projects to implement all feasible BMPs to reduce fugitive dust emissions. CM AIR-2 would require that fugitive dust control measures consistent with BAAQMD requirements be implemented during construction of the PG&E Proposed Project components. These requirements include the following:

- Requiring exposed surfaces to be watered,
- Covering haul trucks transporting loose material,
- Cleaning trackout daily,
- Requiring trucks to maintain a speed limit of 15 mph on unpaved Proposed Project-specific construction routes and within temporary work areas,
- Suspending earth-moving activities when average windspeeds exceed 20 mph,
- Washing vehicle tires prior to leaving the site, and
- Stabilizing unpaved access roads.

With the implementation of CM AIR-2, fugitive dust would be controlled and impacts would be less than significant within the BAAQMD.

Construction activities within the SMAQMD would be limited to the installation of the cables associated with the proposed LSPGC 230 kV Submarine Segment, and construction of the PG&E Proposed Project components would not occur within the SMAQMD.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As previously described, the LSPGC Proposed Project components would result in nominal equipment and vehicle use during O&M activities, such as maintenance and inspection trips. In addition, the proposed LSPGC Collinsville Substation would be unstaffed and controlled remotely. The anticipated annual emissions from the increase in regular O&M activities were estimated and summarized in Table 5.3-9: BAAQMD Annual O&M Emissions. As shown, the anticipated emissions would be well below all applicable BAAQMD thresholds, and impacts would be less than significant. Because the cables associated with the proposed LSPGC 230 kV Submarine Segment would not require regular maintenance, no O&M emissions would occur within the SMAQMD and no impact would occur.

PG&E Components

Less-than-Significant Impact. As previously described, O&M activities associated with the PG&E Proposed Project components would be similar to those currently performed by PG&E for its existing facilities. The anticipated annual emissions within the BAAQMD from an incremental increase in regular O&M activities were estimated and are summarized in Table 5.3-9: BAAQMD Annual O&M Emissions. Because the PG&E Proposed Project components would be located in the jurisdiction of the BAAQMD, no O&M emissions associated with these components would occur within the SMAQMD. As shown, the anticipated emissions would be well below all applicable BAAQMD thresholds, and impacts would be less than significant.

Table 5.3-9: BAAQMD Annual O&M Emissions

Activity	Annual Emissions (tons per year)				
	ROG	NO_x	SO_2	PM_{10}	$PM_{2.5}$
LSPGC Components					
O&M	0.001	0.007	< 0.001	0.001	0.001
Threshold	10	10	--	15	10
Exceeded?	No	No	N/A	No	No
PG&E Components					
O&M	0.001	0.007	< 0.001	0.001	0.001
Threshold	10	10	--	15	10
Exceeded?	No	No	N/A	No	No

5.3.4.1.3 Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction

LSPGC Components

Less-than-Significant Impact. As described previously, the nearest sensitive receptors to the planned construction activities in Solano County are 18 residences along Collinsville Road. These residences are located approximately 1 mile southwest of the proposed LSPGC Collinsville Substation site. As shown in Table 5.3-7: BAAQMD Average Daily Construction Emissions, all emissions would be below applicable BAAQMD significance thresholds. With the exception of the proposed LSPGC Collinsville Substation, construction would be completed by multiple construction crews dispersed across the Proposed Project; therefore, the actual emissions that would be created at a single site would likely be lower than the overall Proposed Project emissions. In addition, APM AIR-2 would reduce fugitive dust emissions, and the implementation of APM AIR-1 would reduce CAP emissions from off-road equipment and on-road vehicle use. Impacts from pollutant concentrations would be less than significant due to the separation between construction activities and the sensitive receptor and the APMs that would be implemented to reduce emissions.

In Contra Costa County, numerous residences, Marina Community Center, and St. Peter Martyr School would be located directly adjacent to the proposed LSPGC Telecommunications Line. As shown in Table 5.3-7: BAAQMD Average Daily Construction Emissions, all emissions associated with the Proposed Project would be below applicable BAAQMD thresholds. The telecommunications line would be installed using horizontal directional drilling (HDD) techniques. This process would involve establishing limited construction work areas, spaced between 50 and 500 feet apart, where the drilling rig and associated equipment would operate. HDD activities would be limited in duration, lasting approximately 10 days at each site. Due to the limited construction equipment use, limited duration of activities in these locations,

implementation of APMs AIR-1 and AIR-2, and emissions below all applicable thresholds, impacts to sensitive receptors would be less than significant.

PG&E Components

Less-than-Significant Impact. As described previously, the nearest sensitive receptors to the planned construction activities in Solano County are 18 residences along Collinsville Road. These residences are located approximately 0.4 mile south of the proposed PG&E 12 kV Distribution Line. As shown in Table 5.3-7: BAAQMD Average Daily Construction Emissions, all emissions would be below applicable BAAQMD significance thresholds. Construction would be completed by multiple construction crews dispersed across the Proposed Project; therefore, the actual emissions that would be created at a single site would likely be lower than the overall Proposed Project emissions. In addition, CM AIR-2 would reduce fugitive dust emissions, and the implementation of CM AIR-1 would reduce CAP emissions from off-road equipment and on-road vehicle use. Impacts from pollutant concentrations would be less than significant due to the separation between construction activities and the sensitive receptor and the CMs that would be implemented to reduce emissions.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. As described previously, the nearest sensitive receptors to the Proposed Project in Solano County are 18 residences along Collinsville Road. These residences are located approximately 0.4 mile south of the proposed PG&E 12 kV Distribution Line and approximately 1 mile southwest of the proposed LSPGC Collinsville Substation. No other sensitive receptors would be located within 1,000 feet of the Proposed Project in Solano County. As shown in Table 5.3-9: BAAQMD Annual O&M Emissions, all emissions would be below applicable BAAQMD significance thresholds. Typical O&M activities would last less than a single day at each structure location, resulting in limited emissions in the vicinity of the sensitive receptor. Due to the limited sensitive receptors in the Proposed Project area, limited emissions associated with these activities, and short-term nature of O&M activities, no impact would occur.

In Contra Costa County, numerous residences, Marina Community Center, and St. Peter Martyr School would be located directly adjacent to the proposed LSPGC Telecommunications Line. Maintenance activities at this LSPGC Proposed Project component would typically be limited to regular inspections. As shown in Table 5.3-9: BAAQMD Annual O&M Emissions, all emissions would be below applicable BAAQMD significance thresholds. Due to the limited maintenance requirements of the proposed LSPGC Telecommunications Line and compliance with all applicable thresholds, no impact would occur.

5.3.4.1.4 Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

LSPGC and PG&E Components

Less-than-Significant Impact. Construction of the LSPGC and PG&E Proposed Project components may create temporary odors from the combustion of fuel associated with heavy

equipment and on-road vehicle use; however, these emissions would not be considered significant due to the highly dispersive nature of diesel exhaust and the short-term nature of construction. No other substantial sources of odor would be present during construction activities. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Components

Less-than-Significant Impact. O&M activities may create temporary odors from the combustion of fuel associated with heavy equipment and on-road vehicle use. Because O&M activities are currently conducted in this area and would be limited in duration (i.e., typically lasting 1 day at each structure location), odor from fuel combustion would disperse quickly. As a result, impacts would be less than significant.

5.3.4.2 Air Quality Emissions Modeling

Air quality emissions were estimated using emission factors and methods from the California Emissions Estimator Model v2022.1, emission factors from the U.S. EPA AP-42, Compilation of Air Pollutant Emission Factors, CARB vehicle emission models, and California Energy Commission and other agency studies (California Air Pollution Control Officers Association 2022). Helicopter emissions were estimated based on the Swiss FOCA Guidance on the Determination of Helicopter Emissions (FOCA 2015). Emissions modeling results are presented in Attachment 5.3-A: Air Quality and GHG Calculations; all calculations, presented in Microsoft Excel format, are provided to the CPUC under separate cover.

5.3.4.3 Air Quality Emissions Summary

Tables summarizing the air quality emissions for the Proposed Project and applicable thresholds for each applicable attainment area are presented in Section 5.3.4 Impact Analysis, which also includes a summary of both uncontrolled and controlled emissions. The assumptions that were applied in the controlled emissions estimates are also provided in Attachment 5.3-A: Air Quality and GHG Calculations.

5.3.4.4 Health Risk Assessment

Review of Office of Environmental Health Hazard Assessment (OEHHA) guidance (OEHHA 2015) indicates that a Health Risk Assessment is not required for the Proposed Project because it does not include operation of new stationary sources that would result in the emissions of TACs. Proposed Project construction is anticipated to take approximately 26 months, and the nearest sensitive receptor to planned construction activities in Solano County is a group of residences approximately 0.4 mile away. No other sensitive receptors are located within 1,000 feet of the Proposed Project and associated construction areas in Solano County.

In Contra Costa County, numerous residences, Marina Community Center, and St. Peter Martyr School would be located adjacent to the proposed LSPGC Telecommunications Line. In addition, multiple residences would be located within approximately 0.1 mile of a staging area located adjacent to PG&E's existing Pittsburg Substation. Construction of this Proposed Project component is anticipated to last approximately 4 months; however, construction would proceed in a generally linear fashion at discrete work areas along the proposed route. As a result,

construction at one location is anticipated to last less than the 2-month minimum time for evaluating cancer risks following OEHHA guidance. As a result, a Health Risks Assessment would be performed for the Proposed Project and would be submitted to the CPUC once complete.

5.3.5 CPUC Draft Environmental Measures

While the CPUC includes a draft environmental measure for dust control within the Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, it is not included within this document. Instead, APM AIR-2 was included in place of the CPUC's draft environmental measure because the dust control measures described in APM AIR-2 would be designed to comply with the guidance and requirements from the BAAQMD and SMAQMD.

5.3.6 Applicant-Proposed Measures

5.3.6.1 Air Quality Applicant-Proposed Measures

The following APMs would be implemented for the LSPGC Proposed Project components:

- **APM AIR-1: Tier 4 Construction Equipment.** Construction equipment with a rating between 100 and 750 hp would be required to use engines compliant with EPA Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.

- **APM AIR-2: Dust Control.** Measures to control fugitive dust emissions would be implemented during construction. These measures would be included in a Fugitive Dust Control Plan that would be prepared in accordance with BAAQMD and SMAQMD requirements. The measures would be implemented as needed to control dust emissions. These measures would include, but may not be limited to, the following:

  – Surfaces disturbed by construction activities would be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance.

  – Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles would be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, or would be covered.

  – Vehicles hauling soil and other loose material would be covered.

  – Vehicles would adhere to a speed limit of 15 mph on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas.

  – Visible mud or dirt trackout onto an adjacent public road would be removed at least once per day using wet power vacuum street sweepers.

- Excavation, grading, and/or demolition activities would be suspended when average wind speeds exceed 20 mph and dust cannot be suppressed in accordance with the requirements of BAAQMD Rule 6-1.

- Unpaved dirt roads providing access to sites located 100 feet or farther from a paved road would be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel.

- Publicly visible signs would be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number would also be visible to ensure compliance with applicable regulations.

5.3.7 PG&E Construction Measures

5.3.7.1 Air Quality PG&E Construction Measures

The following CMs would be implemented for the PG&E Proposed Project components:

- **CM AIR-1: Tier 4 Construction Equipment.** Construction equipment with a rating between 100 and 750 hp would be required to use engines compliant with Environmental Protection Agency Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.

- **CM AIR-2: Fugitive Dust Control.** The following actions would be taken, as applicable and feasible, to control fugitive dust during construction. BAAQMD notifications would be made in accordance with any requirements in effect at the time of construction.

  - Applying water to disturbed areas and to storage stockpiles.

  - Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities.

  - Limit vehicle speed to 15 mph.

  - Load haul trucks with a freeboard (space between top of truck and load) of six inches or greater.

  - Cover the top of the haul truck load.

  - Clean-up track-out at least daily.

5.3.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, CAISO requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the

substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to air quality associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area is located in the same air basin and would be constructed with the same construction methods. As such, the potential modification would result in less-than-significant impacts to air quality and the environmental setting, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			✓	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓
g) Create a substantial collision or electrocution risk for birds or bats?			✓	

This section describes the biological resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.4.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Cable, which would extend and terminate on the west side of PG&E's existing Pittsburg Substation.

The nearest weather station to the Proposed Project is in Buchanan Field, which is located nearly 13 miles away and receives an average of 5.7 inches of rainfall per year, with the majority of precipitation falling between November and March (Time and Date 2024). Average annual temperatures range from 48 to 73 degrees Fahrenheit (National Oceanic and Atmospheric Administration [NOAA] 2023). Elevation within the Proposed Project area ranges from 3 to 250 feet above sea level. The Proposed Project area is located adjacent to estuarine marsh habitat that is dominated by herbaceous plant species and extends through the aquatic habitats of the Delta and into PG&E's existing Pittsburg Substation, which mostly consists of urban development.

5.4.1.1 Biological Resources Technical Report and Aquatic Resources Technical Report

The analysis presented in this section of the Proponent's Environmental Assessment is based in part on the Proposed Project-specific Biological Resources Technical Report (BRTR) and the Proposed Project-specific Aquatic Resources Technical Report (ARTR), which are presented in Attachment 5.4-A: Biological Resources Technical Report and Attachment 5.4-B: Aquatic Resources Technical Report; they document existing conditions, the potential for occurrence of special-status species, and the findings of biological surveys. Most of the information on the regulatory setting, methods, environmental setting, and impact analysis has been summarized from the BRTR and the ARTR. Photographs of the Proposed Project area are included in the BRTR.

5.4.1.2 Survey Areas (Local Setting)

The survey areas for the Proposed Project have been divided into two components: terrestrial and aquatic. These survey areas include all areas of permanent and temporary impacts associated with the construction of the Proposed Project. The following subsections describe the terrestrial and aquatic Proposed Project settings in detail.

5.4.1.2.1 Terrestrial

On May 23 to 26, 30, and 31; June 9; September 21 and 22; and December 19, 2023, Insignia Environmental (Insignia) conducted surveys to identify vegetation communities and land cover, aquatic features, and potential terrestrial habitat for special-status plant and wildlife species within the Proposed Project. The terrestrial survey area, which is depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types, is approximately 569.7 acres and constitutes 35.2 percent of the total survey area. The terrestrial survey area includes all terrestrial areas of the Proposed Project surrounding the Delta, as well as an approximately 10-acre Proposed Project buffer. Terrestrial areas south of Suisun Bay and in the vicinity of PG&E's existing Pittsburg Substation constitute a small portion of the terrestrial survey area and are mostly urban development. Areas north of Suisun Bay are mainly non-native grasslands accompanied by a variety of native plants along the water's edge.

5.4.1.2.2 Aquatic

Data gathered from several online databases for the months of June to December from 2012 to 2023 were used to assess the potential habitat for special-status plant and wildlife species within the aquatic study area. The aquatic study area is located within and beneath open waters of the western Delta between the northern and southern sections of the terrestrial survey area, as depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types. All open water located within the footprint of the Proposed Project between the north and south shores of the Delta make up the aquatic portion of the survey area, which is approximately 1,056 acres and 65.3 percent of the total survey area. The Delta generally extends from Sacramento in the north to the confluence of the San Joaquin River and Stanislaus River in the south and west to the edge of Suisun Bay near Collinsville. The Delta is the easternmost segment of the San Francisco Estuary, which consists of the Delta, Suisun Bay, San Pablo Bay, and San Francisco Bay (WRA 2024). The unincorporated community of Collinsville occupies a unique location in the Delta ecosystem at the transition zone between the freshwater habitats of the Delta and brackish habitats of Suisun Bay.

5.4.1.3 Vegetation Communities and Land Cover

As presented in Attachment 5.4-C: Vegetation Communities and Land Cover Types, 22 vegetation community alliances and land cover types were identified in the survey area. The vegetation community and land cover locations are depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types. Vegetation community types are based on field observations and descriptions in the California Native Plant Society (CNPS) Manual of California Vegetation Online (CNPS 2023a). Natural communities were evaluated using NatureServe's Heritage Methodology, the same system used to assign global and state rarity ranks for plant and animal species in the CNDDB.

Table 5.4-1: Vegetation Communities and Land Cover Types

Vegetation Community or Land Cover Type	Approximate Size in Survey Area (acres)	Composition of Survey Area (percent)
Baccharis pilularis Shrubland Alliance	0.1	<0.1
Bare Ground	1.6	0.1
Brassica nigra – Centaurea (*solstitialis, melitensis*) Herbaceous SNA	29.3	1.8
Developed	28.9	1.8
Distichlis spicata Herbaceous Alliance	17.5	1.1
Disturbed	16.6	1.0
Frankenia salina Herbaceous Alliance*	3.8	0.2
Juncus arcticus (var. *balticus, mexicanus*) Herbaceous Alliance	1.5	0.1
Lepidium latifolium – Lactuca serriola Herbaceous SNA	7.9	0.5
Lolium perenne Herbaceous SNA	394.2	24.4
Open Water	1,055.9	65.2
Ornamental Vegetation	2.9	0.2
Polygonum lapathifolium – Xanthium strumarium Herbaceous Alliance	0.1	<0.1
Rip-Rap	0.5	<0.1
Rosa californica Shrubland Alliance*	3.2	0.2
Salix exigua Shrubland Alliance	2.6	0.2
Sarcocornia pacifica (*Salicornia depressa*) Herbaceous Alliance*	1.0	0.1
Schoenoplectus (*acutus, californicus*) Herbaceous Alliance*	17.6	1.1
Schoenoplectus acutus/*Rosa californica* Association*	2.1	0.1
Schoenoplectus americanus Herbaceous Alliance*	0.3	<0.1
Typha (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	<0.1	<0.1
Not Surveyed***	2.0	0.1
Total**	**1,618.2**	**100**

*California Department of Fish and Wildlife- (CDFW-) designated sensitive natural community (State Rarity Rank S1-S3).
**Due to rounding, totals may not sum.
***Areas that were inaccessible due to tall, non-transparent fencing and/or lack of landowner permission were not surveyed

As defined by the CNPS, natural communities have ranks of: S1, S2, S3, S4, S5, and semi-natural alliance (SNA) (i.e., semi-natural stands dominated by non-native species). Ranks S1, S2, and S3[1] are the only natural communities considered sensitive. The natural communities observed in the terrestrial survey area are ranked S3, S4, S5, and SNA. Six communities rank S3 and are thus considered sensitive. S3 rankings are communities that are vulnerable statewide, S4 are those that are apparently secure statewide, and S5 are those that are demonstrably secure because of statewide abundance (CNPS 2023a). The six communities ranking S3 include the *Frankenia salina* Herbaceous Alliance, *Rosa californica* Shrubland Alliance, *Schoenoplectus* (*acutus*, *californicus*) Herbaceous Alliance, *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance, *Schoenoplectus americanus* Herbaceous Alliance, and the *Schoenoplectus acutus*/*Rosa californica* Association.

Surveys for vegetation communities and land cover type were conducted by walking meandering transects spaced no more than 15 meters apart covering 100 percent of the area surveyed. Areas that were inaccessible due to tall, non-transparent fencing and/or lack of landowner permission were not surveyed; these inaccessible areas constituted approximately 0.1 percent of the aquatic and terrestrial survey areas. Based on aerial imagery from Google Earth, the unsurveyed areas lie within an elementary school and are suspected to include both developed and bare ground.

The following subsections describe 18 of 21 vegetation communities and other land cover types identified within the terrestrial survey area. A detailed description of three land cover types—bare ground, open water, and rip-rap—have not been elaborated on as they lack any visible surface vegetation and are monotypic of either dirt, water, or rock.

5.4.1.3.1 Baccharis pilularis Shrubland Alliance (S5)

The *Baccharis pilularis* Shrubland Alliance comprises approximately 0.1 acre (less than 0.1 percent) of the survey area and can be found in coastal bluffs, terraces, stabilized dunes, and river mouths with variable soils ranging from sandy to relatively heavy clay. Coyote brush (*Baccharis pilularis*) is the dominant plant species; it generally occupies at least 50 percent of the shrub canopy or is co-dominant with silk tassel bush (*Garrya elliptica*) or coffeeberry (*Frangula californica*). This community was observed within the terrestrial survey area south of the Delta, near PG&E's existing Pittsburg Substation and alongside non-native forbs.

5.4.1.3.2 Brassica nigra – Centaurea (solstitialis, melitensis) Herbaceous Semi-Natural Alliance

The *Brassica nigra – Centaurea* (*solstitialis*, *melitensis*) Herbaceous SNA constitutes approximately 29.2 acres (1.8 percent) of the survey area and is typically associated with disturbed areas where black mustard (*Brassica nigra*) and short-pod mustard (*Hirshfeldia incana*) achieve 80 percent relative cover in the herbaceous layer. Similar ruderal forbs, including tocolote (*Centaurea melitensis*) and yellow star thistle (*Centaurea solstitialis*), may achieve dominance or co-dominance. Within the terrestrial survey area north of the Delta, this community was generally observed in dense colonies between stands of non-native grassland in areas where heavy cattle grazing historically occurred.

[1] S1, S2, and S3 are defined as critically imperiled statewide, imperiled statewide, and vulnerable statewide, respectively.

This vegetation community can be observed alongside the proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line.

5.4.1.3.3 Developed

Developed areas constitute approximately 28.8 acres (1.8 percent) of the survey area; they are highly modified and contain some form of human-constructed infrastructure. Maintained paved surfaces, structures, or buildings may be included in this cover type. Within the terrestrial survey area, most of the developed land cover is found along the proposed LSPGC Telecommunications Line and in the vicinity of PG&E's existing Pittsburg Substation and the proposed LSPGC 230 kV Underground Segment.

5.4.1.3.4 Distichlis spicata Herbaceous Alliance (S4)

The *Distichlis spicata* Herbaceous Alliance constitutes approximately 17.5 acres (1.1 percent) of the terrestrial survey area and is found commonly in alkaline or saline ecosystems adjacent to estuarine marshes or other wetland habitats that may be tidally influenced. Saltgrass (*Distichilis spicata*) typically contains greater than 30 percent relative cover in the herbaceous layer; however, it can be co-dominant with other halophytes, including spear-leaved orache (*Atriplex prostrata*) and alkali heath (*Frankenia salina*). The herbaceous layer is continuous and typically leaves an undeveloped or sparse shrub layer. This community was generally observed north of the Delta near the proposed LSPGC Collinsville Substation site within standing water in tidally influenced brackish areas.

5.4.1.3.5 Disturbed

Disturbed areas constitute approximately 45.6 acres (2.8 percent) of the survey area and are those areas that have been changed from their natural state by human influence. This cover type lacks vegetation and includes all dirt roads, unmaintained paved roads, cleared areas, barren pasturelands, and bare ground with little or vegetation or evidence of recent activity. Potential vegetation, if any, that may grow in this cover type includes Russian thistle (*Salsola tragus*), brome grasses (*Bromus* spp.), and wild oat (*Avena fatua*). Disturbed areas were observed throughout the terrestrial survey area as barren dirt lots segregated by dirt or paved roads; however, the majority of disturbed land cover was found south of the Delta in close proximity to PG&E's existing Pittsburg Substation.

5.4.1.3.6 Frankenia salina Herbaceous Alliance (S3)

The *Frankenia salina* Herbaceous Alliance constitutes approximately 3.8 acres (0.2 percent) of the survey area and is found commonly adjacent to coastal salt marshes or brackish marshes. Typically, the *Frankenia salina* Herbaceous Alliance contains greater than 30 percent relative cover in the herbaceous layer and stands of alkali heath (*Frankenia salina*) are often found in the high marsh where soils are intermittently or seasonally flooded. Pickleweed (*Salicornia pacifica*) is often found among this community in lower percentages of 5 to 10 percent. This community was observed near the proposed LSPGC Collinsville Substation site on the northern shore of the Delta at the highest point of the marsh and adjacent to water that seasonally and tidally inundates this community.

5.4.1.3.7 Juncus arcticus (var. balticus, mexicanus) Herbaceous Alliance (S4)

The *Juncus arcticus* (var. *balticus*, *mexicanus*) Herbaceous Alliance constitutes approximately 1.5 acres (0.1 percent) of the survey area and varies widely in species composition based on the geographic location, but it typically includes greater than 30 percent relative cover in the shrub layer of arctic rush (*Juncus arcticus*) or Baltic rush (*Juncus balticus*). This community generally occurs in wet meadows with poorly drained soils between estuarine marshes and sloughs. This community was observed near the proposed LSPGC 230 kV Overhead Segment on the northern shore of the Delta adjacent to the shoreline and in upland areas of the marsh between sloughs.

5.4.1.3.8 Lolium perenne Herbaceous Semi-Natural Alliance

The *Lolium perenne* Herbaceous SNA constitutes approximately 394.2 acres (24.4 percent) of the survey area and contains Italian ryegrass (*Festuca perennis*) that is dominant or co-dominant with other non-natives in the herbaceous layer, including rip-gut brome (*Bromus diandrus*), sea barley (*Hordeum marinum*), and wild oat. The herbaceous layer is typically continuous and often forms monocultures, which contribute to a poorly developed shrub layer. Within the terrestrial survey area, this community is the most widespread of the terrestrial vegetation communities and it is found in upland areas that lack native species and have low species diversity. It can be found throughout the sites for the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection. Additionally, this community shows evidence of heavy grazing, landowner maintenance, and agriculture use. During the September 2023 survey, large tracts of this community were being actively converted into access roads as part of the Sacramento Municipal Utility District (SMUD) Solano 4 Wind Project.

5.4.1.3.9 Ornamental Vegetation

Ornamental vegetation constitutes approximately 2.9 acres (0.2 percent) of the survey area and includes all areas with maintained landscaping, especially those surrounding developed homes or buildings. All observations of this vegetation community were located south of the Delta near PG&E's existing Pittsburg Substation and the proposed LSPGC Telecommunications Line exclusively within or adjacent to developed areas. This cover type includes various grasses, shrubs, and trees—such as eucalyptus (*Eucalyptus* spp.) and pepper tree (*Schinus molle*)—that can be found in residential lawns or yards, surrounding public buildings or private businesses, and/or alongside or in the medians of paved roads.

5.4.1.3.10 Polygonum lapathifolium – Xanthium strumarium Herbaceous Alliance (S4)

The *Polygonum lapathifolium – Xanthium strumarium* Herbaceous Alliance constitutes approximately 0.1 acre (less than 0.1 percent) of the survey area and contains rough cocklebur (*Xanthium strumarium*) that is dominant or co-dominant with lanceleaf water plantain (*Alisma lanceolatum*), northern water plantain (*Alisma triviale*), and common sunflower (*Helianthus annuus*), as well as a variety of knotweeds (*Persicaria* spp.) and smartweeds (*Polygonum* spp.) in the herbaceous layer. Within the terrestrial survey area near the proposed LSPGC Collinsville Substation site, this community is dominated primarily by rough cocklebur and other smartweeds. During the September 2023 survey, one isolated community was found situated west of Stratton Lane and east of Latin Lane within stands of *Lolium perenne* Herbaceous SNA.

5.4.1.3.11 Lepidium latifolium – Lactuca serriola Herbaceous Semi-Natural Alliance

The *Lepidium latifolium – Lactuca serriola* Herbaceous SNA constitutes approximately 7.9 acres (0.5 percent) of the survey area and is dominated by non-native species in the shrub layer. This vegetation community can be found near disturbed or developed areas within the terrestrial survey area south of the Delta adjacent to PG&E's existing Pittsburg Substation. Species observed within this cover type include stinkwort (*Dittrichia graviolens*) as 30 percent of the ground cover, accompanied by Russian thistle (*Salsola* spp.), coyote brush, and various others to create an intermittent to continuous herbaceous layer.

5.4.1.3.12 Rosa californica Shrubland Alliance (S3)

The *Rosa californica* Shrubland Alliance constitutes approximately 3.2 acres (0.2 percent) of the survey area and is commonly found in creek bottoms, in stream terraces, and bordering sloughs and channels. California wild rose (*Rosa californica*) typically represents greater than 50 percent relative cover in the shrub canopy and may be co-dominant with Himalayan blackberry (*Rubus armeniacus*). The shrub layer is thick and continuous while the herbaceous layer is open. Emergent trees, including willows (*Salix* spp.), may be present in low quantities. This community is found within the terrestrial survey area on the northern shore of the Delta adjacent to the proposed LSPGC 230 kV Overhead Segment and intertidal sloughs. Himalayan blackberry was commonly observed, and in some cases co-dominant, among thick patches of California wild rose. Isolated red willows (*Salix laevigata*) were observed scattered throughout this community.

5.4.1.3.13 Salix exigua Shrubland Alliance (S4)

The *Salix exigua* Shrubland Alliance constitutes approximately 2.6 acres (0.2 percent) of the survey area and is widespread in California and contains significant variation when determining habitat and shrub composition. Often the shrub layer is intermittent to continuous dominated by sandbar willow (*Salix exigua*) and contains greater than 20 percent absolute cover in the shrub layer. In a high-quality habitat, sandbar willow may be co-dominant with other willow species and emergent riparian trees may be present at a low cover. Within the terrestrial survey area north of the Delta near the proposed LSPGC 230 kV Overhead Segment, this community was observed between tidally influenced sloughs and estuarine marshes containing sandy soil. Heavy cattle grazing was observed to have a direct impact on this community, leading to a sparse shrub layer dominated by sandbar willows that are in the process of re-growing.

5.4.1.3.14 Sarcocornia pacifica (Salicornia depressa) Herbaceous Alliance (S3)

The *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance constitutes approximately 1.0 acre (less than 0.1 percent) of the survey area and is found almost exclusively in coastal salt marsh and alkaline flat habitats. It typically contains greater than 50 percent cover of pickleweed (*Sarcocornia pacifica*) in the herbaceous layer. Other salt-tolerant marsh plants such as alkali heath and saltgrass are frequently associated with this community. Within the terrestrial survey area north of the Delta near the proposed LSPGC Collinsville Substation site, this community was observed within dry salt flats adjacent to grazed and cultivated Italian ryegrass fields. Along the margins of these communities, pickleweed was co-dominant with annual grasses.

5.4.1.3.15 Schoenoplectus (acutus, californicus) Herbaceous Alliance (S3S4)

The *Schoenoplectus* (*acutus*, *californicus*) Herbaceous Alliance constitutes approximately 17.6 acres (1.1 percent) of the survey area and is found in a variety of wetland habitats, including brackish marshes, freshwater ponds, sloughs, swamps, and roadside ditches. The shrub layer is intermittent to continuous, forming thick stands that often result in a poorly developed herbaceous layer. Hardstem bulrush (*Schoenoplectus acutus*) or giant bulrush (*Schoenoplectus californicus*) typically contain greater than 50 percent relative cover in the herbaceous layer. Within the terrestrial survey area north of the Delta near the proposed LSPGC Collinsville Substation site, this community was observed adjacent to the coastline, within sloughs, and in tidally influenced areas that are semi-brackish. Species composition varied depending on the salinity of the water and proximity to the coastline, as hardstem bulrush is generally less tolerant of brackish conditions.

5.4.1.3.16 Schoenoplectus acutus/Rosa californica Association (S3S4)

The *Schoenoplectus acutus/Rosa Californica* Association constitutes approximately 2.1 acres (0.1 percent) of the survey area and occurs on tidal sloughs that are seasonally or tidally inundated with brackish or semi-brackish water. This association contains greater than 50 percent relative cover of hardstem bulrush and giant bulrush with as low as 5 percent absolute cover of California wild rose. This habitat occurred primarily on man-made earthen levees bordering sloughs adjacent to the coastline near the proposed LSPGC Collinsville Substation site on the north side of the Delta. California wild rose was observed in high quantities growing among stands of bulrush (*Scirpus* spp.), sometimes achieving 20 to 30 percent relative percent cover.

5.4.1.3.17 Schoenoplectus americanus Herbaceous Alliance (S3)

The *Schoenoplectus americanus* Herbaceous Alliance constitutes approximately 0.3 acre (less than 0.1 percent) of the survey area and is found in a variety of wetland habitats, including brackish marshes, freshwater ponds, sloughs, swamps, and roadside ditches. The herbaceous layer is intermittent to continuous, forming thick stands. Chairmaker's bulrush (*Schoenoplectus americanus*) typically makes up greater than 50 percent of relative cover. This community was observed within wetlands adjacent to Stratton Lane and immediately adjacent to dense stands of *Schoenoplectus acutus* on the north side of the Delta near the proposed LSPGC Collinsville Substation site.

5.4.1.3.18 Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance (S5)

The *Typha* (*angustifolia*, *domingensis*, *latifolia*) Herbaceous Alliance constitutes less than 0.1 acre (less than less than 0.1 percent) of the survey area and occurs in semi-permanently flooded freshwater or brackish marshes. This alliance contains 50 percent or greater of various cattails (*Typha* spp.) along with saltgrass and smartweed comprising the remainder of the herbaceous layer. Within the terrestrial survey area north of the Delta near the proposed LSPGC Collinsville Substation site, this community occurred within wetland habitats immediately adjacent to Stratton Lane.

5.4.1.4 Aquatic Features

The USFWS NWI (USFWS 2023a) and the USGS NHD (USGS 2023) were queried to determine if potentially jurisdictional waters had been previously mapped within both aquatic and terrestrial survey areas. Waters mapped within the survey areas are detailed in Table 5.4-2: Potentially Jurisdictional Wetland Features and Table 5.4-3: Potentially Jurisdictional Linear Water Features. A preliminary assessment of water features was conducted to identify potentially jurisdictional waters under the U.S. Army Corps of Engineers (USACE), a Regional Water Quality Control Board (RWQCB), and/or the CDFW.

Assessments were conducted by walking meandering transects that were spaced no more than 15 meters apart and covered 100 percent of the area surveyed. Insignia biologists used guidance from *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008) to determine the location and size of linear water features potentially under the jurisdiction of the USACE, RWQCB, and/or CDFW. Photographs of each linear water feature were taken to record downstream and upstream conditions. OHWM indicators and measurements of each jurisdictional linear water feature were recorded on electronic data sheets. Top of bank (TOB) measurements were also noted for each linear water feature to assess the areas that may be CDFW-jurisdictional under Section 1600 of the California Fish and Game Code. Potentially jurisdictional wetland features were identified through combined observations of visible hydrology, vegetation typically associated with wetlands, and elevation relative to the surrounding topography. These areas would require formal wetland delineation studies to determine if they are within the jurisdiction of the USACE, RWQCB, and/or CDFW.

As described in Table 5.4-3: Potentially Jurisdictional Linear Water Features, Insignia biologists identified two linear water features within the terrestrial survey area that are potentially under the jurisdiction of the USACE, RWQCB, and/or CDFW. Both water features would be crossed by Proposed Project components. Drainage (D-) 1 would be crossed by the PG&E 500 kV Interconnection and D-2 would be crossed by the LSPGC 230 kV Submarine Segment. Further, seven potentially jurisdictional wetland features were observed within the terrestrial survey area and are detailed in Table 5.4-2: Potentially Jurisdictional Wetland Features. Attachment 5.4-C: Vegetation Communities and Land Cover Types depicts the locations of the potentially jurisdictional aquatic features within the terrestrial survey area. Table 5.4-2: Potentially Jurisdictional Wetland Features and Table 5.4-3: Potentially Jurisdictional Linear Water Features list the unique feature identification number, feature type, length, OHWM width and depth, TOB width and depth, Cowardin[2] classification for wetlands, and the approximate extent of USACE, RWQCB, and CDFW jurisdictions.

Wetland features W-3, W-4, W-7, and portions of W-2, further described in Table 5.4-2: Potentially Jurisdictional Wetland Features and depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types, lacked standing water or observable hydrology and were identified by the presence of wetland vegetation (i.e., saltgrass [*Distichilis* sp.], pickleweed

[2] The Cowardin classification system is used by the U.S. Fish and Wildlife Service for the National Wetlands Inventory. In this system, wetlands are classified by landscape position, vegetation cover and hydrologic regime.

Table 5.4-2: Potentially Jurisdictional Wetland Features

Wetland Identification Number	Vegetation Type(s)	Cowardin Classification	Page(s) in Attachment 5.4-C	Potential USACE- and RWQCB-Jurisdictional Area within Terrestrial Survey Area (acres)	Potential CDFW-Jurisdictional Area within Terrestrial Survey Area (acres)
Wetland (W-) 1	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance, *Rosa californica* Shrubland Alliance, and *Schoenoplectus acutus*/*Rosa californica* Association	E2EM1[3]	1, 2	7.43	7.43
W-2	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, *Distichlis spicata* Herbaceous Alliance, and *Frankenia salina* Herbaceous Alliance	PEM1[4]	1, 2	22.43	22.43
W-3	*Distichlis spicata* Herbaceous Alliance	PEM1	2, 3	0.25	0
W-4	*Frankenia salina* Herbaceous Alliance and *Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	PEM1	2, 3	1.22	0
W-5	*Distichlis spicata* Herbaceous Alliance and *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	PEM1	3, 4	15.16	15.16
W-6	*Distichlis spicata* Herbaceous Alliance and *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	PEM1	3, 4, 5	10.02	11.85
W-7	*Distichlis spicata* Herbaceous Alliance	PEM1	4	1.55	0
Total	**--**	**--**	**--**	**58.06**	**55.04**

[3] E-Estuarine 2-Intertidal EM-Emergent 1-Persistent
[4] P-Paulstrine EM-Emergent 1-Persistent

Table 5.4-3: Potentially Jurisdictional Linear Water Features

ID	Feature Type	Proposed Project Component Crossing Linear Feature	Average Measurements (feet)					Jurisdictional Area (acres)		
			Length	OHWM Width	OHWM Depth	TOB Width	TOB Depth	USACE	RWQCB	CDFW
D-1	Ephemeral	PG&E 500 kV Interconnections	926.12	3.00	0.10	4.90	2.20	0	0.06	0.10
D-2*	River Delta	LSPGC 230 kV Submarine Segment	--	--	--	--	--	1,167	1,167	1,167

*The Delta, identified as D-2, was surveyed as part of the ARTR for the Proposed Project. Due to limitations in measuring the length, width, and depth of the river, the approximate area is listed in the table.

[*Salicornia* sp.], heath [*Frankenia* sp.], and rushes [*Juncus* sp.]). These areas would require formal wetland delineation studies to confirm the presence and extent of jurisdictional features.

It is anticipated that one wetland feature, W-2, would be permanently impacted by the installation of structures associated with the proposed LSPGC 230 kV Overhead Segment. Wetland features W-1, W-2, and W-7 are located in areas that would be temporarily impacted by Proposed Project construction.

A formal wetland delineation has not yet been conducted; however, a delineation would be conducted once further engineering is complete. This preliminary jurisdictional determination would be presented to the USACE; this would include all data sheets and NWI maps that show the proposed facilities depicted in Figure 5.4-1: National Wetlands Inventory Map.

Additionally, the proposed LSPGC 230 kV Submarine Segment (which would include the construction of an in-river transition structure) would run beneath the Delta waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the city of Pittsburg. This segment would be approximately 4.5 miles long and is further discussed in Section 5.4.1.5.2 Aquatic.

5.4.1.5 Habitat Assessment

5.4.1.5.1 Terrestrial

Insignia biologists conducted a preliminary habitat assessment for special-status plant and wildlife species within the terrestrial survey area. Topography, soil type, vegetation type, and vegetation community were all considered in identifying suitable or marginal habitat for special-status species. Assessments were conducted by walking meandering transects spaced no more than 15 meters apart covering 100 percent of the terrestrial survey area that was accessible. Nearly 0.1 percent of the terrestrial survey area was not surveyed due to fencing and lack of landowner permission.

Special-status species are plants and wildlife that require special consideration or protection and have been listed as rare, threatened, or endangered, by federal, state, or other agencies because of their rarity, vulnerability to habitat loss, population decline, or other factors. Species listed as threatened or endangered are protected under federal or state law. Other species have been designated as special-status species by state resource agencies or by policy of local agencies to meet conservation objectives.

Special-status plant and wildlife species identified during the literature and database search were analyzed with the following definitions of their potential to occur within the survey area:

- **Present:** The species was observed during surveys.
- **High Potential:** Suitable habitat for the species is present within the survey area, and recent (i.e., within 30 years) occurrences have been reported within 1 mile of the terrestrial survey area; or marginal habitat is present, and recent occurrences have been recorded within 0.25 mile of the terrestrial survey area. For plants, recent occurrences have been recorded within 0.25 mile, but the species was not observed during fully floristic surveys or was surveyed for outside of the known bloom period for the species.

- **Moderate Potential:** Suitable habitat for the species is present, and the terrestrial survey area is located within the species' known range, but no recent (i.e., within 30 years) occurrences have been recorded between 1 and 5 miles from the terrestrial survey area; or marginal habitat is present, the terrestrial survey area is located within the species' known range, and multiple recent occurrences have been recorded between 1 and 5 miles from the terrestrial survey area. For plants, recent occurrences have been recorded within 1 mile, but the species was not observed during fully floristic surveys or was surveyed for outside of the known bloom period for the species.

- **Low Potential:** Poor or marginal habitat for the species exists, and at least one recent occurrence has been recorded between 1 and 5 miles from the terrestrial survey area; barriers to migration/dispersal may be present; or suitable habitat for the species is present within the terrestrial survey area, but either no recent occurrences have been recorded between 1 and 5 miles from the terrestrial survey area or the terrestrial survey area is located outside of the species' known range. For plants, recent occurrences have been recorded within 5 miles, but the species was not observed during fully floristic surveys or was surveyed for outside of the known bloom period for the species.

- **No Potential:** No habitat exists for the species; no occurrences have been recorded between 1 and 5 miles from the terrestrial survey area, or the terrestrial survey area is outside of the species' known geographic or elevation range; and/or the species has been confirmed to be extirpated from the area.

5.4.1.5.2 Aquatic

WRA biologists reviewed the following literature resources and performed database searches to assess the potential for sensitive habitat types and special-status species:

- Antioch North and Honker Bay 7.5-minute USGS quadrangle maps (USGS 2023),
- Contemporary aerial photographs (Google Earth 2023),
- Historical aerial photographs (WRA 2023),
- NWI (USFWS 2023a),
- CNDDB (CDFW 2023a),
- USFWS IPaC (USFWS 2023b),
- EFH Mapper (NOAA Fisheries 2023a), and
- Critical Habitat Mapper (NOAA Fisheries 2023b).

Potential occurrence of special-status species in the aquatic study area were evaluated by first determining which special-status species occur in the vicinity of the aquatic study area through the literature and database review. The presence of suitable habitat for special-status species was evaluated based on physical and biological conditions of the site as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the aquatic study area was then determined according to the following criteria:

- **Present Year-Round.** Species has been observed in waters of the aquatic study area year-round (e.g., CNDDB, other reports) on the site in the recent past.

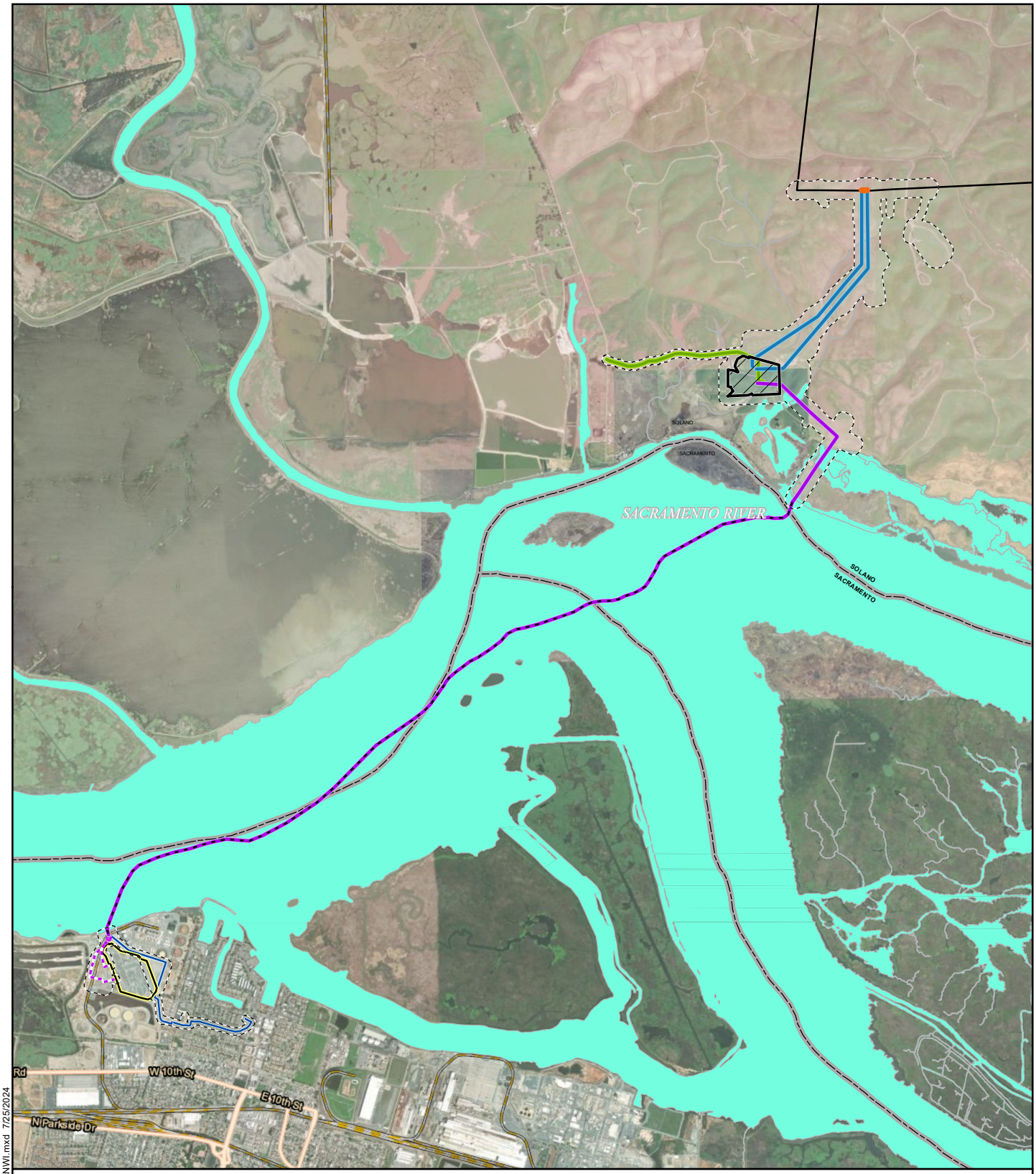

Figure 5.4-1: National Wetlands Inventory Map — **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Survey Area
- Proposed Collinsville Substation
- Existing PG&E Pittsburg Substation
- National Wetlands Inventory Feature
- County Boundary
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line

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LS POWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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- **Present Seasonally.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site in the recent past during certain portions of the year.

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

5.4.1.5.3 Biological Surveys

The subsections that follow describe the biological resource surveys that were conducted as part of the Proposed Project.

General Wildlife

Thirty-five wildlife species, as identified in Table 5.4-4: Wildlife Species Observed, were incidentally identified during the surveys; these included one reptile, four mammals, and 30 birds. Noted wildlife species were identified by direct observation, vocalizations, or the observance of scat and tracks. The wildlife identified are not necessarily comprehensive accounts of all species that utilize each survey area because species that are nocturnal, secretive, or seasonally absent may not have been observed. Wildlife identified during surveys were limited to terrestrial habitats as the aquatic study area was assessed through literature and database review rather than a field survey.

Although substantial portions of the terrestrial survey area are dominated by non-native grassland that is frequently utilized for grazing purposes, the portion of the terrestrial survey area located on the northern shore of the Delta contains tidally influenced estuarine marshes and sloughs that provide important habitat for a variety of species. Sloughs and marshes in the terrestrial survey area were generally undisturbed, containing thick and continuous stands of hardstem and giant bulrush that provide ample nesting habitat for riparian birds. Several avian species were incidentally observed nesting within stands of bulrush, including marsh wren (*Cistothorus palustris*), northern harrier (*Circus cyaneus*), and red-winged blackbird (*Agelaius phoeniceus*).

Special-Status Plants

Qualified botanists consulted the IPaC Project Planning Tool (USFWS 2023a), the CNPS rare plant inventory (CNPS 2023b), and CNDDB (CDFW 2023a) to identify potential and/or known occurrences of special-status species within the terrestrial survey area. Prior to plant surveys, staff consulted with local qualified botanists and the CDFW for reference population phenology.

All special-status plant species found in IPaC, CNPS, and CNDDB occurrence records within the 5-mile Proposed Project region were evaluated for their potential to occur in the terrestrial survey area based on the presence of suitable habitat and the elevation; the results are listed in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur. CNDDB records are depicted in Figure 5.4-2: CNDDB Occurrences of Special-Status Plant Species.

Table 5.4-4: Wildlife Species Observed

Common Name	Scientific Name
American coot	*Fulica americana*
American bittern	*Botaurus lentiginosus*
American goldfinch	*Spinus tristis*
Barn swallow	*Hirundo rustica*
Black phoebe	*Sayornis nigricans*
Black-tailed jackrabbit	*Lepus californicus*
Brown-headed cowbird	*Molothrus ater*
Brewer's blackbird	*Euphagus cyanocephalus*
California gull	*Larus californicus*
California scrub jay	*Aphelocoma californica*
Cliff swallow	*Petrochelidon pyrrhonota*
Cottontail	*Sylvilagus audubonii*
European starling	*Sturnus vulgaris*
Gopher snake	*Pituophis catenifer*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Horned lark	*Eremophila alpestris*
House finch	*Haemorhous mexicanus*
Killdeer	*Charadrius vociferus*
Mallard	*Anas platyrhynchos*
Marsh wren	*Cistothorus palustris*
Mourning dove	*Zenaida macroura*
Mute swan	*Cygnus olor*
Northern harrier	*Circus hudsonius*
Northern mockingbird	*Mimus polyglottos*
Red-winged blackbird	*Agelaius phoeniceus*
Ring-necked pheasant	*Phasianus colchicus*
River otter	*Lontra canadensis*
Savanah sparrow	*Passerculus sandwichensis*
Snowy egret	*Egretta thula*
Song sparrow	*Melospiza melodia*
Swainson's hawk	*Buteo swainsoni*
Tule elk	*Cervus canadensis nannodes*
Turkey vulture	*Cathartes aura*
Western meadowlark	*Sturnella neglecta*

Figure 5.4-2:
CNDDB Occurrences of Special-Status Plant Species

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project Buffers

Special Status Plant Species

- Alkali milk-vetch
- Antioch Dunes buckwheat
- Antioch Dunes evening-primrose
- Bearded popcornflower
- Big tarplant
- Bolander's water-hemlock
- Brittlescale
- Carquinez goldenbush
- Chaparral ragwort
- Contra Costa goldfields
- Contra Costa wallflower
- Delta mudwort
- Delta tule pea
- Diablo helianthella
- Diamond-petaled California poppy
- Dwarf downingia
- Fragrant fritillary
- Hall's bush-mallow
- Heartscale
- Hoover's cryptantha
- Keck's checkerbloom
- Mason's lilaeopsis
- Mt. Diablo buckwheat
- Pappose tarplant
- San Joaquin spearscale
- Showy golden madia
- Suisun Marsh aster
- Soft salty bird's-beak

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LS POWER GRID CALIFORNIA

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No USFWS critical habitat for special-status species plants is mapped within 5 miles of the Proposed Project. Based on the literature review, 28 special-status plant species have been documented within 5 miles of the Proposed Project and were evaluated for their potential to occur within the terrestrial survey area. Of the 28 special-status plant species, 23 have low or no potential to occur in the terrestrial survey area and five have moderate to high potential to occur in the terrestrial survey area.

Botanical surveys were conducted in May and July 2023. During these surveys, three special-status plant species were observed: Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), and Welsh mudwort (*Limosella australis*). These plant species are discussed in further detail in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur and Section 5.4.1.6 Special-Status Species Descriptions.

This survey covered approximately 325 acres of the terrestrial survey area (original botanical survey area). Following the botanical surveys in July 2023, the original botanical survey area was expanded by approximately 244 acres and now constitutes the terrestrial survey area, as shown in Attachment 5.4-C: Vegetation Communities and Land Cover Types. This expansion also occurred after the bloom period had concluded for most of the special-status plants with potential to occur.

Four special-status plants with the potential to occur within the original botanical survey area have bloom periods that fell outside of this botanical survey. These include:

- Carquinez goldenbush (*Isocoma arguta*),
- Chaparral ragwort (*Senecio aphanactis*),
- Diamond-petaled California poppy (*Eschscholzia rhombipetala*), and
- Fragrant fritillary (*Fritillaria liliacea*).

Two of these species, the Carquinez goldenbush and fragrant fritillary, are perennial species and would be observable within the original botanical survey area year-round. However, the remaining two species, diamond-petaled California poppy and chaparral ragwort, are annual herbs and, if present within the original botanical survey area, may not have been readily identifiable during May and July. Chaparral ragwort was confirmed to be in bloom on March 3, 2023 in surrounding areas (H. Bartosh 2023); however, as detailed in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur, no suitable habitat for this species was found within the terrestrial survey area. A supplemental targeted survey will be conducted within the original botanical survey area in 2024 during the bloom period for diamond-petaled California poppy. Additionally, fully floristic surveys will be conducted in 2024 within the approximately 244 acres of the terrestrial survey area not surveyed in 2023.

Special-Status Terrestrial Wildlife

Insignia biologists consulted the IPaC Project Planning Tool (USFWS 2023b) using the polygon feature and CNDDB (CDFW 2023a) with a shapefile to identify potential and/or known occurrences of special-status species within the terrestrial survey area. All special-status species wildlife found in the IPaC and CNDDB occurrence records within the Proposed Project area, as well as the Western Bat Working Group (WBWG) priority bats that were determined to have a

range that overlapped the Proposed Project area (WBWG 2023), were evaluated for their potential to occur within the terrestrial survey area based on the presence of suitable habitat.

A comprehensive list of these species is listed in Attachment 5.4-E: Special-Status Terrestrial Wildlife Species with the Potential to Occur. CNDDB records are depicted in Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species. No USFWS critical habitat for terrestrial special-status species wildlife was mapped within 5 miles of the Proposed Project (USFWS 2023b).

Based on the literature review, 14 special-status birds, five reptiles, four invertebrates, three mammals, and two amphibians documented within the Proposed Project area were evaluated for their potential to occur within the terrestrial survey area, as detailed in Attachment 5.4-E: Special-Status Terrestrial Wildlife Species with the Potential to Occur. Two special-status birds were incidentally observed during surveys: Northern harrier and Swainson's hawk.

A total of 13 species, including 10 avian species, two mammal species, and one reptile species were identified as having moderate or high potential to occur within the terrestrial survey area. These species are listed in Table 5.4-5: Special-Status Terrestrial Wildlife Species Present or with Moderate and High Potentials to Occur within the Terrestrial Survey Area. All other special-status species assessed for potential of occurrence were found to have low or no potential to occur. The species with moderate or high potential to occur within the terrestrial survey area are described in more detail in Section 5.4.1.6.1 Species Present or Seasonally Present, Section 5.4.1.6.2 Species with a High Potential to Occur, and Section 5.4.1.6.3 Species with a Moderate Potential to Occur.

Special-Status Aquatic Wildlife

Qualified biologists compiled aquatic resource data from the CNDDB (CDFW 2023), IPaC (USFWS 2023b), and CalFish (2023) searches of the Antioch North and Honker Bay USGS 7.5-minute quadrangle, as well as the surrounding seven quadrangles (i.e., Jersey Island, Brentwood, Antioch South, Clayton, Denverton, Birds Landing, and Rio Vista).

A comprehensive list of these species is included in Attachment 5.4-F: Special-Status Aquatic Wildlife Species with the Potential to Occur. CNDDB records are depicted in Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species. Critical habitat for Delta smelt (*Hypomesus transpacificus*), the green sturgeon (*Acipenser medirostris*) southern distinct population segment (DPS), the steelhead (*Onchorhynchus mykiss*) California Central Valley DPS, and Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*) exist within the aquatic study area and are further described in Section 5.4.1.7.2 Aquatic. Based on the literature review, 12 fish species and two mammal species documented within the Proposed Project area were evaluated for their potential to occur within the aquatic study area, as detailed in Attachment 5.4-F: Special-Status Aquatic Wildlife Species with the Potential to Occur .

Ten fish species and two mammal species were identified as seasonally present or present year-round within the aquatic study area. These are listed in Table 5.4-6: Special-Status Aquatic Wildlife Species Present within the Aquatic Survey Area and described in more detail in Section 5.4.1.6.2 Species with a High Potential to Occur. The rest of the species that were analyzed for

Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Amphibians - Map 1 of 6

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- California red-legged frog
- California tiger salamander - central California DPS

5-Mile

1-Mile

0.25-Mile

1:101,000

0 1 2 Miles

LS POWER GRID CALIFORNIA

INSIGNIA ENVIRONMENTAL

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Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Birds - Map 2 of 6

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- American peregrine falcon
- Burrowing owl
- California Ridgway's rail
- California black rail
- California least tern
- Saltmarsh common yellowthroat
- Short-eared owl
- Song sparrow ("Modesto" population)
- Suisun song sparrow
- Swainson's hawk
- Tricolored blackbird
- White-tailed kite
- Yellow rail

5-Mile
1-Mile
0.25-Mile

Grizzly Island
Grizzly Bay
Hammond Island
Simmons Island
Ryer Island
Freeman Island
Roe Island
Suisun Bay
Chipps Island
Kirby Hill
Birds Landing
MONTEZUMA HILLS
Rio Vista
Decker Island
Sherman Island
Jersey Island
Big Break
Bay Point
Pittsburg
Concord
Mulligan Hill
Oakley
Mallard Reservoir
Pine Creek
Lone Tree Valley

1:101,000
0 1 2 Miles

LSPOWER GRID CALIFORNIA
INSIGNIA ENVIRONMENTAL

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Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Crustaceans/Insects - Map 3 of 6

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- Conservancy fairy shrimp
- Lange's metalmark butterfly
- Vernal pool fairy shrimp
- Vernal pool tadpole shrimp

5-Mile
1-Mile
0.25-Mile

MONTEZUMA HILLS

Birds Landing
Grizzly Island
Grizzly Bay
Suisun Bay
Hammond Island
Simmons Island
Ryer Island
Freeman Island
Roe Island
Chipps Island
Winter Island
Browns Island
Sherman Island
Decker Island
Rio Vista
Jersey Island
Kimball Island
West Island
Big Break
Sherman Lake
Bay Point
Pittsburg
Antioch
Concord
Mallard Reservoir
Kirby Hill
Lone Tree Valley

1:101,000
0 1 2 Miles

LS POWER GRID CALIFORNIA
INSIGNIA ENVIRONMENTAL

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Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Mammals - Map 4 of 6

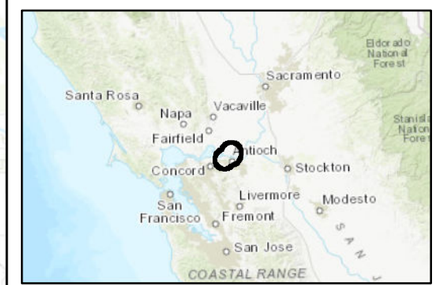
Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- Salt-marsh harvest mouse
- San Joaquin kit fox
- Western red bat

5-Mile

1-Mile

0.25-Mile



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0 1 2 Miles

LS POWER GRID CALIFORNIA

INSIGNIA ENVIRONMENTAL

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Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Reptiles - Map 5 of 6

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- Alameda whipsnake
- California glossy snake
- Giant gartersnake
- Northern California legless lizard
- Western pond turtle

5-Mile

1-Mile

0.25-Mile

1:101,000

0 1 2 Miles

LS POWER GRID CALIFORNIA

INSIGNIA ENVIRONMENTAL

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Figure 5.4-3: CNDDB Occurrences of Special-Status Wildlife Species Fish - Map 6 of 6

Collinsville 500/230 Kilovolt Substation Project

- Proposed Project buffers
- Delta smelt
- Green sturgeon - southern DPS
- Longfin smelt
- Steelhead - Central Valley DPS

5-Mile

1-Mile

0.25-Mile

1:101,000

0 1 2 Miles

LS POWER GRID CALIFORNIA

INSIGNIA ENVIRONMENTAL

Z:\Projects\LS_Power_Collinsville\MXD\PEA_FDRAFT\CNDDB_Animals.mxd 7/25/2024

Table 5.4-5: Special-Status Terrestrial Wildlife Species Present or with Moderate and High Potentials to Occur within the Terrestrial Survey Area

Common Name	Scientific Name	Status[5]	Potential to Occur
Burrowing Owl	*Athene cunicularia hypugaea*	SSC, BCC	**Moderate** (Nesting) **High** (Foraging)
California Black Rail	*Laterallus jamaicensis coturniculus*	ST, FP	**Moderate** (Nesting) **High** (Foraging)
California Least Tern	*Sternula antillarum browni*	FE, SE, FP	**Moderate** (Foraging/Migration)
California Ridgway's Rail	*Rallus obsoletus obsoletus*	FE, SE, FP	**Moderate** (Foraging)
Northern Harrier	*Circus cyaneus*	SSC, BCC	**Present** (Foraging) **High** (Nesting)
Northwestern Pond Turtle	*Actinemys marmorata*	PT, SSC	**High**
Saltmarsh Common Yellowthroat	*Geothlypis trichas sinuosa*	SSC, BCC	**High** (Nesting and Foraging)
Salt Marsh Harvest Mouse	*Reithrodontomys raviventris*	FE, SE, FP	**High**
Suisun Song Sparrow	*Melospiza melodia maxillaris*	SSC	**High** (Nesting and Foraging)
Swainson's Hawk	*Buteo swainsoni*	ST	**Present** (Foraging/Migration) **High** (Nesting)
Tricolored Blackbird	*Agelaius tricolor*	ST, SSC, BCC	**Moderate** (Foraging)
Western Red Bat	*Lasiurus blossevillii*	SSC, WBWG-H	**Moderate** (Foraging/Roosting)
White-tailed Kite	*Elanus leucurus*	FP	**Moderate** (Foraging)
Yellow Rail	*Coturnicops noveboracensis*	SSC	**Moderate** (Foraging/Wintering)

[5] The special-status species listing codes are provided in Table 5.4-7: Special-Status Species Listing Codes.

Table 5.4-6: Special-Status Aquatic Wildlife Species Present within the Aquatic Survey Area

Common Name	Scientific Name	Status[6]	Potential to Occur
California sea lion	*Zalophus californianus*	MMPA	Present Year-Round
Chinook salmon Central Valley fall/late fall-run Evolutionarily Significant Unit (ESU)	*Onchorhynchus tshawytscha*	SSC	Present Seasonally
Chinook salmon Central Valley spring-run ESU	*Onchorhynchus tshawytscha*	FT, ST	Present Seasonally
Chinook salmon Sacramento River winter-run ESU	*Onchorhynchus tshawytscha*	FE, SE	Present Seasonally
Delta Smelt	*Hypomesus transpacificus*	SSC	Present Year-Round
Green Sturgeon – southern Distinct Population Segment (DPS)	*Acipencer medirostris*	FT, SSC	Present Year-Round
Longfin Smelt	*Spirinchus thaleichythys*	PE, ST, SSC	Present Year-Round
Pacific harbor seal	*Phoca vitulina richardsi*	MMPA	Present Year-Round
Pacific Lamprey	*Entosphenus tridentatus*	SSC	Present Seasonally
River Lamprey	*Lampetra ayresi*	SSC	Present Seasonally
Sacramento Splittail	*Pogonichthys macrolepidotus*	SSC	Present Year-Round
Steelhead – Central Vally DPS	*Oncorhynchus mykiss irideus*	FT	Present Seasonally
Western Brook Lamprey	*Lampetra richardsoni*	SSC	Present Seasonally
White Sturgeon	*Acipenser transmontanus*	SSC	Present Year-Round

[6] The special-status species listing codes are provided in Table 5.4-7: Special-Status Species Listing Codes.

Table 5.4-7: Special-Status Species Listing Codes

Code	Description
Federal Listing Codes	
FE	Federally listed as endangered
FT	Federally listed as threatened
PE	Proposed to be federally listed as endangered
PT	Proposed to be federally listed as threatened
C	Candidate for listing
BCC	USFWS Bird of Conservation Concern
MMPA	Marine Mammal Protection Act
State Listing Codes	
SE	State-listed as endangered
ST	State-listed as threatened
SSC	CDFW Species of Special Concern
FP	Fully protected species
WL	California Watch List species
WBWG-H	The high designation represents those species considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment.
California Rare Plant Rank (CRPR) 1A	Plants presumed extinct in California and rare/extinct elsewhere
CRPR 1B	Plants that are rare, threatened, or endangered in California or elsewhere
CRPR 2B	Plants that are rare, threatened, or endangered in California but more common elsewhere
CRPR 0.1	Plants that are seriously threatened in California (over 80 percent of occurrences threatened; high degree and immediacy of threat)
CRPR 0.2	Plants that are moderately threatened in California (20 to 80 percent of occurrences threatened; moderate degree and immediacy of threat)

occurrence in the aquatic study area are not expected to occur or are considered to have an unlikely potential to occur.

5.4.1.6 Special-Status Species Descriptions

The special-status species listings identified in Table 5.4-7: Special-Status Species Listing Codes are used in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur, Attachment 5.4-E: Special-Status Terrestrial Wildlife Species with the Potential to Occur, and Attachment 5.4-F: Special-Status Aquatic Wildlife Species with the Potential to Occur to identify the listing status of each special-status species.

5.4.1.6.1 Species Present or Seasonally Present

Plant Species

Welsh Mudwort

Welsh mudwort can be observed on large patches of tidal mudflats with brackish or tidal fresh water, as well as alkali playa, cismontane woodland, valley and foothill grasslands, vernal pools, and wetlands. The plant generally has grass-like leaves in clumps of five to 10, with short, white flowers that are approximately 1 inch tall. This species was observed several times during the survey along the northern intertidal margins of the Delta, near the southernmost part of the proposed LSPGC 230 kV Overhead Segment.

Delta Tule Pea

The Delta tule pea is found in wetlands and dunes, among other suitable habitats. The plant can be identified via its pink to purple inflorescence or based on characteristics of its family (Fabaceae), such as branched tendrils, lance-shaped leaflets, or legume pods. Multiple observations of this species were made during the survey near the southern portion of the proposed LSPGC 230 kV Overhead Segment and the southern portion of the proposed LSPGC 230 kV Submarine Segment in close proximity to the northern and southern shores of the Delta.

Mason’s Lilaeopsis

Endemic to California, Mason’s lilaeopsis is found in freshwater and brackish marshes and other estuary habitats. The species spreads laterally by rhizomatous growth and has linear leaves of 2 to 7 centimeters in length. Flowers are small, white or greenish, and come in numbers of three to eight per umbel. Multiple observations of this species were made along the northern intertidal margins of the Delta, along the southernmost part of the proposed LSPGC 230 kV Overhead Segment.

Avian Species

Northern Harrier

The northern harrier utilizes a wide variety of open habitats with herbaceous cover, including saltwater and freshwater wetlands, grasslands, idle fields, agricultural pasturelands, deserts, and cropland. This species forages on small rodents and birds within open fields with dense vegetation. Ideal breeding and nesting grounds include wetland or upland habitats with tall, dense grasses, forbs, or low shrubs for concealment of nests. Northern harriers construct nests on the ground or over water on platforms of vegetation.

The terrestrial survey area has attracted nesting northern harriers; an active northern harrier nest was observed within the terrestrial survey area with two parents tending and delivering food to nestlings. The nest is situated on the ground within dense marsh vegetation in wetlands adjacent to the northern shore of the Delta. The approximate nest location is depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types. This species was also observed foraging within clearings surrounded by dense vegetation during the field survey.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) feeds almost exclusively on insects, the majority of which are grasshoppers. Young hawks are occasionally fed rodents, rabbits, and reptiles. Suitable habitat for this species requires riparian areas, shrub-steppe areas with scattered trees, as well as areas with large shrubs. Swainson's hawk nests are typically located in small, shrubby trees. This species can be found from southern Canada to northern Mexico.

This species may nest within the terrestrial survey area within the limited tree nesting sites available. Such nesting sites would be located in the *Salix exigua* Shrubland Alliance immediately adjacent to the north shore of the Delta, near the southernmost part of the proposed LSPGC 230 kV Overhead Segment. A Swainson's hawk individual was observed during the field survey foraging in upland grassland and cropland, and a CNDDB (CDFW 2023a) occurrence has been recorded near the terrestrial survey area. Foraging Swainson's hawks may be present throughout the terrestrial survey area.

Fish Species

Chinook Salmon

Chinook salmon are anadromous (i.e., adults migrate from a marine environment into the freshwater streams and rivers of their birth) and semelparous (i.e., spawns only once and then dies). Chinook salmon populations are further classified into distinct groups known as Evolutionary Significant Units (ESUs), which represent genetically and ecologically unique subpopulations. Three ESUs are expected to occur seasonally within the aquatic study area; each are discussed in the subsections that follow.

Chinook Salmon Central Valley Fall/Late Fall-Run ESU

The Chinook salmon Central Valley fall/late fall-run ESU includes all naturally spawned spring-run populations from the Delta. Central Valley fall/late fall-run Chinook salmon are morphologically similar to spring-run Chinook salmon. They are large salmonids, reaching 75 to 100 centimeters (standard length) and weighing 10 kilograms or more. The majority of Central Valley fall/late-fall Chinook salmon appear to spawn in the mainstem of the Sacramento River, which they enter from October through February. Spawning occurs from January through March, though it may extend into April in some years. Eggs are laid in large depressions (i.e., redds) hollowed out in gravel beds. The embryos hatch following a 3- to 4-month incubation period and the alevins (i.e., sac-fry) remain in the gravel for another 2 to 3 weeks. Once their yolk sac is absorbed, the fry emerges and begins feeding on aquatic insects. All fry emerge by early June. The juveniles usually hold in the river for nearly 1 year before moving to the sea the following winter. Once in the ocean, salmon are largely piscivorous and grow rapidly. The specific habitat requirements of Central Valley fall/late fall-run Chinook salmon have not been determined, but

they are presumably similar to other Chinook salmon runs and fall within the range of the physical and chemical characteristics of the Sacramento River above the city of Red Bluff.

The Sacramento and San Joaquin rivers (as well as their tributaries) are natal streams for Central Valley fall-run Chinook salmon, while Central Valley late fall-run Chinook salmon are limited to spawning within the mainstem of the Sacramento River or its more northern tributaries. No spawning or freshwater rearing streams are located within or immediately surrounding the aquatic study area. This species ESU would be expected to occur seasonally when migrating to natal streams in the fall as adults, or when migrating to the ocean in spring as juveniles or fry. The Chinook salmon Central Valley fall/late fall-run ESU is considered seasonally present within the aquatic study area when migrating from October through February.

Chinook Salmon Central Valley Spring-Run ESU

The Chinook salmon Central Valley spring-run ESU includes all naturally spawned spring-run Chinook salmon populations from the Sacramento and San Joaquin River mainstem and its tributaries. Central Valley spring-run Chinook salmon enter the Sacramento River between February and June. They move upstream and enter tributary streams from February through July, peaking from May to June. These fish migrate into the headwaters, hold in pools until they spawn, starting as early as mid-August and ending in mid-October, peaking in September. They are relatively faithful to the home streams in which they were spawned, using visual and chemical cues to locate these streams. While migrating and holding in the river, spring chinook do not feed, relying instead on stored body fat reserves for maintenance and gonadal maturation. Eggs are laid in large depressions (i.e., redds) hollowed out in gravel beds. Some fish remain in the stream until the following October and emigrate as "yearlings," usually with the onset of storms starting in October through the following March, peaking from November to December. Large pools with cold water are essential over-summering habitat for this species.

No spawning or freshwater rearing locations occur within the aquatic study area; however, this species ESU occurs seasonally when migrating to natal streams within the Sacramento and San Joaquin rivers in the spring, or when migrating to the ocean in late fall. As such, the Chinook salmon Central Valley spring-run ESU is considered seasonally present within the aquatic study area when migrating to or from natal streams.

Chinook Salmon Sacramento River Winter-Run ESU

The Chinook salmon Sacramento River winter-run ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries in California, as well as two artificial propagation programs: winter-run Chinook salmon from the Livingston Stone National Fish Hatchery, and winter-run Chinook salmon in a captive broodstock program maintained at Livingston Stone National Fish Hatchery and the University of California Bodega Marine Laboratory. Sacramento River winter-run Chinook salmon are unique because they spawn during summer months when air temperatures usually approach their yearly maximum. As a result, these salmon require stream reaches with cold water sources that protect embryos and juveniles from the warm ambient conditions in summer. Sacramento River winter-run Chinook salmon are primarily restricted to the mainstem Sacramento River.

No spawning or freshwater rearing locations occur within the aquatic study area; however, this species ESU occurs seasonally when migrating to natal streams in the spring near the headwaters

of the Sacramento River, or when migrating to the ocean. As such, the Chinook salmon Sacramento River winter-run ESU is considered seasonally present within the aquatic study area when migrating to or from natal streams.

Delta Smelt

The Delta smelt is a pelagic (i.e., lives in the open water column away from the bottom) and euryhaline (i.e., tolerant of a wide salinity range) species found in brackish water. This species is found only in the Sacramento-San Joaquin Estuary. The mouth of the American River on the Sacramento River and the unincorporated community of Mossdale on the San Joaquin River are as far upstream they can be found with San Pablo Bay being the furthest downstream. From the late winter to early summer, Delta smelt migrate to fresh water to spawn. Larvae take between 10 and 14 days to hatch, are planktonic (i.e., float with the water currents), and are washed downstream until they reach areas near the entrapment zone salt water and fresh water mix. Delta smelt are fast-growing and short-lived, with the majority of growth occurring within the first 7 to 9 months of life. Most Delta smelt die after spawning in the early spring, although a few survive to a second year. Delta smelt feed entirely on small crustaceans (i.e., zooplankton).

Delta smelt are largely restricted to the Delta proper, as well as the eastern portions of Suisun Bay. Given that the aquatic study area is within the Delta, Delta smelt is potentially present year-round. CNDDB occurrences have been recorded within 5 miles of the aquatic study area.

Green Sturgeon

Green sturgeon is generally found in marine waters from the Bering Sea to Ensenada, Mexico; however, spawning populations have been found only in medium-sized rivers in or north of the Delta system. Spawning occurs in the Sacramento River between March and June; it may extend into July in the Klamath River. Water temperature during spawning is likely 50 degrees Fahrenheit (°F) to 70°F. Spawning occurs in deep, fast water. The fertilized eggs are slightly adhesive and hatch after 4 to 12 days. Larvae stay close to the bottom and appear to rear primarily in rivers well upstream of estuaries. Young sturgeon (i.e., sturgeon approximately 8 inches long) feed primarily on small crustaceans such as amphipods and opossum shrimp (*Neomysis mercedis*). As they develop, they take a wider variety of benthic invertebrates, including various species of clams, crabs, and shrimp. The diet of larger green sturgeons includes fish.

Green sturgeon are only known to spawn within the headwaters of the Sacramento River near the city of Redding, or within the Feather River. No spawning habitat is present due to the aquatic study area being located at the terminus of the Sacramento River. This species is known to rear within the greater San Francisco Bay region year-round. As such, green sturgeon is potentially present year-round as both as adults and juveniles either rear within the Bay or migrate to and from the Pacific Ocean. CNDDB occurrences have been recorded within 0.25 mile of the aquatic study area.

Longfin Smelt

Longfin smelt (*Spirinchus thaleichthys*) is a pelagic, estuarine fish that ranges from Monterey Bay northward to Hinchinbrook Island in Prince William Sound, Alaska. As this species matures in the fall, adults found throughout the San Francisco Bay migrate to brackish water or fresh

water in Suisun Bay, Montezuma Slough, and the lower reaches of the Sacramento and San Joaquin rivers. Spawning is believed to take place in fresh water. In April and May, juveniles are believed to migrate downstream to San Pablo Bay. Juveniles tend to inhabit the middle and lower portions of the water column. This species tends to be abundant near freshwater outflow, where higher-quality nursery habitat occurs and potential feeding opportunities are greater.

Longfin smelt are known to occur within the Delta proper, as well as Suisun Bay. Given that the aquatic study area is within the Delta, longfin smelt is considered present year-round. CNDDB occurrences have been recorded within 0.25 mile of the aquatic study area.

Pacific Lamprey

The Pacific lamprey (*Entosphenus* [*Lampetra*] *tridentatus*) is an anadromous lamprey is found along the entire California coast with regularity until becoming disjunct south of San Luis Obispo County (except for regular runs to the Santa Clara River) (University of California Agricultural and Natural Resources 2023). Apart from land-locked populations, this species spends the predatory phase of its life in the ocean, feeding off the bodily fluids of a variety of fish. This species is usually concentrated near the mouths of their spawning streams because its prey is most abundant in coastal areas (Moyle 2002). Adults move up into spawning streams between early March and late June. After hatching, ammocetes are washed downstream, where they burrow into soft substrates and filter feed. Five to seven years later, ammocetes undergo metamorphosis into the predatory phase of their life cycle and out-migrate to the ocean as adults.

Tributaries of the Sacramento and San Joaquin rivers are natal streams for this species (University of California Agricultural and Natural Resources 2023). No spawning or freshwater rearing locations occur within the aquatic study area; however, this species occurs seasonally when migrating to natal streams within the Sacramento and San Joaquin rivers in the spring, or when migrating to the ocean in spring. As such, the Pacific lamprey is considered present within the aquatic study area, but only seasonally and for short periods when migrating to or from natal streams.

River Lamprey

The River lamprey (*Lampetra ayresi*) preys upon a variety of fishes in the 10 to 30 centimeter total length size range, but the most common prey seem to be herring and salmon. Unlike other species of lamprey in California, river lampreys typically attach to the back of a host fish above the lateral line, where they feed on muscle tissue. Little is known about its habitat requirements in California, but presumably, the adults need clean, gravelly riffles in permanent streams for spawning, while the ammocetes require sandy backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 77 degrees °F. Adults migrate back into fresh water in the fall and spawn during the winter or spring months in small tributary streams.

Tributaries of the Sacramento and San Joaquin rivers are natal streams for this species (University of California Agricultural and Natural Resources 2023). No spawning or freshwater rearing locations occur within the aquatic study area; however, this species occurs seasonally when migrating to natal streams within the Sacramento and San Joaquin rivers in the spring, or when migrating to the ocean in spring. As such, the river lamprey is considered present within

the aquatic study area, but only seasonally and for short periods when migrating to or from natal streams.

Sacramento Splittail

Sacramento splittails (*Pogonichthys macrolepidotus*) are primarily freshwater fish that have been found mostly in slow-moving sections of rivers and sloughs; in the Delta and Suisun Marsh, they congregate in dead-end sloughs (WRA 2023). Splittail are benthic foragers that feed extensively on opossum shrimp; however, detrital material typically makes up a high percentage of their stomach contents. This species feeds opportunistically on earthworms, clams, insect larvae, and other invertebrates. They are preyed upon by striped bass (*Morone saxatilis*) and other predatory fishes. Because Sacramento splittail require flooded vegetation for spawning and foraging, they are found in habitat subject to periodic flooding during the breeding season.

This species is known to spawn within backwater sloughs of the Delta within areas where the Proposed Project is located (University of California Agricultural and Natural Resources 2023). No spawning locations occur within the aquatic study area; however, Sacramento splittail may rear and forage within the aquatic study area year-round.

Steelhead – California Central Valley DPS

Steelhead California Central Valley DPS (*Oncorhynchus mykiss irideus*) includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. The preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels, and fast-flowing water. During the winter or early spring, the spawning fish reach suitable gravel riffles (shallow areas with gravel or cobble substrate) in the upper sections of streams and dig their redds. Abundant riffle areas for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding. When steelhead spawn, they nearly always return to the stream where they were hatched. At that time, they may weigh 2 to 12 pounds or more.

No spawning or freshwater rearing locations occur within the study area; however, this species occurs seasonally when migrating to natal streams within the Sacramento and San Joaquin rivers in the spring, or when migrating to the ocean in the spring. As such, the species is considered present within the aquatic study area, but only seasonally and for short periods when migrating to or from natal streams.

Western brook lamprey

Western brook lamprey (*Lampetra richardsoni*) are found in large coastal rivers and their tributaries. They occur in coastal streams from southeastern Alaska south to California and inland in the Columbia and Sacramento-San Joaquin River drainages. Ammocoetes, are typically found in slackwater areas or pools where they burrow into soft substrate. Larval stage lasts 2 to 4 years in California. Spawning takes place in riffles in the early spring. Western brook lampreys have habitat requirements similar to those of salmonid species, with which they co-occur. They need clear, cold, water in little disturbed watersheds, as well as clean gravel near cover (boulders, riparian vegetation, logs, etc.) for spawning. Additional habitat requirements include

areas with low flow velocities and fine sediments for rearing that are not excessively scoured under high flows.

This species is known to spawn and rear within tributaries of the Sacramento and San Joaquin Rivers. As such, adults and juveniles must migrate through the aquatic study area when moving to and from spawning streams and would be considered seasonally present.

White Sturgeon

White sturgeon (*Acipenser transmontanus*) are found in most estuaries along the Pacific coast and are known to the San Francsico Bay Estuary. Adults in the San Francisco Bay Estuary system spawn in the Sacramento River and are not known to enter freshwater or non-tidal reaches of Estuary streams. White sturgeon typically spawn in May through June. The diet consists of crustaceans, mollusks, and some fish. While the aquatic study area does not provide spawning habitat for any of the aforementioned species, waters of the aquatic study area at the junction of the Carquinez Strait, Mare Island Strait and San Pablo Bay support all of these species seasonally as they migrate between spawning and rearing habitats and the Pacific Ocean, or other areas of the greater San Francisco Bay region.

The waters of the aquatic study area may support species as they temporarily forage and rear, but generally this area functions as migratory route for these species when moving between location. White sturgeon spawn only within large rivers of the Sacramento Valley but must pass through the aquatic study area to reach spawning grounds. Juveniles and adults, however, may be present and forage within the surrounding waters year-round.

Mammal Species

California Sea Lion

California sea lions (*Zalophus californianus*) are found from Vancouver Island in British Columbia to the southern tip of Baja California in Mexico. They breed mainly on offshore islands, ranging from southern California's Channel Islands south to Mexico, although a few pups have been born on Año Nuevo and the Farallon Islands on the central Californian coast (The Marine Mammal Center [TMMC] 2023). Sandy beaches are preferred for haul-out sites, although in California, they haul out on marina docks as well as jetties and buoys (TMMC 2023).

No haul-outs are known within the vicinity of the aquatic study area; however, individual sea lions are commonly observed moving through these areas of the Sacramento and San Joaquin rivers while foraging and are considered present year-round.

Pacific Harbor Seal

Harbor seals (*Phoca vitulina richardsi*) are fairly common, non-migratory pinnipeds inhabiting coastal and estuarine waters from Alaska to Baja California in Mexico. They are a year-round resident in the San Francisco Bay Area (Grigg et al. 2004). They haul out on rocks, reefs, and beaches, and feed in marine, estuarine, and occasionally fresh waters (Grigg et al. 2004). Harbor seals use open water for feeding and travelling, and terrestrial substrates adjacent to water for hauling out (resting). A haul-out site is generally considered a rookery if pups are present at the site. Harbor seals in San Francisco Bay also tend strongly toward use of established haul-out areas, as opposed to hauling out in new areas (Kopec 1999).

No haul-outs are known within the vicinity of the aquatic study area; however, individual seals are commonly observed moving inland while foraging and are considered present year-round.

5.4.1.6.2 Species with a High Potential to Occur

Plant Species

Bolander's Water Hemlock

Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*) is often associated with ditches, stream banks, pond margins, and marshes, as well as other suitable habitats like valley and foothill grasslands, vernal pools, and other wetlands. Water birds often consume the round fruits of the plant. The small white flowers of this species comprise an umbel atop tall stems, which are accompanied by fern-like leaves. There is suitable habitat within the terrestrial survey area in wetlands immediately adjacent to the northern shore of the Delta, at the southernmost part of the proposed LSPGC 230 kV Overhead Segment, and recent CNDDB observations for this plant have been recorded within 0.25 mile of the terrestrial survey area. This species has a high potential to occur within the terrestrial survey area.

Suisun Marsh Aster

The Suisun Marsh aster (*Symphyotrichum lentum*), a species endemic to Suisun Marsh, is a spreading herb that can grow up to 4 feet tall. Like other members of *Asteraceae*, this species features an inflorescence of yellow flowers surrounded by white flowers. The Suisun Marsh aster can be found in brackish or freshwater marshes and alongside the banks of sloughs and watercourses. This species prefers soils with higher clay and loam contents and attracts butterflies. Suitable wetland habitat for the species was observed within the terrestrial survey area in wetlands immediately adjacent to the northern shore of the Delta, at the southernmost part of the proposed LSPGC 230 kV Overhead Segment. Recent CNDDB observations within 0.25 mile of the terrestrial survey area have been recently documented. Suisun Marsh aster has a high potential to occur within the terrestrial survey area.

Avian Species

Burrowing Owl

The burrowing owl (*Athene cunicularia*) occupies wide-open, sparsely vegetated areas like prairies, deserts, grasslands and agricultural fields. Males are generally territorial and chase or attack other individuals of the same species, except for their breeding partner. Burrowing owls often use burrows dug by other animals like ground squirrels (*Otospermophilus beecheyi*). Although insects and small mammals are the primary source of food for this species, the burrowing owl is an opportunistic predator and eats anything it can physically handle. Unlike other owl species, the burrowing owl nests in the ground and actively hunts in the daytime.

Suitable grassland habitat for foraging is present, particularly in the survey area north of the Delta. Several CNDDB occurrences for this species have been documented within 5 miles of the terrestrial survey area; however, all occurrences north of the Sacramento River were recorded during the non-breeding season (CDFW 2023). Further, anecdotal reports of overwintering burrowing owls within the survey area have been reported along Talbert Lane (AECOM 2018). The survey area contains marginal and limited nesting habitat for owls; suitably sized small

mammal burrows were largely absent given the large-scale disking within the majority of grassland habitats. However, if agricultural lands are left fallow or unmaintained, small mammals, such as California ground squirrels, may reestablish burrow networks and provide suitable overwintering or breeding habitat for burrowing owls. This species was not observed or detected during field surveys. This species has a moderate potential to occur for nesting and high potential for foraging within grassland habitats of the terrestrial survey area.

Saltmarsh Common Yellowthroat

The saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) prefers freshwater and salt marshes with nearby willow thickets. This species forages on or near the ground, looking for insects and spiders in low vegetation. Females of this species nest in higher marsh ground to avoid flooding and conceal their young with a loose, bulky outer cup of grasses and sedges (*Carex* spp.), sometimes with a roof over the nest. The saltmarsh common yellowthroat is endemic to the greater San Francisco Bay Area and is a year-round resident, with some individuals wintering in San Diego County.

Suitable grassland habitat for nesting and foraging, such as the *Lolium perenne* Herbaceous SNA, is present throughout the terrestrial survey area at the proposed LSPGC Collinsville Substation site and along the proposed LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line. Although this species was not observed during the field surveys, CNDDB occurrences have been documented (CDFW 2023) within 1 mile of the terrestrial survey area south of Suisun Bay in the vicinity of PG&E's existing Pittsburg Substation and within 5 miles the terrestrial survey area north of the Delta. For these reasons, saltmarsh common yellowthroat has a high potential to nest and forage within the terrestrial survey area.

Suisun Song Sparrow

The Suisun song sparrow (*Melospiza melodia maxillaris*), a species endemic to Suisun Marsh, has been associated with tidal channels, particularly in marshes with dominant species of pickleweed and gumplant (*Grindelia* sp.). The diet of this species mainly consists of vegetables and some animal matter. The nests of the Suisun song sparrow can be found in an array of different substrates and dense vegetation. These include gumplant, sedges, rushes, perennial pepperweed, pickleweed, saltgrass, and arrowgrass (*Triglochin maritima*).

The portion of the proposed LSPGC 230 kV Overhead Segment located on the northern shore of the Delta provides suitable marsh habitat for foraging. This species has CNDDB occurrences in nearby marsh habitats within 0.25 mile of the terrestrial survey area (CDFW 2023a) in the vicinity of PG&E's existing Pittsburg Substation and within 5 miles of the terrestrial survey area north of the Delta. Although this species was not detected during field surveys, Suisun song sparrow has a high potential to occur in the terrestrial survey area for both nesting and foraging.

Mammal Species

Salt Marsh Harvest Mouse

The salt marsh harvest mouse (*Reithrodontomys raviventris*) is generally restricted to salt or brackish marshes in the general San Francisco Bay Area. This species is highly associated with

pickleweed in saline soil. This is due to the plant's ability to provide year-round cover from predators, a source of food, and refugia from flooding. Salt marsh harvest mice build nests from dry grasses and sedges on the ground and within dense vegetation.

Salt marsh harvest mouse has a high potential to occur within the terrestrial survey area due to the abundance of suitable habitat within the marshlands north of the Delta at the south tip of the proposed LSPGC 230 kV Overhead Segment. No salt marsh harvest mice were observed during the field survey, but recent CNDDB occurrences have been recorded near and within the terrestrial survey area. Further, there have been recent confirmations of salt marsh harvest mouse presence within 1 mile of the terrestrial survey area based on trapping detections from San Francisco Estuary Institute's (SFEI's) salt marsh harvest mouse database.

Reptile Species

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) can be found from northwestern Washington to central California. Several regulatory agencies, including the USFWS, have recently divided this species and the southwestern pond turtle (*Actinemys pallida*) from the western pond turtle (*Actinemys marmorata*). The CDFW has not adopted the aforementioned taxonomic bifurcation; however, this section and subsequent sections refer to this species as northwestern pond turtle as this species is now proposed for listing at threatened under the federal Endangered Species Act (FESA). Northwestern pond turtles utilize both terrestrial and aquatic habitats, including permanent and seasonal aquatic habitats like rivers, sloughs, lakes, reservoirs, ponds, and irrigation canals. This species nests, winters, disperses, and aestivates on land within 100 feet of a water source. Northwestern pond turtles consume various aquatic plants, insects, small fish, and amphibians.

Suitable wetland habitat is present within the terrestrial survey area along the southernmost part of the proposed LSPGC 230 kV Overhead Segment; however, conditions suitable for nesting were not observed during surveys. Although no observations were made during field surveys, multiple observations have been recorded through CNDDB (CDFW 2023a) within 1 mile of the terrestrial survey area north of the Delta. For these reasons, northwestern pond turtle has a high potential to occur within the terrestrial survey area.

5.4.1.6.3 Species with a Moderate Potential to Occur

Avian Species

California Black Rail

The California black rail (*Lateralis jamaicensis coturniculus*) inhabits saltwater and brackish marshes with pickleweed, sedges, saltgrass, and bulrush. They favor high marsh habitat for breeding but are frequently faced with high and moderate tides in the San Francisco Bay Area. California black rails prefer low-growing forms of vegetation with abundant insects. Their diet consists of small invertebrates and seeds of aquatic plants.

Suitable habitat capable of supporting foraging individuals is present in the terrestrial survey area north of the Delta along the southernmost part of the proposed LSPGC 230 kV Overhead Segment. Wetland habitats within the terrestrial survey area lack large stands of pickleweed and

tidal flux preferred by the species for breeding sites. Although it was not observed during the field survey, this species has been recently documented within 1 mile of the terrestrial survey area near PG&E's existing Pittsburg Substation and within 5 miles of the terrestrial survey area north of the Delta. California black rail has a moderate potential to occur within the terrestrial survey area.

California Ridgway's Rail

The California Ridgway's rail (*Rallus obsoletus obsoletus*) is a highly secretive species that inhabits a range of tidal and brackish marshes, especially those that have significant refugia during high tide. California Ridgway's rail forages during low tide in the middle and low marsh zones that have dense vegetation. Although this species is omnivorous, invertebrates, rodents, and small birds make up the majority of their diet. Dense cover is an important aspect of suitable nesting habitat, as it offers hidden routes to nesting locations. Males typically perform most of the nest building, placing the nest high enough to avoid inundation during high tide.

Suitable foraging habitat is present in the terrestrial survey area north of the Delta along the southern end of the proposed LSPGC 230 kV Overhead Segment. Wetland habitats within the terrestrial survey area lack the large stands of pickleweed and tidal flux preferred by the species. Although it was not observed during the field survey, this species was recently documented within 5 miles of the terrestrial survey area near PG&E's existing Pittsburg Substation along the south shore of the Delta. California Ridgway's rail has a moderate potential to occur within the terrestrial survey area.

California Least Tern

The California least tern (*Strernula antillarum browni*) is typically found in colonies of 25 pairs that nest on relatively open beaches free of vegetation. Breeding season usually begins in May and nests are constructed on bare ground. Roosting individuals forage within 2 miles of their nest location. Adults forage for fish primarily in nearshore ocean waters and in shallow estuaries and lagoons. To avoid humans, this species has been known to move further inland onto mudflats and dredge fill sites.

Suitable nesting habitat for the species does not occur within the terrestrial survey area; however, suitable foraging habitat is present in the open water directly south of the proposed LSPGC 230 kV Overhead Segment. CNDDB occurrences of this species have been documented within 5 miles of the terrestrial survey area (CDFW 2023a). This species was not observed during the field survey, but there is moderate potential for California least tern to occur within the terrestrial survey area.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is found in colonies near a water source and natural grasslands, woodlands, or agricultural croplands. This species has historically been associated with emergent marshes, but they may be found in non-native vegetation and active agricultural areas. Breeding colonies may consist of thousands of birds and may be found in the Central Valley of California and its surrounding foothills. Their diet may include local, abundant food sources, ranging from invertebrates to grains. Tricolored blackbird can be seen foraging in deep, dense grasses and other vegetation.

Although there is limited nesting habitat for this species, suitable foraging habitat such as the *Lolium perenne* Herbaceous SNA exists in the grasslands and croplands along the northern portions of the terrestrial survey area within the sites for the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection. No occurrences have been documented near the terrestrial survey area in more than 30 years, and tricolored blackbirds were not observed during field surveys. Tricolored blackbird has moderate potential to occur in foraging habitat provided by croplands and grasslands.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) feeds mostly on voles and other small, diurnal mammals. For habitat to be considered suitable to the species, it must include undisturbed open grasslands, meadows, farmlands, and emergent wetlands to find prey in and dense canopies for roosting. This species is a resident of coastal and valley lowlands.

Grassland and marsh habitat suitable for foraging is present within the northern portion of the terrestrial survey area along the sites for the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line; however, nesting habitat is limited given the lack of suitable trees. This species has been recently documented near the terrestrial survey area (CDFW 2023a), but it was not observed during field surveys. Therefore, there is moderate potential for white-tailed kite to occur within the terrestrial survey area for the purposes of foraging.

Yellow Rail

The yellow rail (*Corturnicops noveboracensis*) eats small snails, aquatic insects, and seeds found in shallow marshes and wet meadows. Wintering habitat includes freshwater and brackish marshes with dense grass. This species breeds mostly in Canada and the northern U.S. states, often having two nests—one to incubate eggs and another to brood young. Like other rails, this species is highly secretive.

Freshwater marshland habitat required for nesting is not present within the terrestrial survey area. However, salt marsh habitat, suitable for wintering and foraging birds, is present within the terrestrial survey area on the north shore of the Delta along the southernmost part of the proposed LSPGC 230 kV Overhead Segment. Although this species was not observed during the field survey, recent CNDDB occurrences have been recorded within 5 miles of the terrestrial survey area (CDFW 2023a). For these reasons, yellow rail has a moderate potential to occur within the terrestrial survey area north of the Delta.

Mammal Species

Western Red Bat

The western red bat (*Lasiurus blossevillii*) prefers riparian woodlands but is found in a variety of other forest habitats. This bat forages in and around vegetation and in open areas near roosting sites on cicadas (*Cicada* spp.), beetles, wasps, flies, and moths. Roosting sites are primarily located in trees and rock crevices along forest edges adjacent to streams or open fields, but day roosts are sometimes located in orchard trees and buildings. This species makes relatively short migrations within California to summer and winter ranges in the north and south of the state. As

the species prefers riparian woodlands, threats to western red bats include loss of riparian zones, primarily due to agricultural conversion and creation of water storage reservoirs.

Limited suitable tree roosting habitat is present within the terrestrial survey area; however, suitable foraging habitat is present throughout the grassland and marsh habitats north of the Delta along the sites for the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line. Although this species was not observed during field surveys, CNDDB occurrences have been recorded within 5 miles of the terrestrial survey area. There is a moderate potential for western red bat to occur within the terrestrial survey area for the purposes of foraging.

5.4.1.7 Critical Habitat

Critical habitats are areas that are designated for special protection associated with specific federally listed species. California Environmental Quality Act (CEQA) guidelines require that project proponents disclose and mitigate significant impacts to wildlife corridors. For each species, the elements of habitats that support the reproduction, growth, and success of the species are described in the individual critical habitat listings. In determining what areas are critical habitat, agencies consider "those physical or biological features that are essential to the conservation of a given species, including space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species."

Primary constituent elements are the specific physical and biological elements required to promote use of a habitat, and they vary from species to species. For the Proposed Project, the critical habitat areas have been divided into aquatic and terrestrial subsections to better describe the physical and biological features found within the survey areas. The physical and biological features, as well as the primary constituent elements for each species as it pertains to the survey area, are quoted in the following subsections.

5.4.1.7.1 Terrestrial

No critical habitat is found within or near the terrestrial survey area.

5.4.1.7.2 Aquatic

The estuarine, open water habitat within the aquatic study area surrounding the proposed LSPGC 230 kV Submarine Segment is designated as critical habitat for the following four species:

- Chinook salmon Sacramento River winter-run ESU,
- Delta smelt,
- Green sturgeon southern DPS, and
- Steelhead California Central Valley DPS.

In cases such as this, where critical habitat is within a bay or estuary, the extent of critical habitat is defined up to the high tide line. Therefore, the extent of critical habitat extends to all portions of the aquatic study area described as "Open Water" as depicted in Attachment 5.4-C:

Vegetation Communities and Land Cover Types and summarized in Table 5.4-1: Vegetation Communities and Land Cover Types. The following subsections define the essential elements each critical habitat require for the species listed previously.

Chinook Salmon Sacramento River Winter-Run ESU and Steelhead California Central Valley DPS

The primary constituent elements essential for the conservation of both the Chinook salmon Sacramento River Winter-Run ESU and steelhead California Central Valley DPS that are applicable to the Proposed Project are elements 3 and 4, which are quoted as follows (70 Code of Federal Regulations [CFR] 52488):

3. Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival. These features are essential to conservation because without them juveniles cannot use the variety of habitats that allow them to avoid high flows, avoid predators, successfully compete, begin the behavioral and physiological changes needed for life in the ocean, and reach the ocean in a timely manner. Similarly, these features are essential for adults because they allow fish in a non-feeding condition to successfully swim upstream, avoid predators, and reach spawning areas on limited energy stores.

4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation. These features are essential to conservation because without them juveniles cannot reach the ocean in a timely manner and use the variety of habitats that allow them to avoid predators, compete successfully, and complete the behavioral and physiological changes needed for life in the ocean. Similarly, these features are essential to the conservation of adults because they provide a final source of abundant forage that will provide the energy stores needed to make the physiological transition to fresh water, migrate upstream, avoid predators, and develop to maturity upon reaching spawning areas.

Delta Smelt

The physical and biological features for Delta smelt include the following (59 CFR 65256):

- Space for individual and population growth, and for normal behavior;
- Food, water, air, light, minerals, or other nutritional or physiological requirements;
- Cover or shelter;
- Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
- Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The primary constituent elements essential to the conservation of the Delta smelt are:

- Physical habitat;
- Water;
- River flow; and
- Salinity concentrations required to maintain Delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration.

Green Sturgeon

The primary constituent elements essential for the conservation of the green sturgeon southern DPS in estuarine habitats (74 CFR 52299) are:

- Food resources. Abundant prey items within estuarine habitats and substrates for juvenile, subadult, and adult life stages.

- Water flow. Within bays and estuaries adjacent to the Sacramento River (i.e., the Sacramento-San Joaquin Delta and the Suisun, San Pablo, and San Francisco bays), sufficient flow into the bay and estuary to allow adults to successfully orient to the incoming flow and migrate upstream to spawning grounds.

- Water quality. Water quality, including temperature, salinity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages.

- Migratory corridor. A migratory pathway necessary for the safe and timely passage of Southern DPS fish within estuarine habitats and between estuarine and riverine or marine habitats.

- Depth. A diversity of depths necessary for shelter, foraging, and migration of juvenile, subadult, and adult life stages.

- Sediment quality. Sediment quality (i.e., chemical characteristics) necessary for normal behavior, growth, and viability of all life stages.

5.4.1.8 Native Wildlife Corridors and Nursery Sites

5.4.1.8.1 Native Wildlife Corridors

Wildlife migration corridors are areas that connect suitable wildlife habitats in a region that would otherwise be fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features (e.g., canyon drainages, ridgelines, or areas with vegetation cover) provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high-population or high-density areas; and facilitate genetic diversity. CEQA guidelines require that project proponents disclose and mitigate for significant impacts to wildlife corridors. Impacts to wildlife corridors, such as human disturbance and development, can cause harm to migrating species, cause species to exceed population thresholds in fragmented patches, or prevent healthy gene flow between populations. The California Essential Habitat Connectivity Project maintains a statewide

Essential Habitat Connectivity Map, which broadly depicts large, relatively natural habitat blocks that support native biodiversity (Natural Landscape Blocks) and areas essential for ecological connectivity between them (Essential Connectivity Areas) (Spencer et al. 2010). The aquatic and terrestrial survey areas occur outside of any Natural Landscape Blocks or Essential Connectivity Areas (CDFW 2021).

The Proposed Project is located within the Pacific Flyway—an important north-south migration corridor that runs along the Pacific coast of the Americas from Alaska to Patagonia, including all of North America west of the Rocky Mountains. The Pacific Flyway links the breeding grounds to the north with wintering areas to the south and is used by many different species of birds during migration. Many birds (especially waterfowl) use locations in California's Sacramento Valley as a stopover point or wintering area. One of those major locations is Suisun Marsh, which is less than 10 miles from the aquatic and terrestrial survey areas. At the Proposed Project's latitude, the Pacific Flyway extends inland from the Pacific Ocean for approximately 700 miles. As a result, the Proposed Project's aboveground components would be placed in less than 0.3 percent of the width of the Pacific Flyway.

The aquatic study area lies along the migratory corridor for numerous anadromous species, including three ESUs of Chinook salmon, one steelhead species, and three species of lamprey. Adult fish returning from the Pacific Ocean would pass through the aquatic study area at certain times of the year to reach natal streams. Juveniles would also pass through the aquatic study area at other times of the year in route to the Pacific Ocean. As such, these species are only present at certain times of the year.

With the presence of core habitat areas upstream and downstream of the aquatic study area, waters within the aquatic study area function as a corridor for anadromous fish species moving between natal streams and marine habitats.

In the case of more regional species, Delta smelt and longfin smelt both spawn in the Delta and then remain within the local area to rear as juveniles or forage as adults. These species can also make short-distance localized migrations to spawning areas or summer feeding areas but are generally present year-round (Moyle 2002). These species use waters in the aquatic study area as a movement corridor.

5.4.1.8.2 Nursery Sites

Terrestrial nursery sites are areas that function as suitable habitat for juveniles of a wildlife species to occur. The Proposed Project lies within the Pacific Flyway—an important north-south migration corridor that runs along the Pacific coast of the Americas from Alaska to Patagonia, including all of North America west of the Rocky Mountains. The Pacific Flyway links the breeding grounds to the north with wintering areas to the south and is used by many different species of birds during migration. Many birds (especially waterfowl) use locations in California's Sacramento Valley as a stopover point or wintering area. One of those major locations is Suisun Marsh, which is less than 10 miles from the aquatic and terrestrial survey areas. The Proposed Project site does not occur in any terrestrial nursery sites.

Aquatic nursery sites function as rearing or spawning grounds for fish. Within tidal estuaries, submerged aquatic vegetation (SAV) areas are often important nursery sites. Within the Delta, widgeon grass (*Ruppia cirrhosa*) can serve as rearing sites for native fish which take cover within the vegetation. For example, Sacramento splittail spawn on SAV, then larvae rear within the beds for several weeks before schooling together and moving to the Bay (University of California Agricultural and Natural Resources 2023). As such SAV within the aquatic study area is also likely to support nursery sites.

Within the aquatic study area side-scan sonar was used to map and identify the extent of SAV within the aquatic study area. The extent of side scan sonar data was compared to the bathymetric profile of the channel on the most recent navigational charts (NOAA 2023) and the resulting areas where SAV is detected via sonar or has the highest potential to occur are detailed in Attachment 5.4-B: Aquatic Resources Technical Report.

5.4.1.9 Biological Resource Management Areas

A review of the background literature revealed that the aquatic study area is located within and would be regulated as EFH under the Coastal Pelagic Fisheries Management Plan (FMP), Pacific Groundfish FMP, and Pacific Salmon FMP (NOAA Fisheries 2023a). These FMPs are discussed in detail in the Magnuson-Stevens Fishery Conservation and Management Act subsection.

5.4.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.4.2.1 Regulatory Setting

5.4.2.1.1 Federal

Federal Endangered Species Act

The FESA protects plant and wildlife species that are listed as endangered or threatened by the USFWS and NOAA Fisheries.

Under Section 9 of the FESA, any take of endangered wildlife is prohibited; "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 U.S. Code [U.S.C.] 1532[19] and 1538). This can also include the modification of a species' habitat. For plants, pursuant to this statute, it is unlawful to "remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law" (16 U.S.C. 1538[c]).

Under Section 7 of the FESA, federal agencies are required to consult with the USFWS and/or the NOAA Fisheries if the federal action may affect a listed species or designated critical habitat. Through Section 7 consultation and the issuance of a Biological Opinion, the USFWS and/or NOAA Fisheries may include an incidental take statement, allowing for the take of listed species that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Section 10 of the FESA provides for the issuance of incidental take permits for private actions that have no federal involvement through the development of a Habitat Conservation Plan (HCP).

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) recognizes international treaties between the U.S. and other countries that have afforded protection to migratory birds and any of their parts, eggs, and nests, from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The MBTA prohibits acts to "pursue, hunt, take, capture, or kill, or attempt to take, capture, or kill" migratory birds and a range of buying, selling, and transporting activities (16 U.S.C. 703). "Take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue or collect" a bird. Birds, nests, and eggs are all protected. The regulations governing migratory bird permits can be found in Title 50, Part 13 (General Permit Procedures) and Part 21 (Migratory Bird Permits) of the CFR.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) affords additional legal protection to bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). This law prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof (16 U.S.C. 668–668d). The BGEPA also defines "take" to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," and includes criminal and civil penalties for violating the statute. The USFWS further defines the term "disturb" as agitating or bothering an eagle to a degree that causes or is likely to cause injury, or a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior.

Clean Water Act

Section 404

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the USACE before performing any activity involving a discharge of dredged or fill material into waters of the U.S, which include the following:

- Navigable waters of the U.S.,
- Interstate waters,
- All other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce,
- Tributaries to any of these waters, and
- Wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

Section 402

CWA Section 402 regulates construction-related storm water discharges to surface waters through the National Pollutant Discharge Elimination System program, which is administered by the U.S. Environmental Protection Agency (EPA). In California, the State Water Resources Control Board is authorized by the EPA to oversee the program through the RWQCBs. The Proposed Project is within the jurisdiction of the Central Valley RWQCB (Region 5).

Section 401

Under CWA Section 401(a)(1), the applicant for a federal license or permit to conduct an activity that may result in a discharge into waters of the U.S. must provide the federal licensing or permitting agency with a certification that any such discharge would not violate state water quality standards. The RWQCBs administer the Section 401 program to prescribe measures for projects that are necessary to avoid, minimize, and mitigate adverse effects on water quality and ecosystems.

Plant Protection Act of 2000

Some non-native plant species are officially categorized as "noxious weeds" because they are highly invasive or interfere with an area's management objectives, or both. Both the federal and state governments maintain lists of plants that are considered threats to the well-being of the nation or the state. The Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.; 88 Stat. 2148), established a federal program to control the spread of noxious weeds. The act was superseded by the federal Plant Protection Act of 2000 (7 U.S.C. 7701 et seq.; 114 Stat. 438), which consolidated and modernized all major statutes pertaining to plant protection and quarantine (e.g., the Federal Noxious Weed Act and Plant Quarantine Act).

The Plant Protection Act revised the original definition of a "noxious weed" as listed in the Federal Noxious Weed Act to include the following:

> "any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment."

Under the Plant Protection Act, the Secretary of Agriculture was authorized to designate plants as "noxious weeds" by regulation, and to prohibit or restrict all such weeds from entering the U.S. or moving through interstate commerce. The Secretary of Agriculture was also given authority to inspect, seize, and destroy products and to quarantine areas, if necessary, to prevent the spread of such weeds. The Secretary of Agriculture was also authorized to cooperate with other federal, state, and local agencies, farmers' associations, and private individuals in measures to control, eradicate, or prevent or retard the spread of such weeds.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S. and is administered by NOAA Fisheries. The act established a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of EFH. EFH

consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., sago pondweed [*Stuckenia filiformis*] or ditch-grass [*Ruppia maritima*]/widgeon grass), and complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NOAA Fisheries.

A review of the background literature revealed that the aquatic study area is located within and would be regulated as essential fish habitat (EFH) for the following three FMPs (NOAA Fisheries 2023a):

- The Coastal Pelagic FMP (Pacific Fishery Management Council [PFMC] 2021) is designed to protect habitat for migratory pelagic species such as Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), market squid (*Doryteuthis opalescens*), jack mackerel (*Trachurus symmetricus*), and various species of krill or euphausiids. The east-west geographic boundary of EFH for coastal pelagic species is defined as all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the exclusive economic zone and above the thermocline where sea surface temperatures range between 10°C and 26°C. Species most likely to occur in the aquatic study area include northern anchovy and Pacific sardine (WRA 2023)

- The Pacific Groundfish FMP (PFMC 2022a) is designed to protect habitat for approximately 80 species of fish, including various species of flatfish, rockfish, groundfish, and several species of sharks and skates. EFH for Pacific coast groundfish is defined as the aquatic habitat necessary to allow groundfish production to support long-term sustainable fisheries for groundfish and for groundfish contributions to a healthy ecosystem. Species most likely to occur in the aquatic study area and the Delta include starry flounder (*Platichthys stellatus*) and English sole (*Pleuronectes vetulus*) (NOAA Fisheries 2020).

- The Pacific Salmon GMP (PFMC 2022b) is designed to protect habitat for commercially important salmonid species (specifically Chinook salmon and Coho salmon [*Oncorhynchus kisutch*]) occurring within the aquatic study area. While Coho salmon are extirpated from San Francisco Bay and its tributaries (WRA 2023), Three ESUs of Chinook salmon would be seasonally present within waters surrounding the aquatic study area. In the estuarine and marine areas, Chinook salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone 200 miles offshore of California north of Point Conception.

Along the West Coast, the PFMC also identifies habitats that fall within Habitat Areas of Particular Concern (HAPCs). HAPCs are high-priority areas for conservation, management, or research because they are important to ecosystem function, sensitive to human activities, stressed by development, or rare. These areas provide important ecological functions and/or are especially vulnerable to degradation and can be designated based on either specific habitat types

or discrete areas. HAPCs are a discrete subset of EFH. The following HAPCs are relevant to the Proposed Project:

- HAPCs for Chinook salmon include complex channel and floodplain habitat, spawning habitat, thermal refugia, estuaries, and SV as described in Appendix A to the Pacific Salmon FMP (PFMC 2022b).

- Within the aquatic study area, only "estuary" habitat is present among the HAPCs listed by the salmon FMP.

- HAPCs for Pacific coast groundfish are estuaries, rocky reefs, canopy-forming kelp, seagrasses, and "areas of interest" as described in Amendment 19 to the Pacific Groundfish FMP (PFMC 2022a).

5.4.2.1.2 State

California Fish and Game Code Sections 1600-1617

California Fish and Game Code Section 1600 et seq. sets forth guidelines for the protection and conservation of fish and wildlife, including habitat. The law requires any person, state or local governmental agency, or public utility to provide written notification to the CDFW before beginning an activity that would substantially modify the bank or bed of a river, stream, or lake (prior to causing any potential hydrological impacts), and enter into Lake or Streambed Alteration Agreement (LSAA) with the CDFW that includes measures to protect fish and wildlife resources.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515

California first began to designate species as "fully protected" prior to the creation of the California Endangered Species Act (CESA) and the FESA. Lists of fully protected species were initially developed to provide protection to animals (i.e., fish, amphibians, reptiles, birds, and mammals) that were rare or facing possible extinction. Most fully protected species have since been listed as threatened or endangered under the CESA and/or the FESA. Fully protected species may not be taken or possessed at any time, and incidental take permits cannot be issued for these species (California Fish and Game Code Section 4700).

California Fish and Game Code Sections 3503, 3503.5, and 3513

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 specifies these protections for birds in the orders Falconiformes and Strigiformes (i.e., raptors). Section 3513 also makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans, also known as basin plans. Each basin plan establishes numerical or

narrative water quality objectives to protect established beneficial uses, which include wildlife, fisheries, and their habitats. Projects that affect wetlands or waters of the state, including groundwater, must meet the discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

Native Plant Protection Act (California Fish and Game Code Sections 1900-1913)

The Native Plant Protection Act (NPPA) (California Fish and Game Code Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW. The California Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect them from take. The NPPA also stipulates that no person may take or possess any endangered or rare native plant, or any part or product thereof. However, this does not apply to the removal of endangered or rare native plants within a right-of-way (ROW) by the owner of the land or the owner's agent, nor does it apply to the obligation of a publicly or privately owned public utility to provide service to the public.

California Code of Regulations (Title 14, Sections 251.1, 670.2, and 670.5)

Title 14, Section 251.1 of the California Code of Regulations restricts the harassment of nongame birds and mammals. Harassment is defined as an intentional act that disrupts an animal's normal behavior patterns, which includes, but is not limited to breeding, feeding, or sheltering. Sections 670.2 and 670.5 list animals designated as "threatened" or "endangered" in California. Species of Special Concern (SSC) is a category conferred by the CDFW on species that are indicators of regional habitat changes or that are considered potential future protected species. SSCs do not have any special legal status, but this category is intended as a management tool to take these species into special consideration when decisions are made concerning the future of any owned parcel.

5.4.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order (GO) 131-D, Section XIV.B (CPUC 1995):

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county regulations are not applicable as the counties through which the Proposed Project would pass do not have jurisdiction over the Proposed Project. This section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan Conservation Element and Open Space Element (Solano County 2008) include the following policies that may be applicable to resources affected by the Proposed Project:

- Policy RS.P-1: Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections.
- Policy RS.P-2: Manage the habitat found in natural areas and ensure its ecological health and ability to sustain diverse flora and fauna.
- Policy RS.P-3: Focus conservation and protection efforts on high-priority habitat areas depicted in Figure RS-1 [of the Solano County General Plan].
- Policy RS.P-4: Together with property owners and federal and state agencies, identify feasible and economically viable methods of protecting and enhancing natural habitats and biological resources.
- Policy RS.P-5: Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.
- Policy RS.P-6: Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way.
- Policy RS.P-7: Preserve and enhance the diversity of habitats in marshes, Delta to maintain these unique wildlife resources.
- Policy RS.P-8: Protect marsh waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland and grasslands because they are critical habitats for marsh-related wildlife and are essential to the integrity of the marshes.
- Policy RS.P-9: Encourage restoration of historic marshes to wetland status, either as tidal marshes or managed wetlands. When managed wetlands are no longer used for waterfowl hunting, restore them as tidal marshes.

Habitat Conservation Plans

Solano County Water Agency Solano Multispecies Habitat Conservation Plan

In October 2012, the Solano County Water Agency (SCWA) published a draft of the Solano Multispecies HCP (SCWA 2012), but the HCP has not yet been adopted. The draft HCP establishes a framework for complying with federal and state endangered species regulations while accommodating future urban growth, infrastructure development, and ongoing O&M for flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the plan participants in Solano County over the next 30 years (SCWA 2012). A total of 37 species are proposed to be covered under the HCP.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The East Contra Costa County Habitat Conservancy (ECCCHC) intends to use the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCC HCP/NCCP) (ECCCHC 2007) to protect natural resources in eastern Contra Costa County while improving environmental permitting processes for impacts to endangered species and contributing to their recovery. The ECCC HCP/NCCP covers the cities of Clayton, Pittsburg, Antioch, Oakley, and Brentwood, and the unincorporated areas between those cities. PG&E's existing Pittsburg Substation falls within the ECCC HNCCP. The ECCC HCP/NCCP addresses comprehensive species, wetlands, and ecosystem conservation. Agencies involved with approving permits for endangered species within the county must request from USFWS and California Department of Fish and Game (CDFG) authorization of 30-year take permits for species covered under FESA and the Natural Community Conservation Planning Act.

Within the Proposed Project area, this HCP/NCCP covers wetlands along the Sacramento River and ecosystems landward and south of the Sacramento River. No species that are listed in Attachment 5.4-E: Special-Status Terrestrial Wildlife Species with the Potential to Occur or Attachment 5.4-F: Special-Status Aquatic Wildlife Species with the Potential to Occur and are covered by this HCP/NCCP have a moderate to high potential to occur within Proposed Project construction areas and the boundaries of this HCP/NCCP.

Pacific Gas and Electric Company Bay Area Operations and Maintenance Habitat Conservation Plan

This HCP is intended to avoid, minimize, and mitigate temporary and permanent impacts to threatened and endangered species resulting from PG&E's O&M and minor new construction activities in the HCP area. It additionally provides the basis for incidental take authorization pursuant to the FESA for PG&E's current and future O&M activities and minor new construction in the Plan HCP area.

The HCP covers salt marsh harvest mouse, which has high potential to occur within the terrestrial survey area.

5.4.3 Impact Questions

5.4.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For biological resources, the CEQA Checklist asks if the Proposed Project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

5.4.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA Impact Questions are required for biological resources. Would the Proposed Project:

- Create a substantial collision or electrocution risk for birds or bats?

5.4.4 Impact Analysis

The impact analysis that follows has been subdivided by impacts to terrestrial and aquatic habitats, as appropriate.

5.4.4.1 Biological Resources Impact Analysis

5.4.4.1.1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Construction - Terrestrial

LSPGC Components

Less-than-Significant Impact. The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line (Terrestrial LSPGC Proposed Project components) would result in permanent impacts to terrestrial habitats of approximately 12.5 acres (including 12.4 acres of various natural vegetation alliances, less than 0.1 acre of ornamental vegetation, less than 0.1 acre of disturbed habitat, and less than 0.1 acre of developed habitat), as well as temporary impacts to approximately 56.8 acres (including 48.5 acres of vegetation alliances, 5.1 acres of disturbed habitat, and 3.2 acres of developed habitat). These impacts are detailed in Table 5.4-8: Impacts by Vegetation Community and Land Cover.

Table 5.4-8: Impacts by Vegetation Community and Land Cover

Vegetation Community or Land Cover Type Name	Approximate LSPGC Proposed Project Component Impacts (acres)		Approximate PG&E Proposed Project Component Impacts (acres)		Approximate Shared PG&E and LSPGC Proposed Project Component Impacts (acres)		Approximate Total Impacts (acres)	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Terrestrial								
Annual Grassland: *Brassica nigra – Centaurea* (*solstitialis*, *melitensis*) Herbaceous SNA *Lolium perenne* Herbaceous SNA *Lepidium latifolium – Lactuca serriola* Herbaceous SNA	38.6	11.4	22.8	0.5	8.8	1.0	70.2	12.9
Saltgrass: *Distichlis Spicata* Herbaceous Alliance (S4)	0.2	<0.1	0.2	0.1	0.2	0.0	0.5	0.1
Pickleweed: *Frankenia salina* Herbaceous Alliance (S3) *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance (S3)	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Bulrush: *Schoenoplectus* (*acutus*, *californicus*) Herbaceous Alliance (S3S4) *Schoenoplectus acutus*/*Rosa californica* Association *Schoenoplectus americanus* Herbaceous Alliance	0.4	<0.1	0.0	0.0	0.0	0.0	0.4	<0.1

Vegetation Community or Land Cover Type Name	Approximate LSPGC Proposed Project Component Impacts (acres)		Approximate PG&E Proposed Project Component Impacts (acres)		Approximate Shared PG&E and LSPGC Proposed Project Component Impacts (acres)		Approximate Total Impacts (acres)	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Cattail: *Typha* (*angustifolia*, *domingensis*, *latifolia*) Herbaceous Alliance	0.0	0.0	<0.1	<0.1	0.0	0.0	<0.1	<0.1
Ornamental Vegetation	<0.1	<0.1	0.0	0.0	0.0	0.0	<0.1	<0.1
Developed: Developed Rip Rap	3.2	<0.1	<0.1	<0.1	0.0	0.0	3.2	<0.1
Disturbed: Disturbed Bare Ground	5.1	<0.1	10.8	<0.1	0.2	<0.1	16.0	0.1
Aquatic								
Benthic Habitat	49.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total*	**96.9**	**11.7**	**33.7**	**0.5**	**9.2**	**1.0**	**90.7**	**13.2**

*Due to rounding, totals may not sum.

All terrestrial areas that would be temporarily disturbed by Terrestrial LSPGC Proposed Project component activities would be restored to approximate pre-construction conditions or better. Work areas would be decompacted, and salvaged topsoil materials would be re-spread following recontouring to aid in restoration of temporary disturbed areas, in accordance with applicant-proposed measure (APM) GEO-1. Per APM BIO-1, biological resources surveys would be conducted prior to construction for any Terrestrial LSPGC Proposed Project component activities areas that were not previously surveyed, which may include areas where landowner permission was not obtained and/or new or modified staging areas, pull sites, or other work areas. The findings of these surveys would be provided to the CPUC prior to construction occurring in Terrestrial LSPGC Proposed Project component areas that were not previously surveyed.

Erosion control measures would be implemented in accordance with the Proposed Project's Storm Water Pollution Prevention Plans (SWPPPs) and APMs recommended herein. Prior to construction, a restoration and revegetation plan (restoration plan) would be prepared. The restoration plan would address any requirements for restoration and revegetation, as well as the potential preparation of the property for proposed utility uses in accordance with APM BIO-2. The restoration plan would be approved by the CPUC before implementation.

Temporarily disturbed terrestrial areas would be revegetated with appropriate weed-free native seed mixes or species that are characteristic of the plant community that was disturbed. To further reduce impacts to special-status species and natural communities, a Worker's Environmental Awareness Program (WEAP) would be implemented to educate all construction workers on site-specific biological and non-biological resources and proper work practices to avoid harming plants or wildlife during construction in accordance with APM BIO-3.

Special-Status Plant Species

Five special-status plant species were determined to be present or to have a high potential to occur within the terrestrial survey area: Welsh mudwort (CRPR 2B.1), Delta tule pea (CRPR 1B.2), Mason's lilaeopsis (CRPR 1B.2), Bolander's water hemlock (CRPR 2B.1), and Suisun marsh aster (CRPR 1B.2). Two special-status plant species—Mason's lilaeopsis and Welsh mudwort—were found within the herbaceous layers of the *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance and *Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance. Delta tule pea was found within the *Rosa californica* Shrubland Alliance and *Schoenoplectus acutus/rosa californica* Association in terrestrial areas north of the Delta and was also observed growing in terrestrial areas south of the Delta along chain-link fencing near the water's edge. No special-status plant species were determined to have a moderate potential to occur within the terrestrial survey area.

The footprint of the proposed LSPGC Collinsville Substation and portions of the proposed LSPGC 230 kV Overhead Segment would primarily be located on grazed land and actively maintained fields, reducing the potential for special-status plant species occurrence. However, constructing the Terrestrial LSPGC Proposed Project components may cause a loss of microhabitats, which are small areas that differ from the surrounding habitat, that contain suitable conditions for the special-status plants discussed in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur. Additionally, while the proposed LSPGC 230 kV Overhead Segment would cross and impact multiple wetland features, wetland areas supporting

special-status plants would be clearly delineated, marked, and avoided by construction activities to the extent feasible per APM BIO-4. Adherence to this APM would reduce the likelihood of occurrence and the potential risk to special-status plants that may be found in the vicinity of wetland habitats to a less-than-significant level. No populations or individuals of special-status plants that were observed within the terrestrial survey area would be impacted by the Terrestrial LSPGC Proposed Project components activities; they would be avoided per APM BIO-4.

Direct impacts to special-status plants may include destruction of individual plants. Indirect impacts to special-status plant species may include soil compaction, fugitive dust, fuel spills, erosion effects, an increase in ground surface disturbance, loss of areas that contain suitable microhabitat conditions for special-status plants, and introduction of non-native weed species that may out-compete these plants. Impacts to special-status plants would be avoided by siting Terrestrial LSPGC Proposed Project components in areas that do not contain special-status species and by delineating special-status plant occurrences in the vicinity of the Proposed Project in accordance with APM BIO-4. Pre-construction surveys would be conducted during the appropriate blooming period to identify and avoid impacts to special-status plants, in accordance with APM BIO-5. All construction activities that may result in take of special-status plants would be monitored by a qualified biologist in accordance with APM BIO-6. In addition, vehicles that would travel outside of approved access roads/designated parking areas would be cleaned prior to their initial arrival on site to reduce the potential to spread noxious weeds, in accordance with APM BIO-7. With the implementation of APMs, direct and indirect impacts to special-status plant species would be reduced. As a result, impacts would be less than significant.

Special-Status Terrestrial Wildlife Species

The following 14 special-status wildlife species were determined to be present or to have a moderate or high potential to occur within the terrestrial survey area:

- Burrowing owl (SSC, BCC),
- California black rail (ST, SSC, BCC),
- California least tern (FE, SE, SSC, BCC),
- California Ridgway's rail (FE, SE, FP),
- Northern harrier (SSC, BCC),
- Northwestern pond turtle (PT, SSC),
- Salt marsh harvest mouse (FE, SE, FP),
- Saltmarsh common yellowthroat (SSC, BCC),
- Suisun song sparrow (SSC),
- Swainson's hawk (ST),
- Tricolored blackbird (ST, SSC, BCC),
- Western red bat (SSC, WBWG-H),
- White-tailed kite (FP), and
- Yellow rail (SSC, BCC).

Two special-status avian species—northern harrier and Swainson's hawk—were observed within the terrestrial survey area in the vicinity of the proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment. An active northern harrier nest was observed within the terrestrial survey area with two parents tending and delivering food to nestlings. The nest is

situated on the ground within the emergent vegetation of wetland feature W-2, as depicted in Attachment 5.4-C: Vegetation Communities and Land Cover Types. This species was also observed foraging within the immediate vicinity of this nest. Further, a Swainson's hawk individual was observed during the field survey foraging in upland grassland and cropland in the vicinity of the proposed LSPGC Collinsville Substation.

The current level of disturbance and human activity associated with the Terrestrial LSPGC Proposed Project components area is high. The proposed LSPGC Collinsville Substation and portions of the proposed LSPGC 230 kV Overhead Segment would be situated within actively maintained non-native grasslands. Further, at the time of survey, these areas were undergoing extensive ground disturbance associated with the SMUD Solano 4 Wind Project. The southern portion of the proposed LSPGC 230 kV Overhead Segment would traverse special-status wildlife habitat; however, a large amount of similar habitat exists in the vicinity of the Terrestrial LSPGC Proposed Project components; therefore, the permanent conversion of less than 0.1 acre of potentially suitable habitat for special-status wildlife species would not result in significant impacts to the species. A description of potential impacts by species (i.e., salt marsh harvest mouse and northwestern pond turtle) and species category (i.e., avian and bat species) is provided in the following subsections.

Salt Marsh Harvest Mouse

Direct impacts from the Terrestrial LSPGC Proposed Project components to salt marsh harvest mouse may occur from potential vehicle strikes during construction, the destruction of nests during vegetation removal and excavation associated with construction, entrapment in excavations, or the temporary loss of approximately 0.4 acre of potentially suitable foraging and nesting pickleweed habitat.

Temporary impacts to approximately 0.4 acre of potentially suitable foraging habitat would be restored in accordance with APM BIO-2. The high quantity of similar and adjacent pickleweed habitat in the region would provide sufficient suitable alternative habitat for these species. To reduce impacts to this species during construction, a WEAP would be implemented to educate all construction workers on proper work practices to avoid harming salt marsh harvest mouse in accordance with APM BIO-3.Throughout construction, vehicles would stay on established roadways and within disturbance areas and the speed would be limited to 15 miles per hour (mph), in accordance with APM BIO-8, minimizing the risk of vehicle strikes. The salt marsh harvest mouse would likely avoid work areas during construction activities due to the increased noise and activity. All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species in accordance with APM BIO-9. All work areas within the Terrestrial LSPGC Proposed Project components area would be clearly delineated with fencing, staking, or flags prior to construction. Construction activities would be restricted to delineated work areas and all delineation would be maintained in working order until the completion of construction to prevent inadvertent impacts to habitats and wildlife outside of work areas in accordance with APM BIO-10.

Indirect impacts to salt marsh harvest mouse during construction may include the decreased suitability of habitat in the vicinity of the Terrestrial LSPGC Proposed Project components caused by factors such as soil compaction, increased noise from construction activities and vehicles, fuel spills, increased human activity, increased human-subsidized predator presence (e.g., ravens [*Corvus corax*] and coyotes [*Canis latrans*]), and introduction of non-native weed species that may decrease foraging suitability in existing habitat. Noise from construction activities can affect wildlife in multiple ways, such as depressing breeding success by acoustical masking and interfering with foraging activities. Construction activities may disrupt breeding and foraging activities or cause individuals to vacate their nests, endangering young and exposing adults to predation. However, noise during construction activities is expected to be short-term in nature and minimal. Nighttime lighting within the work area would be shielded, oriented downward, and directed away from habitat suitable for salt marsh harvest mouse occupation in accordance with APM BIO-12. This species was not observed during field surveys; however, given the high potential for salt marsh harvest mouse within the terrestrial survey area and corroborating observation records in CNDDB and SFEI, surveys for this species should not be required, as presence for this species can be assumed within suitable habitats. For this reason, work within suitable pickleweed habitats would be avoided to the maximum extent feasible in accordance with APM BIO-2 and pre-construction clearance surveys would be conducted in accordance with APM BIO-11 to encourage mice residing within or adjacent to the Proposed Project work areas to move into adjacent habitats prior to impacts commencing each day.

Accordingly, direct and indirect impacts would be less than significant with the implementation of APMs BIO-2, BIO-3, and BIO-8 through BIO-12.

Northwestern Pond Turtle

Direct impacts to northwestern pond turtle that may be caused by the Proposed Project may result from potential vehicle strikes during construction, destruction of nest sites during construction and vegetation-clearing activities, entrapment in excavations, the permanent conversion of less than 0.1 acre of bulrush and associated wetland habitat, and temporary conversion of approximately 0.4 acre of potentially suitable foraging habitat.

The permanent conversion of less than 0.1 acre of potentially suitable foraging habitat would be unavoidable, but temporary impacts to approximately 0.4 acre of potentially suitable foraging habitat would be restored in accordance with APM BIO-2. The high quantity of similar bulrush and associated wetland habitat in the region would help minimize the potential for impacts to northwestern pond turtle caused by this loss of habitat. Pre-construction sweeps, in accordance with APM BIO-11, would help to identify any individuals or nest sites of this species. To reduce impacts to this species during construction, a WEAP would be implemented to educate all construction workers on proper work practices to avoid harming northwestern pond turtle in accordance with APM BIO-3. Throughout construction, vehicles would stay on established roadways and within disturbance areas and the speed limit would be 15 mph, in accordance with APM BIO-8, minimizing the risk of vehicle strikes. Turtles would likely avoid the construction area during construction activities due to the increased noise and activity. All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species, in accordance with APM BIO-9. All work areas within the Terrestrial LSPGC Proposed Project components

area would be clearly delineated with fencing, staking, or flags prior to construction. Construction activities would be restricted to delineated work areas and all delineation would be maintained in working order until the completion of construction to prevent inadvertent impacts to habitats and wildlife outside of work areas, in accordance with APM BIO-10.

Indirect impacts to northwestern pond turtle during construction may include decreased suitability of habitat in the vicinity of the Proposed Project caused by factors such as increased noise from construction activities, vehicular traffic, and increased human activity. Noise from construction activities can affect wildlife in multiple ways, such as depressing breeding success by acoustical masking and interfering with foraging activities. Construction activities may disrupt breeding and foraging activities or cause individuals to flush from vegetation cover or basking sites, exposing them to predation and disrupting thermal regulation, respectively. However, noise during construction activities is expected to be short-term in nature and minimal. Nighttime lighting within the work area would be shielded, oriented downward, and directed away from habitat suitable for northwestern pond turtle occupation in accordance with APM BIO-12. Suitable aquatic habitat and vegetation cover were observed during field surveys but were not observed to be occupied by this species.

Accordingly, direct and indirect impacts would be less than significant and would be avoided or further minimized by the implementation of APMs BIO-2, BIO-3, and BIO-8 through BIO-12.

Avian and Bat Species

Direct impacts to special-status avian (e.g., burrowing owl, California black rail, California Ridgway's rail, California least tern, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, Swainson's hawk, tricolored blackbird, white-tailed kite, and yellow rail) and bat species (e.g., western red bat) may include potential vehicle strikes during construction; removal of vegetation (including trees) or transmission poles that house nests or roosting sites during construction; collision and electrocution risk from power lines and other Terrestrial LSPGC Proposed Project components; the permanent conversion of approximately 12.4 acres of annual grassland, bulrush, cattail, saltgrass, and pickleweed habitat potentially suitable for nesting/roosting and foraging; and the temporary disturbance of approximately 48.5 acres of annual grassland, bulrush, cattail, saltgrass, and pickleweed habitat potentially suitable for foraging and nesting/roosting. Burrowing owls may use suitably sized rodent burrows for nesting within annual grasslands. California black rail, California Ridgway's rail, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, tricolored blackbird, and yellow rail may use emergent marsh vegetation and dense grasses and forbs for nesting, while other raptor, passerine, and bat species may use trees or transmission structures within the terrestrial survey area and the in-river transition structure associated with the proposed LSPGC 230 kV Submarine Segment for nest construction or roost sites. Burrowing owls may use rodent burrows within the terrestrial survey area for breeding or overwintering, but may also nest or roost in man-made burrow surrogates (e.g., drainage culverts). All of the avian and bat species listed in this subsection may use the terrestrial survey area for foraging purposes.

The permanent conversion of approximately 12.4 acres of potentially suitable foraging habitat for all special-status avian and bat species listed in this subsection (as well as nesting habitat for California black rail, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, tricolored blackbird, and yellow rail) is unavoidable, but temporary impacts to approximately

48.5 acres of potentially suitable foraging habitat would be restored in accordance with APM BIO-2. The high quantity of similar annual grassland, bulrush, cattail, saltgrass, and pickleweed habitats in the region would help minimize the potential for impacts to special-status avian species caused by the loss of these habitats. Additional similar tree nesting sites for raptor species exist within these habitats and additional similar nesting habitats for raptors exist on transmission line towers north and south of the Proposed Project. Tree trimming and removal and brush and weed control may result in bird nest disruption or destruction or the abandonment or mortality of bat day roosts or maternity roosts. In accordance with APMs BIO-11, BIO-13, and BIO-14, pre-construction surveys would help to identify any trees, vegetation, or burrows that may be housing nests or bat roosts so that these nests/roosts can be avoided during construction. Burrowing owl surveys, in accordance with APM BIO-14, would also identify any occupied overwintering burrows for avoidance. If work within pickleweed or bulrush habitat suitable for California black rail or California Ridgway's rail occupation is scheduled between January 16 and August 31, wetland bird surveys would be conducted in accordance with APM BIO-15. All construction activities that may result in take of bird nests and bat roosts would be monitored by a qualified biologist in accordance with APM BIO-6. Vegetation removal would also be minimized in accordance with APM BIO-16.

To reduce impacts to these species during construction, a WEAP would be implemented to educate all construction workers on proper work practices to avoid harming nesting birds and roosting bats during construction in accordance with APM BIO--3. Throughout construction, vehicles would stay on established roadways and within areas of disturbance; the speed limit would be 15 mph, in accordance with APM BIO-8, minimizing the risk of vehicle strikes or crushing of ground-nesting avian nests. Avian and bat species would likely temporarily avoid the work area during construction activities due to the increased noise and activity. PG&E's existing transmission infrastructure already creates collision risks for avian and bat species, and the number of tall structures in the area would be increased by the construction of the proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment. As described in Chapter 3 – Project Description, all Terrestrial LSPGC Proposed Project components would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee [APLIC] 2006), as applicable. The risks of collision and electrocution associated with this increase would be minimized by spacing conductors and ground wires sufficiently so that raptors cannot contact two conductors or one conductor and a ground wire at the same time and by designing and constructing towers to reduce the risk of avian collision. Further, all transmission and distribution facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), thus reducing potential impacts to avian movement to be less than significant.

Indirect impacts to special-status avian and bat species during construction may include decreased suitability of habitat in the vicinity of the Proposed Project caused by factors such as increased noise from construction activities and vehicles, nighttime lighting installed within work areas, and increased human activity. Noise from construction activities can affect avian and bat species in multiple ways, such as depressing breeding success by acoustical masking, interfering with intra-specific communication, and interfering with the detection of predators. Construction activities may disrupt breeding and foraging activities, prevent birds from tending

to nests, or cause birds to flush from their nests, endangering eggs and chicks. Noise during construction activities is expected to be short-term in nature and minimal. Nighttime lighting within the work area would be shielded, oriented downward, and directed away from active nest or roost sites. These impacts would be minimized through implementation of APMs BIO-4 and BIO-12. Active nests and bat roosts that may be discovered during pre-construction surveys would be monitored and avoided or removed per APMs BIO-13 and BIO-17. In the event that an active burrowing owl burrow is discovered, a Burrowing Owl Exclusion Plan would be developed by a qualified biologist and, if necessary, passive relocation techniques would be employed in coordination with the CDFW and in accordance with APM BIO-14. Within pickleweed or bulrush habitat suitable for California black rail or California Ridgway's rail occupation, work would be limited to the period of September 1 through January 15 to the greatest extent feasible (i.e., outside of the breeding season for these species), in accordance with APM BIO-15.

Accordingly, direct and indirect impacts would be less than significant and would be avoided or further minimized by the implementation of APMs BIO-2 through BIO-4, BIO-6, BIO-8, and BIO-10 through BIO-17. These measures would also further reduce the less-than-significant impacts to other avian and bat species that have a low potential to occur within the terrestrial survey area.

PG&E Components

Less-than-Significant Impact. The proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line (PG&E Proposed Project components) would result in permanent impacts to terrestrial habitats of approximately 1.5 acres (including 1.5 acres of various natural vegetation alliances, less than 0.1 acre of disturbed habitat, and less than 0.1 acre of developed habitat), as well as temporary impacts to approximately 42.7 acres (including 32.0 acres of vegetation alliances, 10.8 acres of disturbed habitat, and less than 0.1 acre of developed habitat). These impacts are detailed in Table 5.4-8: Impacts by Vegetation Community and Land Cover.

All terrestrial areas that would be temporarily disturbed by PG&E Proposed Project component activities would be restored to approximate pre-construction conditions or better. Work areas would be decompacted, and salvaged topsoil materials would be re-spread following recontouring to aid in restoration of temporary disturbed areas, in accordance with construction measure (CM) GEO-1.

Erosion control measures may be required and would also be implemented in accordance with the Proposed Project's SWPPPs and CMs recommended herein. Temporarily disturbed terrestrial areas would be revegetated with appropriate weed-free native seed mixes, in accordance with CM BIO-2. To further reduce impacts to special-status species and natural communities, an HCP training would be implemented to educate all construction workers on site-specific biological and non-biological resources and proper work practices to avoid harming plants or wildlife during construction, in accordance with CM BIO-3.

Special-Status Plant Species

The following five special-status plant species were determined to be present or to have a high potential to occur within the terrestrial survey area:

- Welsh mudwort (CRPR 2B.1),
- Delta tule pea (CRPR 1B.2),
- Mason's lilaeopsis (CRPR 1B.2), B,
- Bolander's water hemlock (CRPR 2B.1), and
- Suisun marsh aster (CRPR 1B.2).

However, permanent conversion or temporary disturbance of habitat that is potentially suitable for these species is not anticipated during construction of the PG&E Proposed Project components.

The footprint of the proposed PG&E Proposed Project components would primarily be located on grazed land and actively maintained fields, thus reducing the potential for special-status plant species occurrence. However, constructing the PG&E Proposed Project components may cause a loss of microhabitats (i.e., small areas that differ from the surrounding habitat) that contain suitable conditions for the special-status plants discussed in Attachment 5.4-D: Special-Status Plant Species with the Potential to Occur. No populations or individuals of special-status plants that were observed within the terrestrial survey area would be impacted by PG&E Proposed Project components activities; they would be avoided per CM BIO-4.

Direct impacts to special-status plants may include destruction of individual plants. Indirect impacts to special-status plant species may include soil compaction, fugitive dust, fuel spills, erosion effects, an increase in ground surface disturbance, loss of areas that contain suitable microhabitat conditions for special-status plants, and introduction of non-native weed species that may outcompete these plants. Pre-construction surveys would be conducted during the appropriate blooming period to identify and avoid impacts to special-status plants, in accordance with CM BIO-5. All construction activities that may result in take of special-status plant habitats would be monitored by a qualified biologist to ensure that these activities do not result in unauthorized take of special-status plant species, in accordance with CM BIO-6. In addition, vehicles that would travel outside of approved access roads/designated parking areas would be cleaned prior to their initial arrival on site to reduce the potential to spread noxious weeds, in accordance with CM BIO-7. With the implementation of CMs, direct and indirect impacts to special-status plant species would be reduced. As a result, impacts would be less than significant.

Special-Status Terrestrial Wildlife Species

The following 14 special-status wildlife species were determined to be present or to have a moderate or high potential to occur within the terrestrial survey area:

- Burrowing owl (SSC, BCC),
- California black rail (ST, SSC, BCC),
- California least tern (FE, SE, SSC, BCC),
- California Ridgway's rail (FE, SE, FP),
- Northern harrier (SSC, BCC),

- Northwestern pond turtle (PT, SSC),
- Salt marsh harvest mouse (FE, SE, FP),
- Saltmarsh common yellowthroat (SSC, BCC),
- Suisun song sparrow (SSC),
- Swainson's hawk (ST),
- Tricolored blackbird (ST, SSC, BCC),
- Western red bat (SSC, WBWG-H),
- White-tailed kite (FP), and
- Yellow rail (SSC, BCC).

The current level of disturbance and human activity associated with the PG&E Proposed Project components area is high. The PG&E 500 kV Interconnection and portions of the PG&E 12 kV Distribution Line would be situated within actively maintained non-native grasslands. Further, at the time of the survey, these areas were undergoing extensive ground disturbance associated with the SMUD Solano 4 Wind Project. A description of potential impacts by species category (i.e., avian and bat species) is provided in the following subsections.

Avian and Bat Species

Direct impacts to special-status avian (e.g., burrowing owl, California black rail, California Ridgway's rail, California least tern, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, Swainson's hawk, tricolored blackbird, white-tailed kite, and yellow rail) and bat species (e.g., western red bat) may include potential vehicle strikes during construction; removal of vegetation (including trees) or transmission poles that house nests or roosting sites during construction; collision and electrocution risk from power lines and other PG&E Proposed Project components; the permanent conversion of approximately 1.5 acres of annual grassland, bulrush, cattail, saltgrass, and pickleweed habitat potentially suitable for nesting/roosting and foraging; and the temporary disturbance of approximately 32.0 acres of annual grassland, bulrush, cattail, saltgrass, and pickleweed habitat potentially suitable for foraging and nesting/roosting. Burrowing owls may use rodent burrows within the PG&E Proposed Project component area for breeding or overwintering, but may also nest or roost in man-made burrow surrogates (e.g., drainage culverts). California black rail, California Ridgway's rail, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, tricolored blackbird, and yellow rail may use emergent marsh vegetation and dense grasses and forbs for nesting. All of the avian and bat species listed in this subsection may use the PG&E Proposed Project components area for foraging purposes.

The permanent conversion of approximately 1.5 acres of potentially suitable foraging habitat for all special-status avian and bat species listed in this subsection (as well as nesting habitat for California black rail, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, tricolored blackbird, and yellow rail) is unavoidable, but temporary impacts to approximately 103.3 acres of potentially suitable grassland foraging habitat would be restored in accordance with CM BIO-2. The high quantity of similar annual grassland and saltgrass habitats in the region would help minimize the potential for impacts to special-status avian species caused by the loss of these habitats. Additional similar tree nesting sites for raptor species exist within these habitats, and additional similar nesting habitats for raptors exist on transmission line towers north and south of the Proposed Project. Tree trimming and removal and brush and weed control may

result in bird nest disruption or destruction or the abandonment or mortality of bat day roosts or maternity roosts. Pre-construction surveys, in accordance with CM BIO-12, would help to identify any trees, vegetation, or burrows that may be housing nests or bat roosts so that these nests/roosts can be avoided during construction. All construction activities that may result in take of bird nests and bat roosts would be monitored by a qualified biologist to ensure that these activities do not result in unauthorized take of active nests or roosting sites, in accordance with CM BIO-13.

To reduce impacts to these species during construction, an HCP training would be implemented to educate all construction workers on proper work practices to avoid harming nesting birds and roosting bats during construction, in accordance with CM BIO-3. Throughout construction, vehicles would stay on established roadways and within areas of disturbance, and the speed limit would be 15 mph, in accordance with CM BIO-8, to minimize the risk of vehicle strikes or crushing of ground-nesting avian nests. Avian and bat species would likely temporarily avoid the work area during construction activities due to the increased noise and activity.

PG&E's existing transmission infrastructure already creates collision risks for avian and bat species, and the number of tall structures in the area would be incrementally increased by the construction of the proposed PG&E Proposed Project components. As described in Chapter 3 – Project Description, all PG&E Proposed Project components would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), as applicable. The risks of collision and electrocution associated with this increase would be minimized by spacing conductors and ground wires sufficiently so that raptors cannot contact two conductors or one conductor and a ground wire at the same time, and by designing and constructing towers to reduce the risk of avian collision. Further, all transmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), thus reducing potential impacts to avian movement to be less than significant.

Indirect impacts to special-status avian and bat species during construction may include decreased suitability of habitat in the vicinity of the Proposed Project caused by factors such as increased noise from construction activities and vehicles, nighttime lighting installed within work areas, and increased human activity. Noise from construction activities can affect avian and bat species in multiple ways, such as depressing breeding success by acoustical masking, interfering with intra-specific communication, and interfering with the detection of predators. Construction activities may disrupt breeding and foraging activities, prevent birds from tending to nests, or cause birds to flush from their nests, endangering eggs and chicks. Noise during construction activities is expected to be short term in nature and minimal. Nighttime lighting within the work area would be shielded, oriented downward, and directed away from active nest or roost sites. These impacts would be minimized through implementation of CMs BIO-4 and BIO-11. Active nests and bat roosts that may be discovered during pre-construction surveys would be monitored and avoided or removed, in accordance with CM BIO-12.

In summary, direct and indirect impacts would be less than significant and would be avoided or further minimized by the implementation of CMs BIO-2 through BIO-4, BIO-8, and BIO-13 through BIO-13. These measures would also further reduce the less-than-significant impacts to other avian and bat species that have a low potential to occur within the terrestrial survey area.

Construction - Aquatic

Proposed LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. The proposed LSPGC 230 kV Submarine Segment, including the in-river transition structure, would result in permanent impacts to aquatic benthic habitats of less than 0.1 acre, as well as temporary impacts to approximately 49.1 acres. These impacts are detailed in Table 5.4-8: Impacts by Vegetation Community and Land Cover.

Avian and Bat Species

Direct impacts to special-status avian and bat species associated with construction of the in-river transition structure may include collision and electrocution risk from power lines and other LSPGC Proposed Project components; California black rail, northern harrier, saltmarsh common yellowthroat, Suisun song sparrow, tricolored blackbird, and yellow rail may use emergent marsh vegetation in close proximity to the in-river transition structure for nesting, while other raptor, passerine, and bat species may use the in-river transition structure for nest construction or roost sites. All construction activities that may result in take of bird nests and bat roosts would be monitored by a qualified biologist in accordance with APM BIO-6.

To reduce impacts to these species during construction, a WEAP would be implemented to educate all construction workers on proper work practices to avoid harming nesting birds and roosting bats during construction in accordance with APM BIO-3. Avian and bat species would likely temporarily avoid the work area during construction activities due to the increased noise and activity. As described in Chapter 3 – Project Description, all LSPGC and PG&E Proposed Project components would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), as applicable. The risks of collision and electrocution associated with this structure would be minimized by spacing conductors and ground wires sufficiently so that raptors cannot contact two conductors or one conductor and a ground wire at the same time and by designing and constructing towers to reduce the risk of avian collision. Further, the in-river transition structure would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), thus reducing potential impacts to avian movement to be less than significant.

Indirect impacts to special-status avian and bat species during construction may include decreased suitability of habitat in the vicinity of the Proposed Project caused by factors such as increased noise from construction activities and increased human activity. Noise from construction activities can affect avian and bat species in multiple ways, such as depressing breeding success by acoustical masking, interfering with intra-specific communication, and interfering with the detection of predators. Construction activities may disrupt breeding and foraging activities, prevent birds from tending to nests, or cause birds to flush from their nests, endangering eggs and chicks. Noise during construction activities is expected to be short-term in

nature and minimal. Active nests and bat roosts that may be discovered during pre-construction surveys would be monitored and avoided or removed per APMs BIO-13 and BIO-17.

Accordingly, direct and indirect impacts would be less than significant and would be avoided or further minimized by the implementation of APMs BIO-3, BIO-6, BIO-13, and BIO-17. These measures would also further reduce the less-than-significant impacts to other avian and bat species that have a low potential to occur within the work area surrounding the in-river transition structure.

Special-Status Aquatic Species

All of the aquatic species listed in this subsection may use the aquatic study area as described herein. In-water work for the proposed LSPGC 230 kV Submarine Segment is expected to have a high level of disturbance within the aquatic study area. The approximately 4.5-mile proposed LSPGC 230 kV Submarine Segment would involve burying up to six tri-core cables at a depth of 6 to 15 feet below the sediment surface, in accordance with agency requirements. Pile driving associated with the transition structure of the proposed LSPGC 230 kV Submarine Segment would result in less than 0.1 acre of permanent conversion of aquatic habitat. Most of the temporary disturbance of aquatic habitat would occur as a result of in-water work consisting of trenching. These activities have the potential to cause impacts (e.g., turbidity, toxic substrate introduction, invasive species introduction, and fish entrainment).

The following species of fish and ESUs are designated as special-status species and are present within the aquatic study area either seasonally or year-round:

- Chinook salmon Central Valley fall/late fall-run ESU (SSC),
- Chinook salmon Central Valley spring-run ESU (FT, ST),
- Chinook salmon Sacramento River winter-run ESU (FE, SE),
- Delta smelt (FT, SE),
- Green sturgeon Southern DPS (FT, SSC),
- Longfin smelt (FC, ST, SSC),
- Pacific lamprey (SSC),
- River lamprey (SSC),
- Sacramento splittail (SSC),
- Steelhead California Central Valley DPS (FT),
- Western brook lamprey (SSC), and
- White sturgeon (SSC).

Chinook salmon, steelhead, and lamprey are only present seasonally when migrating to and from natal streams, and core habitats are not present for these species. Other species (i.e., longfin smelt, green sturgeon, Sacramento splittail, and Delta smelt) are present year-round and have been documented in CDFW trawls late in the summer and fall (WRA 2023). The following analysis looks at the spectrum of potential impacts to seasonally and perennially present fish and describes APMs for potential impacts.

The aquatic study area lies along the migratory corridor for numerous anadromous species, including three ESUs of Chinook salmon, one steelhead DPS, and three species of lamprey. As

such, these species are only present at certain times of the year. With the presence of core habitat areas upstream and downstream of the aquatic study area, waters within the aquatic study area function as a corridor for anadromous fish species moving between natal streams and marine habitats. Delta smelt and longfin smelt both spawn in the Delta and then remain within the local area to rear as juveniles or forage as adults. These species are generally present year-round.

Considering that some species are only present seasonally for migration, part of the impact can be minimized through the use of an in-water work window limited from July 1 to November 30, in accordance with APM BIO-18 and APM BIO-19, ensuring work occurs when critical life stages for these species are absent; however, as some species are present year-round, additional APMs would be required to reduce impacts to less-than-significant levels. Noise levels that may be harmful to fish species would be reduced through the use of a vibratory hammer and underwater sound monitoring in accordance with APM-BIO-19. The potential for fish entrainment in water pumps and intakes would be minimized through the use of appropriately size fish screens on all pumps or water intakes in accordance with APM BIO-20, which would prevent fish above a certain size from entering the intakes. Aquatic vessels and equipment would be cleaned and follow maritime regulations relating to ballast water exchange, in accordance with APM BIO-21, reducing the likelihood of introduction of invasive species that may create indirect impacts to fish species. Aquatic sediments would be screened and tested before they are disturbed to reduce the risk of exposing hazardous sediments to the marine environment in accordance with APM BIO-22.

Background turbidity within the Delta is generally between 20 and 40 NTUs but can increase to as high as 250 to 500 NTUs during high-wind events that stir light sediments (WRA 2024). Increases in turbidity due to construction of the proposed LSPGC 230 kV Submarine Segment are expected to create localized increases in turbidity in the range of background turbidity within a radius of 100 to 600 feet of construction activities; these increases are expected to diminish to pre-activity levels within one tidal cycle. While increases in turbidity would have the potential to impact sensitive life stages of fish, especially eggs or fry, construction of the proposed LSPGC 230 kV Submarine Segment would not occur at a time of year when these more sensitive life stages are present, in accordance with APM BIO-18. Given the limited in-water work window, coupled with the implementation of APMs BIO-18 through BIO-22, impacts to special-status fish species would be less than significant.

Operations and Maintenance - Terrestrial

LSPGC Components

Less-than-Significant Impact. LSPGC does not maintain existing facilities in the immediate vicinity of the Proposed Project, but preventative maintenance activities for the Terrestrial LSPGC Proposed Project components would be similar to those currently performed by PG&E for existing facilities in the area. LSPGC would inspect the proposed LSPGC 230 kV Overhead Segment in a manner consistent with CPUC GO 165, which would require approximately one trip per year by crews composed of one to four people. Annual comprehensive checks and maintenance would be performed by LSPGC maintenance personnel or qualified contractors. Preventative maintenance at the proposed LSPGC Collinsville Substation would involve quarterly inspections. A small, specialized team would be utilized to perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment

and LSPGC 230 kV Underground Segment is expected to require approximately one trip per year by crews composed of one to four people.

Vehicles used for O&M activities may result in the direct crushing of individual special-status plants or disruption of photosynthesis from traffic-related dust; for special-status wildlife, impacts may include potential vehicle or equipment strikes. Tree trimming and brush and weed control may result in bird nest and bat roost disruption or destruction. For this reason, vegetation management activities would be scheduled outside of the nesting bird season to the greatest extent feasible and vegetation removal would be limited to the minimum necessary to complete operations. Given the periodic but infrequent nature of these continuing operations impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. O&M activities conducted by PG&E for the proposed PG&E 500 kV Interconnection and 12 kV Distribution Line would be similar to those currently performed by PG&E for its existing facilities in the area. These activities include, but are not limited to repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair within substations and throughout ROWs, which would require the use of vehicles and equipment. Vehicles used for O&M activities may result in the direct crushing of individual special-status plants or disruption of photosynthesis from traffic-related dust. For special-status wildlife, impacts may include potential vehicle or equipment strikes. Given the periodic and infrequent nature of these continuing operations, the impact would be less than significant.

Operations and Maintenance - Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The Proposed LSPGC 230 kV Submarine Segment cables would be buried within the Delta at a depth that would eliminate the need for O&M activities after construction. Preventative maintenance associated with the in-river transition structure would involve regular inspections that would be conducted from land. As a result, O&M of the proposed LSPGC 230 kV Submarine Segment would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS and no impact would occur.

5.4.4.1.2 Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Construction - Terrestrial

LSPGC Components

Less-than-Significant Impact. Potential terrestrial impacts to riparian habitat or other sensitive natural communities may include temporary and permanent loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts. Potential

temporary terrestrial impacts would include areas where vegetation communities overlap with proposed temporary work areas and access roads within the terrestrial survey area. Potential permanent terrestrial impacts include areas where vegetation communities overlap with the permanent footprint associated with the proposed LSPGC Collinsville Substation and individual poles/structures installed along the proposed transmission and distribution line alignments.

Six vegetation communities that meet CDFW-designated sensitive natural communities standards are located within the terrestrial survey area, which covers approximately 23.6 acres. These vegetation communities include the *Frankenia salina* Herbaceous Alliance, *Rosa californica* Shrubland Alliance, *Schoenoplectus (acutus, californicus*) Herbaceous Alliance, *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance, *Schoenoplectus americanus* Herbaceous Alliance, and S*choenoplectus acutus/Rosa californica* Association. The proposed LSPGC 230 kV Overhead Segment would temporarily impact approximately 0.8 acre of three sensitive natural communities and would permanently impact less than 0.1 acre of one sensitive natural community. Of the six sensitive natural communities, three overlap proposed temporary construction work areas and staging areas of Terrestrial LSPGC Proposed Project components. Of the six sensitive natural communities, two overlap proposed permanent impact areas in the form of structure foundations for the proposed LSPGC 230 kV Overhead Segment. Anticipated impacts to sensitive natural communities as a result of construction activities are anticipated to total approximately 0.8 acre, as detailed in Table 5.4-9: Potential Impacts to Sensitive Natural Communities. As detailed in Table 5.4-10: Potential Impacts to Wetlands, permanent impacts include structure installation within previously undisturbed areas in wetland feature W-2, which would total less than 0.1 acre. No riparian areas would be permanently impacted by the Terrestrial LSPGC Proposed Project components.

As detailed in Table 5.4-10: Potential Impacts to Wetlands, temporary impacts from construction activities would occur within approximately 2.3 acres of wetland features, including W-1 and W-2. Wetland feature W-1 is also a riparian habitat. No other riparian areas would be temporarily impacted by the Terrestrial LSPGC Proposed Project components.

Construction activities in temporary work areas (including grading, vegetation clearing, excavating, earth-moving, rehabilitation of existing roads, establishment of staging areas, and vehicle traffic) may result in the direct crushing or burial of individual plants in sensitive natural communities, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients, and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introduction of invasive non-native plant species as a result of construction activities has the potential to reduce habitat quality in the construction area surrounding the Terrestrial LSPGC Proposed Project components through direct competition and occupation of prime generation sites. Higher non-native plant cover, especially invasive grass species, may facilitate fires in the area. New, permanent facilities including substation, transmission, and distribution facilities in the Proposed Project ROW may impact sensitive natural communities directly.

To avoid and minimize potential impacts to sensitive natural communities from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, pre-construction biological surveys would be conducted in accordance with APM BIO-5 and boundaries of areas supporting native vegetation and sensitive natural communities would be flagged for avoidance in accordance with APMs BIO-1 and BIO-4, when feasible. In accordance with APM BIO-3, a WEAP training would be provided to ensure contractor understanding and implementation of these protective measures. In addition, mitigation strategies such as special-status plant species restoration would be implemented in accordance with APM BIO-2. Implementation of APM BIO-4 would ensure minimization of impacts to special-status natural communities and wetlands occurring within the Proposed Project area. With the implementation of these APMs, impacts to sensitive natural communities would be less than significant.

PG&E Components

Less-than-Significant Impact. Potential terrestrial impacts to riparian habitat or other sensitive natural communities may include temporary and permanent loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts. Potential temporary terrestrial impacts would include areas where vegetation communities overlap with temporary work areas and access roads for PG&E Proposed Project components. Potential permanent terrestrial impacts include areas where vegetation communities overlap with the permanent footprint associated with the individual poles/structures installed along the PG&E Proposed Project components.

Six vegetation communities that meet CDFW-designated sensitive natural communities standards are located within the terrestrial survey area, covering approximately 28.1 acres. However, no sensitive vegetation communities occur in the vicinity of the PG&E Proposed Project components as detailed in Table 5.4-9: Potential Impacts to Sensitive Natural Communities. As detailed in Table 5.4-10: Potential Impacts to Wetlands, permanent impacts include structure installation within previously undisturbed areas within wetland features W-5, W-6, and W-7. These proposed impacts would be less than 0.1 acre. These areas are not riparian habitat, and no other wetland or riparian areas would be permanently impacted by the PG&E Proposed Project components.

As detailed in Table 5.4-10: Potential Impacts to Wetlands, temporary impacts from PG&E Proposed Project component activities would occur within approximately 0.2 acre of wetland features, including W-5, W-6, and W-7. These areas are not riparian habitat, and no other wetland or riparian areas would be temporarily impacted by the PG&E Proposed Project components.

Construction activities in temporary work areas (including grading, vegetation clearing, excavating, earth-moving, rehabilitation of existing roads, establishment of staging areas, and vehicle traffic) may result in the direct crushing or burial of individual plants in sensitive natural communities, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients, and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introduction of invasive non-native plant species as a result of construction activities has the potential to reduce habitat quality in the construction area

surrounding the PG&E Proposed Project components through direct competition and occupation of prime generation sites. Higher non-native plant cover, especially invasive grass species, may facilitate fires in the area. New, permanent facilities—including substation, transmission, and distribution facilities in the Proposed Project ROW—may impact sensitive natural communities directly.

Table 5.4-9: Potential Impacts to Sensitive Natural Communities

Vegetation Alliance	California States Rarity Ranking	Approximate Total Area Mapped on Proposed Project (acres)	Approximate Temporary Impacts (acres)*	Approximate Permanent Impacts (acres)**
Frankenia Salina Herbaceous Alliance	S3	3.8	0.4	0.0
Schoenoplectus (*acutus, californicus*) Herbaceous Alliance	S3S4	17.6	0.3	<0.1
Schoenoplectus acutus/*Rosa californica* Association	S3S4	2.1	0.1	0.0
Total* **	**--**	**23.6**	**0.8**	**<0.1**

*Potential temporary impact acreages include areas where features overlap Proposed Project temporary work areas along the Proposed Project alignments and access roads, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, staging areas, distribution pole work areas, and the proposed LSPGC Collinsville Substation temporary construction work areas that are known at this time and are not currently disturbed.

** Potential permanent impact acreages include areas where features overlap the permanent footprint associated with the proposed LSPGC Collinsville Substation, new or improved access roads, or individual poles/structures installed along transmission or distribution alignments that are known at this time and not currently disturbed. Areas were estimated using geographic information system (GIS) data.

***Due to rounding, totals may not sum.

To avoid and minimize potential impacts to sensitive natural communities from construction activities (e.g., native vegetation clearing and grubbing, grading, and earth-moving), boundaries of sensitive natural communities and rare plants would be flagged for avoidance, in accordance with CMs BIO-4 and BIO-5, when feasible. In accordance with CM BIO-3, an HCP training would be provided to ensure contractor understanding and implementation of these protective measures. In addition, mitigation strategies, such as site reseeding, would be implemented, in accordance with CM BIO-2. Implementation of CM BIO-4 would ensure minimization of impacts to special-status natural communities and wetlands occurring within the PG&E Component Proposed Project area. With the implementation of these CMs, impacts to sensitive natural communities would be less than significant.

Construction - Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The Proposed LSPGC 230 kV Submarine Segment would be constructed in the Delta in areas where no riparian or other sensitive natural vegetation communities occur; therefore, no impact would occur.

Operations and Maintenance - Terrestrial

LSPGC Components

As described previously LSPGC does not maintain existing facilities in the immediate vicinity of the Proposed Project, but O&M activities for the proposed Terrestrial LSPGC Proposed Project components would be similar to those currently performed by PG&E for existing facilities in the area. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. However, O&M activities would occur in existing or new ROWs and would be periodic and infrequent.

Vehicles used for O&M activities may result in the direct crushing of individual plants in sensitive natural communities or disruption of photosynthesis from traffic-related dust. For special-status wildlife, impacts may include potential vehicle or equipment strikes. Tree trimming and brush and weed control may result in bird nest and bat roost disruption or destruction. Pole or tower replacement may result in special-status mammals or reptiles falling into excavation areas. To prevent incidental introduction of invasive non-native plant species or contamination from spills, LSPGC's existing best management practices (BMPs) for O&M would be implemented and would include, but not limited to minimizing work areas, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of these continuing operations, as well as the implementation of BMPs, this impact would be less than significant.

PG&E Components

O&M activities conducted by PG&E for the PG&E Proposed Project components would be similar to those currently performed by PG&E for existing substations and their associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. Given the periodic and infrequent nature of these continuing operations, potential impacts to wildlife movement or established corridors would be less than significant.

Operations and Maintenance – Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The Proposed LSPGC 230 kV Submarine Segment would be located within the Delta in areas where no riparian or other sensitive natural vegetation communities occur. The cable would also be buried at a depth that would eliminate the need for O&M activities after construction. Therefore, no impact to riparian habitat or sensitive natural communities would occur.

Table 5.4-10: Potential Impacts to Wetlands

Potential Wetland	Total Area Mapped on Proposed Project (acres)	Approximate LSPGC Proposed Project Component Impacts (acres)		Approximate PG&E Proposed Project Component Impacts (acres)		Approximate Shared PG&E and LSPGC Proposed Project Component Impacts (acres)		Approximate Total Impacts (acres)		Riparian Area?	Jurisdiction(s)
		Temporary*	Permanent**	Temporary*	Permanent**	Temporary*	Permanent**	Temporary*	Permanent**		
W-1	7.4	0.1	0	0	0	0	0	0.1	0	Yes	USACE, RWQCB, CDFW
W-2	22.4	2.3	<0.1	0	0	0	0	2.3	<0.1	No	USACE, RWQCB, CDFW
W-5	15.2	0	0	<0.1	<0.1	0	0	<0.1	<0.1	No	USACE, RWQCB, CDFW
W-6	10.0	0	0	0.2	<0.1	<0.1	0	0.2	<0.1	No	USACE, RWQCB, CDFW
W-7	1.6	0	0	<0.1	<0.1	0	0	<0.1	<0.1	No	USACE, RWQCB, CDFW
Total	**56.6**	**2.4**	**<0.1**	**0.2**	**0.1**	**<0.1**	**0**	**2.6**	**0.1**	**--**	**--**

* Potential temporary impact acreages include areas where features overlap Proposed Project temporary work areas along the Proposed Project alignments and access roads, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, staging areas, distribution pole work areas, and the proposed LSPGC Collinsville Substation temporary construction work areas that are known at this time and are not currently disturbed.

** Potential permanent impact acreages include areas where features overlap the permanent footprint associated with the proposed LSPGC Collinsville Substation, new or improved access roads, or individual poles/structures installed along transmission or distribution alignments that are known at this time and not currently disturbed. Areas were estimated using GIS data.

5.4.4.1.3 Would the project have a substantial adverse effect on state or federally protected wetlands and waters, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?

Construction - Terrestrial

LSPGC Components

Less-than-Significant Impact. The construction of the Terrestrial LSPGC Proposed Project components would result in temporary and permanent impacts to waters under the jurisdiction of the USACE, RWQCB, and CDFW. As detailed in Table 5.4-10: Potential Impacts to Wetlands, a total of less than 0.1 acre of waters and wetlands would be permanently impacted by the Terrestrial LSPGC Proposed Project components, and 2.4 acres would be temporarily impacted. These waters fall under the jurisdiction of the USACE, RWQCB, and CDFW. Structures and construction work areas would be sited to avoid jurisdictional waters to the maximum extent possible in accordance with APM BIO-4. Wetland feature W-2 would be permanently and temporarily impacted, while wetland feature W-1 would be limited to temporary impacts. Temporary impacts within potentially jurisdictional features include overland travel, equipment staging, material laydown, foot traffic, structure replacement, and temporary work areas. Construction activities within these areas may include vegetation removal, minor grading and gravel placement, and material laydown. Permanent impacts include the footprint of two transmission line structure foundations associated with the proposed LSPGC 230 kV Overhead Segment.

The extent of temporary and permanent impacts to potentially jurisdictional wetlands known at this time is presented in Table 5.4-10: Potential Impacts to Wetlands. Final impact calculations would be included during permit coordination with appropriate state jurisdictional agencies prior to construction activities. Permits would be obtained from the USACE, RWQCB, and CDFW and all conditions from those permits would be adhered to during construction ensure that adequate compensation for these losses is achieved.

At locations where overland access would occur in vegetated jurisdictional features, revegetation would be unnecessary because overland travel methods would preserve the root mass of existing woody vegetation to allow crown resprouting to occur. Where activities would require the clearing of vegetation, temporarily disturbed areas would be restored in-place to pre-construction contours. If appropriate, topsoil salvage and replacement (which allows natural recruitment reseeding), and revegetation where necessary and in accordance with APM BIO-2 would occur. Recontouring would be implemented to restore preexisting hydrological function to the system and topsoil would be salvaged to allow for the naturally occurring seed bank to reestablish.

All necessary permits and authorizations would be obtained prior to construction and all conditions of approval identified in permits and authorizations would be met. In accordance with APM BIO-2, Proposed Project-specific SWPPPs would be developed and implemented; these would include BMPs to prevent erosion and sedimentation into wetlands and streams and would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM BIO-4, which would avoid or minimize impacts to all jurisdictional waters and riparian habit by siting activities outside these areas, implementing

appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of APMs BIO-2 and BIO-4, as well as compliance with permits and authorizations issued for the Proposed Project, impacts to potentially jurisdictional wetlands and waters would be less than significant.

PG&E Components

Less-than-Significant Impact. The construction of the PG&E Proposed Project components would result in temporary impacts to waters under the jurisdiction of the USACE, RWQCB, and CDFW. As detailed in Table 5.4-10: Potential Impacts to Wetlands, a total of approximately 0.1 acre of waters and wetlands would be permanently impacted by the PG&E Proposed Project components, and approximately 0.2 acre would be temporarily impacted. Structures and construction work areas would be sited to avoid jurisdictional waters to the maximum extent possible, in accordance with CMs BIO-1 and BIO-4. Wetland features W-5, W-6, and W-7 would be temporarily impacted by overland travel, equipment staging, material laydown, foot traffic, structure replacement, and temporary work areas. Construction activities within these areas may include vegetation removal, minor grading and gravel placement, and material laydown. Permanent impacts would result to wetland features W-5, W-6, and W-7 from the installation of the proposed PG&E 12 kV Distribution Line.

The extent of temporary and permanent impacts to potentially jurisdictional wetlands known at this time is presented in Table 5.4-10: Potential Impacts to Wetlands. Impact calculations would be finalized during permit coordination with appropriate jurisdictional agencies prior to construction activities. Permits would be obtained from the USACE, RWQCB, and CDFW, and all conditions from those permits would be adhered to during construction.

At locations where overland access would occur in vegetated jurisdictional features, revegetation would be unnecessary because overland travel methods would preserve the root mass of existing woody vegetation to allow crown resprouting to occur. Where activities would require the clearing of vegetation, temporarily disturbed areas would be restored in-place to pre-construction contours. If appropriate, revegetation in accordance with CM BIO-2 would be implemented.

All necessary permits and authorizations would be obtained prior to construction, and all conditions of approval identified in permits and authorizations would be met. Proposed Project-specific SWPPPs would be developed and implemented; these would include BMPs to prevent erosion and sedimentation into wetlands and streams and would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in CMs BIO-1 and BIO-4, which would avoid or minimize impacts to all jurisdictional waters and riparian habit by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of CMs BIO-1, BIO-2, and BIO-4, as well as compliance with permits and authorizations issued for the Proposed Project, impacts to potentially jurisdictional wetlands and waters would be less than significant.

Construction - Aquatic

Proposed LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. The construction of the Proposed LSPGC 230 kV Submarine Segment and associated in-river transition structure would result in temporary and permanent impacts to the Delta which is under the jurisdiction of the USACE, RWQCB, and CDFW. As detailed in Table 5.4-8: Impacts by Vegetation Community and Land Cover, less than 0.1 acre of waters would be permanently impacted by the Proposed LSPGC 230 kV Submarine Segment, and approximately 49.1 acres would be temporarily impacted.

All necessary permits and authorizations would be obtained prior to construction and all conditions of approval identified in permits and authorizations would be met. Further, to reduce the potential for hazardous material spills within jurisdictional areas, equipment inspection and cleaning procedures would be implemented in accordance with APM BIO-23. If overwater concrete casting is required, containment structures would be installed to ensure that no concrete or cure water escapes in accordance with APM BIO-26. If appropriate, aquatic sediments would be screened and tested before they are disturbed to reduce the risk of exposing hazardous sediments to the marine environment in accordance with APM BIO-22.With the implementation of these APMs, impacts to potentially jurisdictional wetlands and waters would be less than significant.

Operations and Maintenance - Terrestrial

LSPGC Components

Less-than-Significant Impact. O&M activities for the Terrestrial LSPGC Proposed Project components would generally avoid jurisdictional waters. Should any activities be required within jurisdictional waters, all necessary permits and authorizations would be obtained prior to conducting O&M activities in jurisdictional waters, potentially including a Section 404 Nationwide Permit from the USACE, a Water Quality Certification and/or Waste Discharge Requirement from the RWQCB, and/or a Section 1602 LSAA from the CDFW. All conditions of approval identified in permits and authorizations would be met. Further O&M activities would occur in existing or new ROWs and would be periodic but infrequent. Therefore, impacts to potentially jurisdictional wetlands and waters would be less than significant.

PG&E Components

Less-than-Significant Impact. O&M activities for PG&E Proposed Project components would generally avoid jurisdictional waters. Should any activities be required within jurisdictional waters, all necessary permits and authorizations would be obtained prior to conducting the O&M activities. All conditions of approval identified in permits and authorizations would be met. Further O&M activities would occur in existing or new ROWs and would be periodic and infrequent. Therefore, impacts to potentially jurisdictional wetlands and waters would be less than significant.

Operations and Maintenance - Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The proposed LSPGC 230 kV Submarine Segment cables would be buried within the Delta at a depth that would eliminate the need for O&M activities after construction and the in-river transition structure would be inspected from land; therefore, there would be no impact to federally protected wetlands and waters.

5.4.4.1.4 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?

Construction – Terrestrial

LSPGC and PG&E Components

Less-than-Significant Impact. Significant impacts to wildlife movement may occur if a wildlife movement corridor were to be interrupted by a feature that physically blocks wildlife movement (e.g., a roadway) or if suitable habitat that supports wildlife in the movement corridor were to be directly removed during construction or indirectly affected by construction and decommissioning noise or dust. Approximately 12.9 acres of permanent disturbance area within the terrestrial survey area would be located within heavily grazed annual grasslands and would not interfere with local short-distance wildlife movement. Due to their small cross-sections, the proposed LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line structures would not create barriers to the movement of any native or migratory wildlife species. The Terrestrial LSPGC and PG&E Proposed Project components would not be located within resident or migratory corridors (except for the Pacific Flyway, which covers roughly one-third of the North American continent).

New substation, transmission, and distribution structures and poles, as well as the electric lines installed on those structures and poles, may result in a risk of collisions for birds, interfering with the movement of individuals or flocks. To avoid impacts to avian movement from new electric lines, all LSPGC and PG&E Proposed Project components would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), as appropriate and as described in Chapter 3 – Project Description. Further, all transmission and distribution facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), thus reducing potential impacts to avian movement to be less than significant.

Construction – Aquatic

Proposed LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. The proposed LSPGC 230 kV Submarine Segment would be along the migratory route for numerous anadromous species that move from natal streams in the Central Valley to adult foraging grounds in the Pacific Ocean; therefore, the proposed LSPGC 230 kV Submarine Segment area functions as a migratory corridor for fish. Several marine mammal species protected under the MMPA also occur in the Delta. As discussed previously

and in Attachment 5.4-B: Aquatic Resources Technical Report, the Proposed Project area also contains SAV, which can function as a nursery site for various fish species that spawn or rear within the SAV.

If construction were to occur at times of year when migratory events for fish were occurring or when larval fish were present, construction activities may have the potential to disrupt migratory events or to disturb nursery sites that are occupied by rearing fish. Potential impacts to migratory fish would be minimized by limiting the in-water work window to July 1 to November 30 in accordance with APM BIO-18. This time frame would ensure work occurs when critical life stages for multiple species of special-status fish are absent. Environmental training would be provided to inform construction personnel of the resource protection and avoidance measures so crews would understand their obligations regarding environmentally sensitive area boundaries in accordance with APM BIO-3. Aquatic vessels and equipment would be cleaned and follow maritime regulations relating to ballast water exchange to reduce the introduction of invasive species that may cause indirect impacts to native resident or migratory fish or wildlife species in accordance with APM BIO-21. Further, toxic sediment disturbance would be avoided during construction activities in accordance with APM BIO-22, while pump and intake screening would ensure that any individual fish would not be entrained in accordance with APM BIO-20. Sounds created from pile driving would be reduced to the extent possible in accordance with APM BIO-19 to minimize noise disturbance to nearby fish and marine mammals. If an impact hammer is necessary to drive piles, a biological monitor would be present to observe for wildlife and would halt pile-driving operations if marine mammals are observed within a distance where they may be affected by sounds created during pile driving in accordance with APM BIO-24. Additionally, light transmission materials would be installed in accordance with APM BIO-25 to reducing shading and potential effects to critical habitat productivity. With the implementation of these measures, potential impacts on wildlife migratory corridors for fish and nursery sites from the proposed LSPGC 230 kV Submarine Segment would be less than significant.

Operations and Maintenance – Terrestrial

LSPGC and PG&E Components

Less-than-Significant Impact. As described previously, LSPGC does not maintain existing facilities in the immediate vicinity of the Proposed Project, but O&M activities for the Terrestrial LSPGC and PG&E Proposed Project components would be similar to those currently performed by PG&E for existing facilities in the area. Therefore, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. However, O&M activities would occur in existing or new ROWs and would be periodic but infrequent. Given the periodic but infrequent nature of these continuing operations, potential impacts to wildlife movement or established corridors would be less than significant.

Operations and Maintenance – Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The Proposed LSPGC 230 kV Submarine Segment cables would be buried within the Delta at a depth that would eliminate the need for O&M activities after construction and all O&M activities associated with the in-river transition structure would occur outside of the water;

therefore, no substantial interference with the movement of native resident or migratory fish or wildlife species underwater would occur. As a result, no impact would occur.

5.4.4.1.5 Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction, Operations and Maintenance

No Impact. Because the CPUC has exclusive jurisdiction over its siting, design, and construction, the Proposed Project is not subject to local land use and zoning regulations or discretionary permits. However, local regulations relating to biological resources were reviewed to ensure that the Proposed Project would not conflict with local policies or ordinances protecting biological resources. The Proposed Project would be designed in a way that complies with local policies pertaining to wildlife and plants. Implementation of the Proposed Project would not conflict with local policies or ordinances relating to biological resources. Therefore, no impact would occur.

5.4.4.1.6 Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

Construction, Operations and Maintenance

No Impact. The Proposed Project overlaps with the boundaries of three HCPs/NCCPs. An analysis of the potential conflicts with each plan is provided in the subsections that follow.

Solano County Water Agency Solano Multispecies Habitat Conservation Plan

The SCWA Solano Multispecies HCP establishes a framework for complying with federal and state endangered species regulations while accommodating future urban growth, infrastructure development, and ongoing O&M for flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the plan participants in Solano County over the next 30 years (SCWA 2012). The proposed LSPGC Collinsville Substation, proposed LSPGC 230 kV Overhead Segment, proposed PG&E 500 kV Interconnection, and proposed PG&E 12 kV Distribution Line would be located within the boundaries of Zone 3 of the Solano Multispecies HCP. Because the unincorporated areas of Solano County within Zone 3, where the Proposed Project would be located, have elected not to participate in the HCP, the Proposed Project would not be considered a covered activity under the HCP. Therefore, the Proposed Project would not conflict with the HCP and no impact would occur.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The ECCC HCP/NCCP was developed to protect natural resources in eastern Contra Costa County while improving environmental permitting processes and conserving endangered species and contributing to their recovery. The proposed LSPGC 230 kV Underground Segment and Telecommunications Line would be located within the boundaries of the ECCC HCP/NCCP and the Proposed Project would qualify as a covered activity, because it is associated with urban

growth within the urban development area. Construction and O&M for the Proposed Project would be limited to a relatively small portion of the ECCC HCP/NCCP plan area and would be limited to disturbed and developed areas that do not contain suitable habitat for ECCC HCP/NCCP covered species. Further, the Proposed Project's APMs and CMs align with the measures that are proposed to reduce impacts to these species in the ECCC HCP/NCCP; therefore, the Proposed Project would not conflict with the HCP/NCCP and no impact would occur.

Pacific Gas and Electric Company Bay Area Operations and Maintenance Habitat Conservation Plan

The PG&E Bay Area Operations and Maintenance HCP is intended to avoid, minimize, and mitigate temporary and permanent impacts to threatened and endangered species resulting from PG&E's O&M and minor new construction activities in the HCP area. The HCP area includes the nine counties surrounding the San Francisco Bay, including Solano County and Contra Costa County. Although the Proposed Project area is located within the boundaries of this HCP, it is not a covered activity because construction of the Proposed Project is not considered O&M, minor new construction,[7] or part of a pipeline safety program activity; therefore, the Proposed Project would not conflict with the HCP and no impact would occur.

5.4.4.1.7 Would the project create a substantial collision or electrocution risk for birds or bats?

Construction, Operations and Maintenance - Terrestrial

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. Direct risks to avian and bat species may include collision and electrocution associated with the overhead transmission and distribution structures and poles and microwave tower. Similar transmission and substation structures are already present and maintained adjacent to the Proposed Project area. PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line already presents a risk for collision, but resident birds and bats have likely grown accustomed to these obstructions. Further, the potential for new collision and electrocution risk would be limited to the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line; the proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line would not pose a collision or electrocution risk to avian or bat species. As described in Chapter 3 – Project Description, facilities would be designed to minimize the potential for collision and electrocution risk and collisions by implementation of APLIC measures, as appropriate. Through design consistency with APLIC, potential collision or electrocution risks to birds and bats would be less than significant.

[7] Minor new construction, when in natural vegetation or agricultural land-cover types that contain suitable habitat for covered species, is limited to approximately 2 miles or fewer of new electric or gas line extensions from an existing line. The new electric transmission lines for the Proposed Project would span distances greater than 2 miles from existing lines.

Construction, Operations and Maintenance - Aquatic

Proposed LSPGC 230 kV Submarine Segment

No Impact. The proposed LSPGC 230 kV Submarine Segment would be buried beneath the Delta floor and would not create a substantial collision or electrocution risk to avian or bat species. In addition, the proposed LSPGC 230 kV Submarine Segment cables would be buried within the Delta sediment at a depth that would eliminate the need for O&M activities after construction. As a result, no impact would occur.

5.4.4.2 Quantify Habitat Impacts

Habitat impacts for known disturbance areas are quantified for the Proposed Project alignment and presented in Table 5.4-8: Impacts by Vegetation Community and Land Cover and in Sections 5.4.4.1.1. The disturbance areas may be refined as the Proposed Project design progresses.

5.4.4.3 Special-Status Species Impacts

Impacts to special-status species are addressed in Section 5.4.4.1.1.

5.4.4.4 Wetland Impacts

Impacts to wetlands are addressed in Section 5.4.4.1.3.

5.4.4.5 Avian Impacts

Impacts to avian species are addressed in Section 5.4.4.1.1.

5.4.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for biological resources. APMs are listed in the following sections.

5.4.6 Applicant-Proposed Measures

5.4.6.1 Biological Resources Applicant-Proposed Measures

The following APMs would be implemented for the LSPGC Proposed Project components:

- **APM BIO-1: Avoid Environmentally Sensitive Areas.** Biological field surveys (i.e., surveys to identify vegetation communities and land cover, aquatic features, and potential terrestrial habitat for special-status plant and wildlife species, as well as fully floristic botanical surveys) would be performed for any portion of the Proposed Project area not yet surveyed (e.g., areas that did not have landowner access, new or modified staging areas, pull sites, or other work areas). Sensitive biological resources or areas discovered during surveys would be subject to a buffer from construction activities in accordance with the applicable Proposed Project APMs. The findings of all biological field surveys on portions of the Proposed Project area not yet surveyed would be provided to the CPUC prior to construction commencing within those areas.

- **APM BIO-2: Develop and Implement Restoration Plan.** A Proposed Project-specific restoration plan would be prepared for the Proposed Project and submitted to the CPUC for approval prior to the start of construction activities. The restoration plan would include procedures for restoration activities, including plant species to be planted, procedures to reduce weed encroachment, and expected timeframes and success criteria for restoration and revegetation. Revegetation activities would be conducted in accordance with the Proposed Project SWPPPs and restoration plan.

- **APM BIO-3: Worker's Environmental Awareness Program Training.** All workers on the Proposed Project site would be required to attend a WEAP training. Training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. Additionally, the WEAP would train all construction personnel on hazardous materials management, hazardous wastes and stained or odiferous soils identification, and applicable regulations. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations:

  - Environmentally sensitive area boundaries,
  - Housekeeping (i.e., trash and equipment cleaning),
  - Safety,
  - Work stoppage,
  - Communication protocol, and
  - Consequences of non-compliance.

- **APM BIO-4: Delineation of Sensitive Resources.** All sensitive biological areas (e.g., aquatic resources and special-status plants) within Proposed Project work areas would be clearly marked prior to construction to restrict construction activities and equipment from entering these areas. Signage would be placed along regular intervals of this delineation prohibiting entry by Proposed Project personnel and identifying the delineated area as a sensitive resource. A buffer of at least 5 feet from all construction activities would be established around these areas. These buffers would be inspected regularly to ensure that they remain in place.

- **APM BIO-5: Pre-Construction Plant Surveys.** Prior to initial vegetation clearing and ground-disturbing activities, a qualified biologist would conduct pre-construction surveys during the appropriate blooming period for Welsh mudwort, Delta tule pea, Mason's lilaeopsis, Bolander's water hemlock, and Suisun marsh aster. Surveys would occur within Proposed Project work areas with suitable habitat for these plants. In the event of the discovery of a previously unknown special-status plant, the area would be marked as a sensitive area and would be avoided to the maximum extent practicable. If avoidance of species listed under the FESA or CESA is not possible, the USFWS and/or CDFW would be consulted as appropriate.

- **APM BIO-6: Qualified Biologist Monitoring.** Any construction activities within suitable special-status species habitat that may impact sensitive biological resources would be monitored by a qualified biologist. The monitor/inspector would have the authority to stop work activities upon the discovery of sensitive biological resources and

allow construction to proceed after the identification and implementation of steps required to avoid or minimize impacts to sensitive resources.

- **APM BIO-7: Vehicle Cleaning.** All construction equipment and vehicles that would travel outside of approved access roads/designated parking areas (e.g., staging yards) would be cleaned prior to their initial arrival on the Proposed Project site to avoid spread of noxious weeds and non-native invasive plant species.

- **APM BIO-8: Vehicle Travel.** Vehicles would adhere to a speed limit of 15 mph on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas. In addition, construction employees would be required to stay on established and clearly marked and existing roads or within the limits of disturbance (except when not feasible due to physical or safety constraints) and would be advised that care should be exercised when commuting to and from the Proposed Project area to reduce accidents and animal road mortality.

- **APM BIO-9: Trapped Animal Prevention.** All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species.

- **APM BIO-10: Delineation of Work Areas.** All work areas within the Proposed Project area would be clearly delineated prior to construction commencing with fencing, staking, or flags. Construction activities would be restricted to delineated work areas and all delineation would be maintained in working order until completion of construction.

- **APM BIO-11: Pre-Construction Wildlife Surveys.** Prior to initial vegetation clearance and ground-disturbing activities within suitable habitat for special-status wildlife, a biologist would conduct pre-construction surveys within Proposed Project work areas for special-status wildlife. Within wetland habitats or other areas suitable for northwestern pond turtle occupation, a qualified biologist would examine potential basking sites for adult turtles, as well as potential nest sites in sandy or sparsely vegetated substrates; turtle nests would be flagged for avoidance. In pickleweed habitats or other areas suitable for salt marsh harvest mouse occupation, a qualified biologist would carefully inspect vegetation prior to vegetation clearance and ground disturbing activities to ensure no salt marsh harvest mouse individuals or nests are present and to encourage mice residing within or adjacent to the Proposed Project work areas to move into adjacent habitats prior to impacts commencing each day. The monitor/inspector would have the authority to stop work activities upon the discovery of sensitive biological resources and allow construction to proceed after the identification and implementation of steps required to avoid or minimize impacts to sensitive resources.

- **APM BIO-12: Project Lighting.** The use of outdoor lighting during construction would be minimized whenever practicable. Photocell-controlled lighting (i.e., motion detection) would be provided at a level sufficient to provide safe entry and exit to the proposed LSPGC Collinsville Substation and control enclosures. All lighting would be selectively placed, shielded, and directed downward and away from sensitive habitat and resources to the maximum extent practicable.

- **APM BIO-13: Nesting Bird Avoidance.** If feasible, construction and vegetation trimming/removal would be avoided during the migratory bird nesting or breeding season (i.e., February 15 to August 31). When it is not feasible to avoid construction during the nesting or breeding season, a survey would be performed in the area where the work is to occur to determine the presence or absence of nesting birds. If an active nest (i.e., containing eggs or young) is identified, a suitable construction buffer (which would differ based on species and location of nest) would be implemented to ensure that the nesting or breeding activities are not substantially adversely affected. If the nesting or breeding activities are being conducted by a federal or state-listed species, LSPGC and/or PG&E would consult with the USFWS and CDFW as necessary. Monitoring of the nest would continue until the birds fledge or construction is no longer occurring on the site.

- **APM BIO-14: Burrowing Owl.** Prior to the initiation of construction activities occurring in suitable grassland habitat, a qualified biologist would conduct up to four protocol-level surveys for burrowing owl, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). A take avoidance survey for active burrows would also be conducted no more than 30 days prior and no less than 14 days prior to the start of construction in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If burrowing owls are present at the site, a qualified biologist would establish an exclusion zone in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If a qualified biologist experienced with burrowing owl determines the relocation of owls is necessary, a passive relocation effort may be conducted in coordination with the CDFW and in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

- **APM BIO-15: Wetland Birds.** To the greatest extent feasible, work within wetland habitats suitable for California black rail or Ridgway's rail occupation would be limited to a work window of September 1 through January 15, which is outside of the breeding season for these species. If work in suitable wetland habitats is not feasible during this work window, then prior to the initiation of activities, a qualified biologist would conduct protocol-level surveys for Ridgway's rail (USFWS 2015) and standardized tape call-back/response protocols for California black rail following a similar protocol (Hildie et al. 2005). If either species is found to be absent following these surveys, then work may proceed within wetland habitats outside of the prescribed work window.

- **APM BIO-16: Vegetation and Tree Trimming/Removal.** Vegetation and tree trimming/removal would be limited to the minimum area necessary to allow construction to proceed and to provide adequate vegetation removal to meet initial electrical clearance and wildfire prevention requirements. Where feasible, shrubs and other woody vegetation would be cut at the base to preserve the existing root system and facilitate resprouting following the conclusion of Proposed Project construction.

- **APM BIO-17: Raptor Nests.** If a raptor nest or breeding burrow is observed during pre-construction surveys, a qualified biologist would determine if it is active. If the nest is determined to be active, the biological monitor would monitor the nest to ensure that nesting or breeding activities are not substantially adversely affected. If the biological monitor determines that activities associated with the Proposed Project are disturbing or

disrupting nesting or breeding activities, the biological monitor would make recommendations to reduce noise or disturbance in the vicinity of the nest, such as temporarily suspending work in the area. If the nest is determined to be inactive, the nest would be removed under direct supervision of the qualified biologist.

- **APM BIO-18: In-Water Work Window.** To minimize potential impacts to fish during in-water work (i.e., disturbance to the Delta substrate or placement of construction materials below the waterline) both from general disturbance or from the potential introduction of deleterious materials that may disrupt both migratory events and cause impacts to species during key times of year when more sensitive life stages (i.e., eggs and fry) are present, a work window of July 1 to November 30 would be enacted.

- **APM BIO-19: In-Water Pile Driving.** The following measures would be implemented during the driving of all piles:

  – In-water work would be limited to the July 1 to November 30 work window as stated in APM BIO-18.
  – To the greatest extent feasible, the driving of steel piles would be conducted with a vibratory hammer.
  – When installation with an impact hammer is required for steel piles driven in water, the following additional measures would be employed:

    - Use of a soft start (i.e., gradually increasing energy and frequency) at the start of driving, or after a cessation of driving for more than 1 hour.

    - Use a bubble curtain during the pile driving process. Alternatively, underwater sound monitoring could be performed during pile driving activities for a minimum of 1 day for each pile size and type utilized during construction to verify sound levels would not exceed a peak of 206 decibels (dB) or cumulative sound exposure level of 183 dB as a substitute for a bubble curtain. If monitoring indicates that these noise levels would be exceeded, additional noise reduction measures (e.g., isolation of the piles via a temporary cofferdam or limiting pile strikes) would be implemented to reduce noise levels.

- **APM BIO-20: Intake Screening.** To minimize the potential for fish to be entrained by the Proposed Project, any pumps or water intakes used by the Proposed Project would be screened in accordance with the CDFW and NOAA Fisheries screening requirements for water diversions within the Delta (CDFG 2000, NOAA Fisheries 1997). If any variation from these criteria is necessary, LSPGC would consult with the agency responsible for the species for recommendations to protect fish.

- **APM BIO-21: Invasive Species Management for In-water Work.** To help reduce the potential effects of invasive species from construction of the Proposed Project within the Delta the following measures would be implemented:

  – Aquatic vessels brought to the study area from ports outside of San Francisco Bay and/or the Delta for aquatic construction would follow all maritime regulations

relating to the exchange of ballast water to prevent the spread of invasive species from outside ports.

– Any in-water fill materials (e.g., piles) would be new and not salvaged from areas outside of San Francisco Bay.

– Any pumps or in-water equipment that may be needed during construction would be cleaned and dried for at least 72 hours prior to first being used on the Proposed Project. Continual presence on site would not require drying between uses.

- **APM BIO-22: Aquatic Sediment Screening and Testing.** Prior to installation of cables, screening of the cable alignment based on available background resources (e.g., EnviroStor) would be conducted to determine if there have been any known spills or other hazardous materials releases that potentially intersect with the alignment. If any known spills or other hazardous materials releases are discovered, an aquatic sediment screening and testing program would be developed to evaluate the risk of exposing hazardous sediments to the marine environment. The program would entail the following:

  – Representative aquatic sediment samples would be collected at a minimum of three locations placed evenly along the alignment. The depth of the samples would be consistent with the depth of trenching at each sample location.

  – Sediment samples would be tested according to methods prescribed in the Guidelines for Implementation of the Inland Testing Manual in San Francisco Bay or updated similar manual approved by the San Francisco Bay Dredge Material Management Office (DMMO) (DMMO 2001). The results of this test would be compared to concentrations allowed for in-bay disposal by the San Francisco Bay DMMO to determine if sediments are clean or require special handling.

  – Aquatic sediments that exceed San Francisco Bay DMMO testing standards would:

    ▪ Be avoided by the cable installation route, or

    ▪ Be removed through dredging and disposed of at an appropriate facility approved by the RWQCB, or

    ▪ Be controlled via use of a silt curtain or other appropriate BMP approved by the RWQCB.

  – Cable installation and hydroplow use would be limited to the specified areas and the minimum length necessary.

- **APM BIO-23: Aquatic Spill Prevention and Control.** A spill prevention and control plan would be developed and implemented for the Proposed Project throughout all phases

of construction. This plan would, at minimum, include the following parameters to reduce potential effects from spills:

- Procedures to ensure any equipment used in water (e.g., hydroplow or excavators) are cleaned of excess lubricants and fuels.
- Identification of any hazardous materials used by the Proposed Project.
- Storage locations and procedures for such materials.
- Spill prevention practices, as well as BMPs, employed for various activities.
- Requirements to inspect equipment regularly such that it is maintained to be free of leaks.
- Spill kit location, cleanup, and notification procedures.

- **APM BIO-24: Marine Mammals - Pile Driving.** When an impact hammer is necessary to drive piles, a biological monitor would be present to observe for wildlife and would halt pile-driving operations if marine mammals are observed within a distance where they may be affected by sounds created during pile driving.

- **APM BIO-25: Shade Minimization.** Where feasible, the Proposed Project would include the installation of light-transmitting surfaces to minimize shade beneath the in-river transition structure. Materials installed for light transmission should allow for a minimum of 40 percent light transmission to the waters below. If the final design can incorporate a minimum of 25 percent of the surface area using light transmitting surfaces, no additional measures are required as sufficient light would be allowed to reach waters below such that critical habitat would not be shaded in a way that minimizes reductions in habitat productivity.

  In the event light-transmitting surfaces cannot be installed for safety, structural, or accessibility reasons, the Proposed Project may also install lights beneath the structure to offset light loss within the permanently shaded area.

  If either of these options are infeasible, the Proposed Project would mitigate for the portion of the structural footprint, which is permanently shaded. Areas permanently shaded by the overwater structure may be mitigated with one, or a combination of the following means:

  - Removing equivalent shaded coverage over open water and/or in-water fill at a nearby location,

  - With the purchase of mitigation credits from an approved mitigation bank at a 1-to-1 ratio (i.e., critical habitat permanently shaded: mitigation habitat), or

  - By other similar actions approved by regulatory agencies, so long as those alternative actions achieve a similar effect as described previously (e.g., actions which cause ecological uplift of habitat quality).

- **APM BIO-26: Overwater Concrete Casting.** The following measure would be implemented during the casting of overwater concrete:

  – The bottom elevation of the transition structure would be set at an elevation above the 100-year flood level to allow water and debris to flow beneath the structure during the curing process.

  – All overwater concrete would be poured into water-tight forms, and isolated from waters of the Delta until concrete has fully cured (typically 30 days).

  – Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water would be excluded from the site until the sealant is dry.

  – Any water used to keep concrete moist during the curing process would not be allowed to run off of the structure. Concrete forms would also be sufficiently designed to catch and hold any such cure water.

  – At all times when concrete is being poured or when working with wet concrete, a monitor would be present to inspect the containment structures and ensure that no concrete or cure water escapes the containment structure.

5.4.6.2 Cross-Referenced Applicant-Proposed Measures

The following cross-referenced APM would be implemented for the LSPGC Proposed Project components:

- **APM GEO-1: Geological Hazards and Disturbance to Soils.** The following measures would be implemented during construction to minimize impacts from geological hazards and disturbance to soils:

  – Keep vehicles and construction equipment within the limits of the Proposed Project and in approved construction work areas to reduce disturbance to topsoil.

  – Salvage any disturbed topsoil during temporary grading activities to a maximum depth of 6 inches or to the actual depth if shallower (as identified in a site-specific geotechnical engineering report) to avoid the mixing of soil horizons.

  – Avoid construction in areas with saturated soils where topsoil salvage has not occurred whenever practical to reduce impacts to soil structure and allow safe access. Similarly, avoid topsoil salvage in saturated soils to maintain soil structure.

  – Keep topsoil material on site in the immediate vicinity of the temporary disturbance or at a nearby approved work area to be used in restoration of temporarily disturbed areas. Recontour temporarily disturbed areas following construction to match pre-construction grades. Site and manage on-site material storage in accordance with all required permits and approvals.

  - Keep vegetation removal and soil disturbance to a minimum and limited to only the areas needed for construction and to provide adequate vegetation removal to meet electrical clearance and wildfire prevention requirements. Dispose of removed vegetation off site at an appropriate licensed facility, or it can be chipped on site to be used as mulch during restoration.

5.4.7 PG&E Construction Measures

5.4.7.1 Biological Resources PG&E Construction Measures

The following CMs would be implemented for the PG&E Proposed Project components:

- **CM BIO-1: Vernal Pool and Waters Avoidance.** Prohibit vehicular and equipment refueling 250 feet from the edge of vernal pools, and 100 feet from the edge of other wetlands, streams, or waterways. If refueling must be conducted closer to wetlands, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. Maintain spill prevention and cleanup equipment in refueling areas.

  Maintain a buffer of 250 feet from the edge of vernal pools and 50 feet from the edge of wetlands, ponds, or riparian areas. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew would implement other measures as prescribed by the land planner, biologist, or HCP administrator to minimize impacts by flagging access, requiring foot access, restricting work until dry season, or requiring a biological monitor during the activity.

- **CM BIO-2: Revegetation**. If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew would revegetate the area with a commercial “weed free” seed mix.

- **CM BIO-3: Worker’s Environmental Awareness Training**. All workers on the Proposed Project site would be required to attend a Workers Environmental Awareness Program (WEAP) training. Training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations:

  - Environmentally sensitive area boundaries,
  - Housekeeping (i.e., trash and equipment cleaning),
  - Safety,
  - Work stoppage,
  - Communication protocol, and
  - Consequences of non-compliance.

- **CM BIO-4: Delineation and Avoidance of Sensitive Habitat Features.** A Designated Biologist would clearly identify sensitive resources that crews must avoid for the duration

of the activities with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize or avoid disturbance.

- **CM BIO-5: Special-Status Plant Species.** Occurrences of special-status plant species would be avoided to the extent practicable and would include performance of project activities in special-status plant habitat after senescence. PG&E has created "Map Book zones" for the 13 state or federally listed plants that are covered in the O&M HCP. A Map Book zone is defined as an area of occupied or potentially occupied the HCP-covered plant species habitat as determined by PG&E botanical surveys. When rare and endangered plant species subject to the NPPA cannot be avoided, PG&E would follow the requirements of California Fish and Game Code Sections 1913(b) and 1913(c) concerning notification to CDFW at least 10 days in advance and provide an opportunity to salvage such species.

  If a special-status plant is found or known to occur, the plant would be avoided if feasible (i.e., O&M objectives could still be met). If feasible to avoid, avoidance would include establishing a buffer around the plants and demarcation of the buffer by a qualified biologist or botanist using flagging. Consideration of site-specific environmental factors such as terrain, site hydrology, light, and potential introduction of invasive plants may inform the avoidance approach.

- **CM BIO-6: Biological Monitor.** For Covered Activities in Covered Species modeled habitat that require work over a period of two weeks or greater, a General Biological Monitor would conduct compliance inspections, at a minimum, once every week after clearing, grubbing, and grading are completed and during periods of inactivity.

- **CM BIO-7: Clean Equipment and Materials.** Permittee would implement the following for activities that involve ground disturbance:

  – Mud and/or accumulated soils would be removed from equipment and vehicles to the maximum extent practicable.
  – Vehicles and equipment would be cleaned or washed before entering a new work site.
  – A log would be kept for each work site and would be completed to document each cleaning or washing of vehicles or equipment before entering each new work site.
  – Vehicles would be staged and stored on paved or cleared areas to the extent practicable.
  – Certified weed-free mulch, straw, hay bales, or equivalent materials would be used where necessary.

- **CM BIO-8: Vehicle Travel**. Permittee would:

  – Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt).

  – Use existing access and ROW roads. Minimize the development of new access and ROW roads, including clearing and blading for temporary vehicle access in areas of natural vegetation.

  - Locate off-road access routes and work sites to minimize impacts on plants, shrubs, and trees, small mammal burrows, and unique natural features (e.g., rock outcrops).

  - Limit vehicle speeds on unpaved roads to 15 miles per hour.

- **CM BIO-9: Trapped Animal Prevention.** Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews would search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist would be notified and would relocate the species to adjacent habitat or the species would be allowed to naturally disperse, as determined by a biologist.

  Minimize potential for covered species to seek refuge or shelter in pipes and culverts. Inspect pipes and culverts, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Immediately contact a biologist if a covered species is suspected or discovered.

- **CM BIO-10: Minimize Footprint.** Minimize the activity footprint and minimize the amount of time spent at a work location to reduce the potential for take of species.

- **CM BIO-11: Construction Hours and Lighting.** Construction activities would cease 30 minutes before sunset and would not begin prior to 30 minutes after sunrise, where feasible. Night work would be limited in extent, duration, and brightness, to the extent feasible. If temporary construction lighting is required, PG&E would use shielded construction light fixtures, or otherwise screen or direct lighting away from nearby residences except in the cases of emergency.

- **CM BIO-12: Nesting Birds.** If work is anticipated to occur within the nesting bird season (February–August 31) nesting birds, including raptors and other species protected under the Migratory Bird Treaty Act, may be impacted. If active nests are discovered, exclusionary measures and/or designated avoidance buffers may be required and implemented according to the guidance in the PG&E Nesting Bird Management Plan. The project biologist determines if the construction action would impact the nest, and if so, identifies whether alternative actions or monitoring can be implemented to avoid impacts. If active nests are observed during construction, crews must immediately alert the PG&E project biologist.

  Nests with eggs and/or chicks would be avoided: contact a biologist, land planner or the Avian Protection Program manager for further guidance.

- **CM BIO-13: Felling Trees.** Directionally fell trees away from an exclusion zone, if an exclusion zone has been defined. If this is not possible, remove the tree in sections. Avoid damage to adjacent trees to the extent possible. Avoid removal of snags and conifers with basal hollows, crown deformities, and/or limbs over 6 inches in diameter.

5.4.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be at least 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to biological resources associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area does not contain any known special-status species or federally or state-protected wetlands and would result in only an incremental increase in the loss of trees and existing vegetation communities. As such, the potential modification would have less-than-significant impacts to biological resources and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?			✓	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			✓	
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			✓	

This section describes the cultural resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project), as well as the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.5.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by a project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]). The APE is defined to identify resources in the area that have potential for historic significance, that should be evaluated for eligibility for the National Register of Historic Places (NRHP), and that may be directly or indirectly affected by the

undertaking, in compliance with Title 36, Section 800.16(d) of the CFR. The Area of Potential Impacts (API) is the commensurate California Environmental Quality Act- (CEQA-) level equivalent. The CEQA lead agency must formally approve the API. For the purpose of this assessment, the proposed study area is referred to as the proposed API/APE.

The proposed API/APE includes the following:

- an approximately 11-acre proposed LSPGC substation site;
- two approximately 1.5-mile-long, single-circuit proposed PG&E 500 kV transmission line segments;
- an approximately 1-mile-long, double-circuit proposed LSPGC overhead 230 kV transmission line;
- an approximately 4.5-mile-long stretch of proposed LSPGC submerged transmission cable under the Delta;
- up to 18 approximately 0.3-mile-long proposed LSPGC underground transmission cables;
- an approximately 3-mile-long proposed PG&E 12 kV distribution line; and
- an approximately 1.2-mile-long proposed LSPGC underground telecommunications line.

The proposed API/APE includes all of the Proposed Project components and rights-of-way (ROWs). The approximate length, width, depth, and height of the proposed API/APE were based on the ROWs and dimensions of each component of the Proposed Project. These dimensions are included in Table 5.5-1: Approximate Proposed API/APE Dimensions by Proposed Project Component

Table 5.5-1: Approximate Proposed API/APE Dimensions by Proposed Project Component

Component Name	Approximate Length (miles)	Approximate ROW Width (feet)	Approximate Height (feet)	Approximate Maximum Depth (feet)
PG&E 500 kV Interconnection	1.5	150 to 350	80 to 120	50
LSPGC 230 kV Overhead Segment	1	100 to 230	70 to 150	50
LSPGC 230 kV Submarine Segment	4.5	130 to 480	N/A	104
LSPGC 230 kV Underground Segment	0.6	10	50 to 100	15
PG&E 12 kV Distribution Line	0.9	20	40	10
LSPGC Telecommunications Line	1.2	5	N/A	1.5

Note: The approximate depth is equivalent to the proposed vertical API/APE. The proposed API/APE includes the proposed 11-acre LSPGC Collinsville Substation site and a maximum vertical proposed API/APE of 50 feet.

5.5.1.1 Cultural Resources Summary

The Cultural Resources Technical Report (CRTR) is included in Attachment 5.5-A: Cultural Resources Technical Report. The cultural resources assessment for the underwater portion of the Proposed Project is presented in Attachment A of the CRTR.

5.5.1.1.1 Methods

Information on the character and location of cultural resources at the Proposed Project site and local vicinity was compiled from background and archival research at the California Historical Resources Information System (CHRIS) through the Northwest Information Center (NWIC). The Native American Heritage Commission (NAHC) and interested Native American individuals were also contacted. The research and Native American outreach were supplemented by an intensive survey of the proposed API/APE. The information was then used to evaluate the Proposed Project against the significance criteria in CEQA's Appendix G Environmental Checklist to determine potential impacts. The submarine portion of the Proposed Project was assessed using database research and submerged remote sensing. A search of the CSLC Shipwreck Database, NOAA's AWOIS, and NOAA's ENC was conducted. Additionally, a literature and map review were conducted. The geophysical survey included dual frequency scan sonar, magnetometer, subbottom profiler, and a high resolution multibeam echosounder conducted to map the seafloor and sub-surface conditions, obstructions, and possible installation constraints of the submarine route. The survey covered a 2,000-foot-wide corridor which encompassed the submarine route along its center line.

Records Search and Historical Research

A records search was completed for the Proposed Project that included the proposed API/APE and a surrounding 0.5-mile buffer to identify the presence of previously recorded cultural resources within and in the vicinity of the data center portion of the proposed API/APE. Chronicle Heritage, LLC (Chronicle Heritage) submitted the record search to the CHRIS at the NWIC at Sonoma State University in Rohnert Park on May 5, 2023 and was fulfilled on June 13, 2023. The NWIC is an affiliate of the State of California Office of Historic Preservation in Sacramento.

Chronicle Heritage completed additional background and archival research in support of the CRTR. Historical maps of the proposed API/APE were consulted to identify the potential for historic period (i.e., 45 years and older) cultural resources that may be impacted by Proposed Project activities from the following sources:

- General Land Office (GLO) survey maps (GLO 1870);
- Historical atlas maps of Solano County (Thompson and West 1878, Eager 1890);
- Historical topographic maps dating 1918, 1953, and 1978 (United States [U.S.] Geological Survey [USGS] 1918, 1953, and 1978);
- Historical aerial photographs dating 1927, 1957, and 1970 (Nationwide Environmental Title Research [NETR] 2023); and
- National Oceanic and Atmospheric Administration's (NOAA's) Office of Coast Survey's Historical Map and Chart Collection dating 1828, 1850, 1867, 1883, 1910, 1948, 1958, 1967, and 1979 (NOAA 2023)

Chronicle Heritage conducted research using the California State Lands Commission (CSLC) comprehensive shipwreck database to search for wrecks within Solano, Sacramento, and Contra Costa counties. Additionally, NOAA's Automated Wrecks and Obstructions Information System (AWOIS) and NOAA's Electronic Navigation Chart (ENC) databases were consulted to identify known wreck sites or obstructions within or near the current survey corridor.

Cultural Resource Survey

Terrestrial

Chronicle Heritage conducted an intensive pedestrian archaeological survey of terrestrial portions of the proposed API/APE on August 21 and 22, October 16 to 18, December 19, 2023, and June 28, 2024, under the direction of Chronicle Heritage Senior Archaeologist Max van Rensselaer. The pedestrian survey was conducted using transects no more than 15 meters apart to account for resources that are located within or in the vicinity of the proposed API/APE.

During the survey, the proposed API/APE was examined for the presence of historic or precontact period archaeological site indicators. Historic period site indicators include foundations, fence lines, ditches, standing buildings, objects, or structures such as sheds or concentrations of materials at least 45 years old, such as domestic refuse (e.g., glass bottles, ceramics, toys, buttons, and leather shoes) or refuse from other pursuits, such as agriculture (e.g., metal tanks, farm machinery parts, and horseshoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, etc.). Precontact site indicators include areas of darker soil with concentrations of ash, charcoal, faunal bone fragments (burned or unburned), shell, flaked stone, ground stone, and human bone.

An ArcGIS Collector receiver with submeter accuracy was used to conduct the archaeological survey within the bounds of the proposed API/APE, to identify the extent of previously recorded cultural resources, and to document artifacts and features within archaeological sites. Chronicle Heritage took digital photographs of general views of the proposed API/APE, as well as topography, vegetation density, and other relevant images for documentation and reporting.

Maritime

eTrac, Inc. conducted an intensive submerged cultural resource remote sensing survey of the proposed API/APE between September 17 and October 26, 2023, as authorized by the CSLC's Low Energy Geophysical Survey Permit No. 9235 and under the oversight of Nicholas George, Certified Hydrographer. The submerged cultural resource remote sensing survey was conducted using pre-planned parallel survey lines spaced at 30- to 40-meter intervals, depending on the capable coverage span of the geophysical instrument, to locate and identify potentially significant cultural resources within the proposed API/APE.

The remote-sensing equipment utilized to collect data during the submerged remote-sensing survey included a magnetometer (to detect ferrous materials), side-scan sonar (to create images of the bottom), a subbottom profiler (to reconstruct the structure of the underlying sediment beds), and a high resolution multibeam echosounder (to determine the depth of the water and map the riverbed). Locational control was conducted with Differential Global Positioning System technology. Analysis of the data was conducted with Hypack 2022, SonarWiz 7, and MagPick.

eTrac, Inc. also used two company-owned survey vessels throughout the execution of the submerged remote sensing survey: the Research Vessel (R/V) Rapid, a 28-foot, aluminum monohull powered by twin 250 horsepower (hp) outboard Suzuki engines; and the R/V Taku, a 30-foot, aluminum catamaran powered by twin 300 hp Suzuki outboard engines.

Chronicle Heritage reviewed eTrac's survey methods to ensure that they met state and government specifications for cultural resources survey. To guide Chronicle Heritage's assessment of eTrac's methods—as well as subsequent in-house processing, analysis and presentation—Chronicle Heritage's maritime team developed a Research Design that identified survey methods and protocols based on survey requirements for U.S. Army Corps Districts on the East and Gulf Coasts and inland Rivers and Lakes (e.g. New York, Philadelphia, Wilmington, Charleston, Savannah, Jacksonville, Mobile, Tulsa, Galveston, and St. Paul) that are employed for Section 404 Clean Water Act permit surveys.

Native American Coordination

Native American coordination is detailed in Section 5.18 Tribal Cultural Resources.

5.5.1.1.2 Records Search and Field Survey Results

Records Search and Historical Research

Within the past 10 years, approximately 8.3 percent of the proposed API/APE has been surveyed. The results from the NWIC, received on June 13, 2023, identified 43 previous cultural resource investigations within the records search area. Of the 43 previous investigations, 27 have surveyed all or portions of the proposed API/APE. The records search identified 12 previously recorded cultural resources within the records search area. Of the 12 previously recorded resources, one is prehistoric, 10 are historic, and one is multi-component. Six previously recorded historic sites are within the proposed API/APE, and the one previously recorded resource multi-component site (P-48-000041) is immediately adjacent to the proposed API/APE. Of the six historic sites within the proposed API/APE, five historic sites are to the north of the Sacramento River and represent the early American settlement period and late 19th century agricultural and town development phases that are characteristic of this region (Tremaine 1991). One historic site within the proposed API/APE is to the south of the Sacramento River and consists of two PG&E 230 kV transmission lines. A more detailed list of results from the NWIC is provided in Attachment 5.5-A: Cultural Resources Technical Report.

A study of historical maps and aerial photographs showed that very little change to the area has occurred from its initial development in the mid-19th century until very recently. On the 1878 map of Solano County, several structures in the proposed API/APE that were part of the small town of Collinsville and a recognized historical site in the proposed API/APE, Collinsville Road, are shown. The 1890 map of Solano County shows several structures that may include the NRHP-nominated historic property associated with the previously recorded multi-component site (P-48-000041) adjacent to the proposed API/APE. The southern extent of the proposed API/APE was undeveloped prior to the construction of PG&E's existing Pittsburg Substation. The substation first appears on historic maps in 1953 (USGS 1953) and can be seen on aerial images dating back to 1957 (NETR 2023). No Native American sites, villages, or place names are shown on historic maps within or adjacent to the proposed API/APE.

A search of the CSLC Shipwreck Database, NOAA's AWOIS, and NOAA's ENC returned many known shipwrecks within Solano, Sacramento, and Contra Costa counties. The CSLC results indicate that nine historical shipwrecks are known to have occurred within or in the immediate vicinity of the proposed API/APE. A review of NOAA's AWOIS and ENC databases indicated 32 charted wrecks or obstructions within 1 mile of the proposed API/APE. This information is provided in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report. Additionally, a literature and map review were conducted that resulted in three vessels known to be lost within 1 mile of the Proposed Project proposed API/APE and five vessels lost potentially within or near the proposed API/APE. More information about these lost vessels is provided in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report. Descriptions and illustrations of the published navigational charts of the proposed API/APE from 1828 to 2022 are also provided in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report.

Cultural Resource Survey

Terrestrial

The pedestrian survey resulted in the identification of five new resources within the proposed API/APE along the northern bank of the Sacramento River, and one new resource south of the Sacramento River within the proposed API/APE. Ten previously recorded cultural resources within or immediately adjacent to the proposed API/APE were revisited during the pedestrian survey. One of the previously recorded resources—historic transmission lines that are within the proposed API/APE—is recommended as eligible for listing in the NRHP and California Register of Historical Resources (CRHR). One previously recorded resource—a multi-component campsite and adobe—was nominated to the NRHP in 1972 and is outside of the proposed API/APE. The six new resources that were recorded are not recommended as eligible for listing in the NRHP or CRHR. The Proposed Project would not result in direct or indirect effects to the NRHP-nominated resource or to the transmission line that is recommended as eligible for the NRHP/CRHR. No prehistoric or ethnohistoric archaeological resources or tribal cultural resources (TCRs) were located during the surface survey.

Maritime

Chronicle Heritage's Maritime Division analyzed the magnetometer, side-scan sonar, and subbottom profiler data collected during the intensive submerged cultural resources remote sensing survey; coordinated with the State of California's Underwater Archaeologist; and performed a literature review and historical research.

The submerged cultural resources remote-sensing survey identified 74 magnetic anomalies, 15 side-scan sonar contacts, and 21 subbottom profile reflectors associated with 12 geomorphological features in the form of disparate relict channel landforms within the proposed API/APE, which are discussed in further detail in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report. Eleven of these subbottom profiler features were not indicative of intact relict landforms that contained the potential to possess cultural material. A submerged paleolandform was identified within the proposed API/APE and would be crossed by the proposed LSPGC Submarine Segment; however, it would seem this feature is indicative of a braided network of dynamic river channels. As such, there is a low probability for the potential for intact cultural material deposits. Following the submerged cultural resources remote-sensing

survey, three targets were identified as potentially significant. Each target's side-scan sonar contact was classified as structural and identified as a magnetic anomaly. Target 1 and Target 2 contained vessel-like structural components, and Target 3 is believed to represent the remains of a wooden barge-like watercraft. Therefore, the three targets were determined to be potentially significant and are recommended for avoidance or further investigation, as discussed in further detail in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report.

5.5.1.1.3 Resource Descriptions

Descriptions and evaluations of terrestrial resources are described in Section 6 Cultural Resource Evaluations of Attachment 5.5-A: Cultural Resources Technical Report. The eligibility evaluations consider Criteria A, B, C, and D or the NRHP and Criteria 1, 2, 3, and 4 of the CRHR. Additionally, the evaluations in Attachment 5.5-A: Cultural Resources Technical Report consider the National Park Service's (NPS's) seven aspects of integrity. Descriptions of maritime resources are described in Attachment A of Attachment 5.5-A: Cultural Resources Technical Report. Maritime resources were not evaluated for eligibility as all potentially significant resources would be avoided during construction.

5.5.1.2 Cultural Setting

5.5.1.2.1 Prehistory

The most recently updated prehistory of the San Francisco Bay Area is presented by Milliken and others (2007). Also applicable to the Proposed Project vicinity is evidence gathered from recent archaeological investigations conducted in the Upper Los Vaqueros Watershed, which is approximately 15 miles south of the Proposed Project. These studies have revealed approximately 10,000 years of occupation, one of the longest sequences of human presence yet documented in a single locality in the broader San Francisco Bay Area (Meyer and Rosenthal 1997; Price et al. 2008). The prehistory presented in Meyer and Rosenthal (1997) is summarized in this subsection to provide a context within which to evaluate cultural resources and develop potential research questions to guide recommendations for mitigation.

Meyer and Rosenthal (1997) organized the prehistory of the Los Vaqueros region into five periods consisting of the following:

- Lower Archaic period 10,000 to 6,000 B.P (8050 to 4050 B.C.),[1]
- Middle Archaic period 6,000 to 2,500 B.P. (4050 to 50 B.C.),
- Upper Archaic period 2,500 to 1,500 B.P. (50 B.C. to A.D. 450),
- Upper Archaic-Emergent period transition 1,500 to 700 B.P. (A.D. 450 to 1250), and
- Emergent period 1,000 to 200 B.P. (A.D. 1250 to ca. 1750).

Two different chrono-cultural frameworks are commonly used to organize the archaeological record in the San Francisco Bay Area. One system comprises the Early-Middle-Late period divisions established by Beardsley (1954), commonly referred to as the Central California Taxonomic System (CCTS) (Gerow with Force 1968). The other system is based on the Archaic-Emergent period chronology established by Fredrickson (1973, 1994). The CCTS divisions are

[1] When dates are presented in B.P., the corresponding B.C./A.D. dates are provided in parentheses as a conceptual aid.

primarily based on changes in material culture, including stylistic changes in artifacts such as shell beads, and the presence or absence of various artifact types or classes. Some temporal subdivisions have been refined to 200- to 300-year intervals on the basis of shell bead horizons that have recently been recalibrated using the radiocarbon dating technique (e.g., Groza 2002). The Archaic-Emergent period chronology represents changes in subsistence and settlement patterns, economic strategies, and stylistic elements of the material culture. Choice of chrono-cultural framework depends on the research questions and the nature of the archaeological record being studied. It is interesting to note that Milliken et al. (2007) use a hybrid system for their recent reevaluation of the prehistory of the San Francisco Bay Area, applying a combination of the temporal sequence of the CCTS, and the cultural sequence of the Archaic-Emergent framework.

As Meyer and Rosenthal (1997) point out, the archaeological record of the Los Vaqueros watershed area was not well known when the CCTS was developed, with the earliest period beginning after people had been living in the Los Vaqueros area for thousands of years. A general scarcity of temporally diagnostic artifact types, such as shell beads, from this area made the temporal divisions of the CCTS, which were based largely on changes in temporally diagnostic artifact types, not effective for linking discrete deposits from the Los Vaqueros area to time-specific subperiods of the CCTS (Price et al. 2008). For these reasons, Meyer and Rosenthal framed their analysis with the Archaic-Emergent scheme, which allows for greater time depth. This framework also places the interpretive focus on behavioral changes, such as shifts in economic strategies and mobility patterns, though these are identified in part by temporally diagnostic artifacts, such as millingslabs or mortars. Nonetheless, with the accumulation of evidence in the 1990s from the archaeological excavations undertaken as part of the mitigation for the Los Vaqueros Reservoir, Meyer created a chrono-cultural sequence largely based on artifact types for the Los Vaqueros area (Milliken et al. 2007). This sequence presents the updated Los Vaqueros scheme in relation to both the Archaic-Emergent scheme (Fredrickson 1974) and the Early-Middle-Late scheme (Bennyhoff and Hughes 1987).

Notable developments and refinements of the chrono-cultural framework for the Los Vaqueros area directly resulted from the cultural resources mitigation measures stemming from compliance with both CEQA and the National Historic Preservation Act of 1966 (NHPA) (Price et al. 2008). These include the following:

- Extending the Lower Archaic 2,000 years deeper in time to at least 10,000 B.P. (8050 B.C.), formerly the province of the PaleoIndian period according to Fredrickson (1974), and a time not covered by the CCTS (e.g., Bennyhoff and Hughes 1987).

- Extending the beginning of the Middle Archaic 1,000 years back in time to around 6000 B.P. (4050 B.C.), whereas the Fredrickson Middle Archaic originates around 5000 B.P. (3050 B.C.) (1974).

- Dividing the Upper Archaic to include an Upper Archaic-Emergent transition period.

- Dividing the Emergent period into a Lower and an Upper Emergent period.

Prehistoric components from sites investigated in the Proposed Project area include one from the Lower Archaic, four from the Middle Archaic, six from the Upper Archaic, seven from the Upper Archaic-Emergent transition, and six from the Emergent.

Lower Archaic Period

The earliest occupations during the Lower Archaic period are characterized by high residential mobility evidenced by short-term occupation of sites. Milliken et al. (2007) refer to this as a generalized mobile forager pattern. Artifacts characteristic of this period include millingslabs and handstones for processing plant resources such as seeds and nuts, and wide-stemmed projectile points. The radiocarbon date of 7920 cal B.C. represents the earliest date for cultural deposits from this period in the Kellogg Creek valley, obtained from a discrete charcoal concentration beneath an inverted millingslab at CA-CCO-696. The deposit lies at a depth of between 390 and 415 centimeters (Price et al. 2008).

Other characteristics of the Lower Archaic period include the importation of obsidian from the North Coast Ranges and the preference for a tightly flexed burial position. CA-CCO-696 yielded a tightly flexed burial at a depth of 325 centimeters, radiocarbon-dated to 5490 cal B.C. A few hundred meters from CA-CCO-696, the oldest documented grave in the Kellogg Creek valley was recovered from CA-CCO-637, radiocarbon-dated to 6570 cal B.C. (Meyer and Rosenthal 1998).

Middle Archaic Period

During the Middle Archaic period, residential mobility had decreased and base camps were established. Groundstone mortars and pestles replaced handstones and millingslabs by 4000 cal B.C. (Milliken et al. 2007). A wooden mortar was recovered with a groundstone pestle at CA-CCO-637, radiocarbon-dated to 3800 cal B.C. (Meyer and Rosenthal 1997). A groundstone mortar was recovered in association with deposits containing the remains of acorns and wild cucumber, dating to at least 5,700 years ago, at CA-CCO-696 (Rosenthal and Meyer 2004; Wohlgemuth 2004). In addition to acorns, camp residents ground manzanita seeds and grey pine nuts. Despite the shift in plant resource processing tools, there is no documented change in associated floral assemblages throughout the Archaic period (Meyer and Rosenthal 1997). During the Middle Archaic period, burial positions became more variable, ranging from flexed to extended positions. The first cut shell beads are found in mortuary contexts. Obsidian was obtained from distant sources (Price et al. 2008).

Upper Archaic Period

During the Upper Archaic period, residential mobility decreased and fixed villages were established. Plant resources from both the uplands and grassland-savanna were gathered, with an increased use of small seeds, but a continued preference for acorns. Bedrock milling stations, characterized by mortar cups ground into boulders and bedrock outcrops, first appeared between 1600 and 1300 B.P. (A.D. 350 to 650), based on stratigraphic evidence (Meyer and Rosenthal 1997). Bedrock milling stations are difficult to date because the mortars in the bedrock outcrops are only rarely found in stratigraphic association with intact midden containing datable evidence.

The Upper Archaic period burial customs once again show a preference for flexed burials. A difference in social status has been inferred from the differential distribution of uniformly made shell beads and ornaments in mortuary contexts. The shell also indicates the continuing importance of trade and exchange (Price et al. 2008).

Upper Archaic-Emergent Period Transition

During the Upper Archaic-Emergent period transition, there was a shift in burial practices and land-use patterns. Bedrock milling stations offer tangible evidence that more locations in the valley were utilized, but in contrast to the preceding period, occupations were brief and were probably associated with resource acquisition and processing. Occupation of the valley was more varied, including shorter-term use of both the lowland and the upland, where bedrock milling stations were often located. Burial customs shifted once again to a preference for extended positions (Meyer and Rosenthal 1997). Obsidian use increased from earlier periods, but other exchange items were absent.

Emergent Period

By the Emergent period, fixed villages were once again established in the lowlands and bedrock milling stations continued to be used for bulk processing of grassland-savanna small seed resources and upland nut and berry crops. Obsidian use increased, inferred by the importation of obsidian cobbles and minimally modified flake blanks, exclusively from Napa Valley sources (Meyer and Rosenthal 1997). Milliken et al. (2007) note the introduction of the bow and arrow at the beginning of this period. The people, traditions, and culture of the Emergent Period were most likely those encountered by the earliest European visitors to the area in the second half of the 18th century (Price et al. 2008).

5.5.1.2.2 Ethnography

At the time of European contact, the proposed API/APE was within the territory of the Patwin, a southern Wintun linguistic group (Kroeber 1925, 1930; Barrette 1908), and the Ompin, Bay Miwok, a western Utian linguistic group. Two analytical zones immediately surround Suisun Marsh—the San Francisco Bay Area (Bay Miwok and Ohlone) and Middle Sacramento Valley (Patwin). Pre-mission populations in these regions were estimated as 2.1 to 4.0 persons per square mile in lands southeast of the marsh (Bay Miwok), increasing to 4.1 to 8.0 to the west and north (Meyer et al. 2013). Modern representatives of the Bay Miwok, Ohlone, and Patwin heritages are still present in the area. Section 5.18 Tribal Cultural Resources discusses ethnography and Native American history in further detail.

5.5.1.2.3 History

The history of northern California, Solano County, and the proposed API/APE, in particular, can be divided into several periods of influence to establish a historic context to assess the potential significance of historic sites in the proposed API/APE. Due to its location, approximately 40 miles northeast of San Francisco, the proposed API/APE was largely isolated from the Spanish and Mexican periods of California. Therefore, events associated with the Spanish and Mexican periods and cultural remains from those periods are not expected to be reflected in the proposed API/APE, but they are discussed briefly as a point of reference.

Spanish Era (1772-1822)

The earliest historical accounts of the area come from the Spanish explorers who ventured into the area east of the San Francisco Bay Area in the late 18th century. In 1775, when Captain Juan Manuel Ayala's expedition explored San Francisco Bay, some of his men may have ventured up the Sacramento and San Joaquin rivers during three explorations of the bay that yielded the first accurate maps of San Francisco Bay (Kamiya 2014). In 1776, the Anza-Font expedition traveled along the southern shore of Suisun Bay until reaching Antioch, where they noticed numerous campsites before turning southeast in an attempt to cross the tule swamps (Cook 1957). There is no evidence that the Spanish explored north of the river at the site of the Proposed Project during this period, but they must have passed within a few miles of it on the southern side of the river (Farris et al. 1988). No documented Spanish settlements or structures are located in the Proposed Project area.

At the time of the Spanish arrival, Solano County was home to the Patwin Indians. Some of their village places have survived phonetically in such modern places as Suisun, Soscol, Ulatis, and Putah (Solano County 2023).

Mexican Era (1822-1848)

Under the Spanish, the missions controlled the land. After Mexico seceded from Spain in 1821, land was granted to private citizens, a practice that increased significantly after the 1833 act of the Mexican legislature that established the secularization of the missions (Journal of American History [JAH] 2005). By 1845, the last of the mission land holdings were relinquished, opening the way for the large ranchos common to California in the mid-1800s. Predominant land use on the ranchos was the raising of livestock and ranching. The proposed API/APE straddles two Mexican-era land grants, or ranchos, within Solano County and Contra Costa County.

The northern of these was the Rancho Ulpinos. It included 17,726 acres in southern Solano County, including what would become the cities and communities of Collinsville, Rio Vista, Newtown, Birds Landing, and Montezuma. This rancho includes two watercourses: the Sacramento River and the Estero Ulpinos. This rancho was given to John Bidwell in 1852 by Governor Manuel Micheltorena (Perez 1982; U.S. District Court [USDC] 1857).

The 1848 Treaty of Guadalupe Hidalgo that ceded California to the U.S. provided that the land grants would be honored. As required by the Land Act of 1851, a claim for Rancho Los Ulpinos was filed with the Public Land Commission in 1852, and the grant was patented to John Bidwell in 1866 (USDC 1857).

The other rancho in the proposed API/APE of the Proposed Project is the Rancho Los Medanos, immediately south of the Rancho Los Ulpinos. It is composed of 8,853 acres, including the watercourses of the San Joaquin River and the Suisan Bay, and covers the modern-day cities of Pittsburg and Antioch (Perez 1982).

The ranch was granted in 1835 to Jose Antonio Mesa and Jose Miquel Garcia. Mesa and Garcia sold the southern half of their rancho to Colonel Jonathan D. Stevenson in 1849 and the northern half to James Walsh, Michael Murray, and Ellen Fallon in 1850. There was confusion about the orientation of the grant; and in 1851, Stevenson arranged an exchange of deeds, whereby he

received the western half of the rancho and Walsh, Murray, and Fallon received the eastern half (Supreme Court of California 1904).

As required by the Land Act of 1851, a claim for Rancho Los Medanos was filed with the Public Land Commission in 1852, and the grant was patented to Jonathan D. Stevenson et al. by 1862 (Hoffman 1862). No documented Mexican structures associated with these rancheros are documented in or near the Proposed Project area.

Historical Era (1848-Present)

Prior to the 20th century, the history of both Contra Costa and Solano counties was overwhelmingly ranching and farming in character (EDAW 2008). During Mexican occupation, and for some years after that, cattle raising was the principal industry (EDAW 2008).

In the late 1840s and 1850s, former gold seekers and pioneers began settling Contra Costa and Solano counties, where they raised livestock and cultivated fruit orchards, vineyards, wheat, barley, and oats (EDAW 2008). Produce and livestock were transported overland by wagons to the many sloughs along the river, and then shipped by water to waiting markets. In the late 19th century, the development of the railroads spurred the economy by allowing the shipment of local goods to East Coast markets, significantly bolstering economic development, agricultural production, and population growth (EDAW 2008).

Twelve townships were established in Solano County between 1850 and 1871. Although the largest towns were adjacent to San Pablo and Suisun Bays, most towns were situated at the ends of sloughs or channels that primarily ran through the eastern portion of the county, including the small town that became Collinsville. These earliest communities in Contra Costa County (i.e., Antioch, Pittsburg, and Walnut Creek) have grown into thriving cities and towns (McCullough 2022).

History of Pittsburg

Its earliest recorded history of the Pittsburg area dates to 1839 when the Mexican government granted nearly 9,000 acres of Rancho Los Medanos to brothers Jose Antonio Mesa and Miguel Jose Mesa Garcia. In 1849, the land was purchased by Colonel Jonathon Drake Stevenson and Dr. William C. Parker. The first streets were laid out by future U.S. Army General William Tecumseh Sherman (City of Pittsburg 2022).

The area soon became known as New York Landing, and by 1855 was a fishing village of approximately 500 residents. By the 1870s, the community thrived on fishing and canning industries, which would last for over 100 years.

Coal was discovered in the Mt. Diablo foothills of Contra Costa County and became one of the biggest industries in the county from the 1860s until the early 1900s (McCullough 2022). With the discovery of coal, the town of New York Landing became known as Black Diamond and shown on local maps for the first time in 1868 due to the influence of the Black Diamond Coal Company. Steam-powered engines moved coal cars down the tracks along present-day Railroad Avenue to the waterfront docks, terminating at the waterfront coaling station and offloaded to awaiting ships on the way to market. The boom ended in 1885, and the company moved to Washington state to work a new claim (City of Pittsburg 2022).

During the 1870s, commercial fishing became a lucrative endeavor. The Black Diamond Cannery opened at the foot of Los Medanos Street. By 1882, a network of 10 canneries formed along the Delta. An industry was born with fishermen, packing plants, boat builders, and the like dominating the local waterfront for the next 80 years. The town boasted the largest Delta fishing community in the state, made up primarily of Sicilian immigrants, the families of which have remained in the area for generations (City of Pittsburg 2022).

Charles Appleton Hooper, who became the local father of industry, was a wealthy lumber baron who purchased the Rancho Medanos land grant in 1900. He encouraged the city government to supply electricity to the town and the town incorporated as Black Diamond in 1903. A rubber works and a steel company were started along with a large foundry. Pittsburgh industry and manufacturing created thousands of living wage jobs. In 1911, the city changed its name to Pittsburg because of the newly founded steel industry (City of Pittsburg 2022).

In 1942, Camp Stoneman was built as the main point of embarkation on the West Coast during World War II. It closed in 1954, and its property became the City of Pittsburg and was used for a school and commercial and residential development (Pittsburg Historical Museum 2024).

History of Collinsville

Early in 1846, Lansford W. Hastings acted as an agent responsible for finding a site for a Mormon colony and chose an area in today's southeastern Solano County on the Sacramento River near present-day Collinsville, The Mormon movement to California was part of a general exodus from the East and Midwest. The Mormons had been forced to leave their homes in Illinois and headed some place "beyond the Rocky Mountains." At the same time, those members of' the Church in the eastern states were directed to proceed by ship to a spot on the Pacific Coast (Baldridge 1956).

In 1846, 238 Mormon immigrants landed in San Francisco on a ship from New York as an initial attempt to establish a Mormon colony in Northern California (McPhate 2019). Within a year, they built 100 permanent structures in San Francisco, including the first bank, library, and English-speaking school. The group's leader, Sam Brannan, started the city's first newspaper, the California Star, and became its first millionaire. Other Mormons founded towns, pioneered farming, and became among the first gold miners (McPhate 2019). It was around this time that Hastings built a four-room adobe in anticipation of a large land grant from the Mexican government to accommodate the Mormon arrivals (Bowen 2000).

The event known as the Bear Flag Revolt changed Hastings's plans. In June 1846, 33 American immigrants rebelled against the Mexican government in the town of Sonoma because they had not been allowed to buy or rent land and had been threatened with expulsion. This short-lived rebellion added to the tension of the recent outbreak of the Mexican-American War (NPS 2022). In the wake of these hostilities, Hastings abandoned the adobe house, which remained unoccupied until 1852. After that, a series of owners lived in it until PG&E bought the land in 1964. The old, abandoned adobe still stands, but is rapidly deteriorating because of a lack of maintenance and a badly leaking roof (Bowen 2000).

The first permanent settler in Montezuma Township, as Collinsville was then called, was L.P. Marshall. He moved into the Hastings adobe, named it the "Montezuma House," and lived there

for the next quarter of a century (Bowen 2000). In 1859, C.J. Collins settled on government land where Collinsville now stands. He surveyed the town plat and built a wharf and store (Bowen 2000).

By 1861, the Collinsville wharf was built, and the town applied for an official post office, allowing for better business and trade in the area (Supreme Court of California 1882). In 1861, George W. Miller was appointed the first postmaster. Collinsville soon became an important shipping port for hides and tallow (Bowen 2000).

The small fishing village was approved for a steam ferry in 1868 to travel between Collinsville, New York Landing, and Antioch. It soon became a major ferry stop for hides and tallow crossing the Carquinez Strait while traveling to the cities farther south. In 1867, the town was purchased by S.C. Bradshaw, who renamed the town Newport and began selling some 29,000 lots, many of which were submerged at high tide. His scam failed, and the sheriff seized the town. The land was later sold to E.I. Upham, who returned the name Collinsville to the town in 1872 (Bowen 2000).

At one point, before the bridges were built, one of the passenger railroad lines between Sacramento and San Francisco passed through Collinsville. The train would unbuckle at Collinsville and be pulled across the Delta by barge (requiring several trips), and then be rebuckled on the other side at the foot of Railroad Avenue in Pittsburg to resume its trip to San Francisco.

By the 1870s, Collinsville had a large salmon cannery and hotels and stores that serviced its workers. When the cannery closed, Collinsville began declining; the population fell to just eight people and some 20 homes. Although the population has increased slightly since then, a fire in 2014 destroyed much of the town.

History of Railroads

In the late 1840s and 1850s, produce and livestock were transported overland by wagons to the many sloughs throughout the county, and then shipped by water to waiting markets. In 1868, with the completion of the California Pacific Railroad through Solano County, the shipment of goods to East Coast markets was accelerated and expanded (EDAW 2008).

In 1913, the Oakland, Antioch, and Eastern Railway, a high-speed electric interurban railway, opened its 93-mile route from San Francisco to Sacramento through largely unpopulated parts of southern Solano County (Boehle 2013). In 1928, the Sacramento Northern Railway purchased the railway, but the Depression and the popularity of the automobile contributed to the end of passenger service in 1940; by 1987, the railway had been abandoned (EDAW 2008).

The coming of the railroads in the latter part of the 1800s and the early 1900s to Contra Costa County made the industrial development that was occurring in Pittsburg even more attractive (McCullough 2022). The Central Pacific Railroad (CP) was chartered in 1862 by Congress to build a railroad eastward from Sacramento to complete the western part of the first Transcontinental Railroad in North America. The CP was the first transcontinental railroad to pass through present-day Pittsburg when the tracks were built in 1878 (Pittsburg Historical Museum 2024).

The Cornwall railroad station served passengers, as well as freight. Cornwall was a small enclave separate from the village of Black Diamond, but would eventually be annexed into Pittsburg in 1911. Black Diamond was a commercial fishing port situated on Suisun Bay, and the railroad made possible rail shipping of fish, which up to that point had been shipped to market (Pittsburg Historical Museum 2024).

The Black Diamond Railroad (BD) was active at this time and was a short rail line shuttling coal from the local mines in the foothills to the waterfront Black Diamond coaling station. Where the CP crossed the BD, a train trestle and large earthen embankment was built to span the CP line and allow for uninterrupted service by both railroad lines (Pittsburg Historical Museum 2024).

In 1888, the Southern Pacific (SP) bought out the CP. In turn, the Union Pacific (UP) merged with the SP in 1996 and assumed the Union Pacific name. Today, manufactured goods from local and area industry are what can be seen along the local rails and switchyards. The UP mainline is known as the Mococo Line and is under the UP Tracy Subdivision of the railroad network (Pittsburg Historical Museum 2024).

History of the Transmission Lines

PG&E was formed in 1905 by the merger of the San Francisco Gas Company and the California Electric Company. The need for transmission lines in Northern California began during the 1920s, when the demand for electricity grew in relationship to commercial and residential development. Towers that pre-date World War II still exist in the major cross-tie electrical grids linking various power plants and substations. These early major electrical transmission lines remain critical to providing a reliable form of electrical power to much of California. The post-World War II period of electrical transmission generation and development was spurred on by rapid population growth and increasing demand from commercial and residential customers (Coleman 1952).

PG&E's Pittsburg-Tesla 230 kV Transmission Line was not the first electrical high-lead tie line built in the state nor in Contra Costa County or the East Bay Area, which witnessed electrical transmission tower development dating to the 1920s (Supernowicz 2017). PG&E's Pittsburg-Tesla 230 kV Transmission Line, which runs a distance of approximately 31 miles from City of Pittsburg through unincorporated portions of Contra Costa and Alameda counties, was constructed as part of this expansion. The Pittsburg-Tesla 230 kV Transmission Line (running from PG&E's existing Pittsburg substation to PG&E's existing Tesla substation) was constructed in 1959-1960 and consists of 147 towers. It is considered by PG&E as a critical supply line for Contra Costa and Alameda counties (Lang 2008). The transmission towers of the 1960s were made of steel and riveted together with lattice and bents for support. They have not changed much since the 1920s. Most of the existing steel high-lead electrical transmission towers in California date to after World War II. Transmission lines were attached to the top of the tower along a slightly arched or V-shaped riveted steel lattice brace. In an electrical power grid or transmission system, the electricity first went to a transformer at the power plant that boosted the voltage. The long, thick cables of transmission lines were made of copper or aluminum because they have a low resistance (Supernowicz 2017).

5.5.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.5.2.1 Regulatory Setting

5.5.2.1.1 Federal

National Historic Preservation Act

Authorized by the NHPA and administrated by the NPS, the NRHP is the official list of the nation's historic places deemed worthy of preservation, and it includes districts, sites, buildings, structures, and objects that are significant in American history, prehistory, architecture, archaeology, engineering, and culture. To be eligible for listing in the NRHP, a property must retain sufficient integrity to convey its significance and meet at least one of the following evaluation criteria:

A. Is associated with events that have made a significant contribution to the broad patterns of our history; or

B. Is associated with the lives of significant persons in our past; or

C. Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or

D. Has yielded, or may be likely to yield, information important in history or prehistory.

Should a cultural resource be determined eligible for NRHP listing, it is considered a "historic property" under Title 36, Section 60.4 of the CFR. Properties listed or formally determined eligible for listing in the NRHP are automatically listed in the CRHR (Public Resources Code [PRC] Section 5024.1[d][1]).

The NPS publication, *How to Apply the National Register Criteria for Evaluation*, National Register Bulletin 15, establishes how to evaluate the integrity of a historic property and defines integrity as "the ability of a property to convey its significance" (NPS 1997). The evaluation of integrity must be grounded in an understanding of a historic property's physical features and how they relate to the aspects of integrity. Determining which of these aspects are most important to a property requires knowing why and at what level (i.e., local, state, or national) it is significant and its period of significance. Although "rarity" of property type is not an aspect of significance, it is considered when assessing integrity.

To retain historic integrity, a property must possess several, and usually most, aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. These seven aspects of integrity are defined as follows:

1. Location is the place where the historic property was constructed or the place where the historic event occurred.

2. Design is the combination of elements that create the form, plan, space, structure, and style of a property.

3. Setting is the physical environment of a historic property and refers to the character of the site and the relationship to surrounding features and open space. Setting often refers to the basic physical conditions under which a property was built and the functions it was intended to serve. These features can be either natural or man-made, including vegetation, paths, fences, and relationships between other features or open space.

4. Materials are the physical elements that were combined or deposited during a particular period or time and in a particular pattern or configuration to form a historic property.

5. Workmanship is the physical evidence of crafts of a particular culture or people during any given period of history or prehistory and can be applied to the property as a whole or to individual components.

6. Feeling is a property's expression of the aesthetic or historic sense of a particular period. It results from the presence of physical features that, when taken together, convey the property's historic character.

7. Association is the direct link between the important historic event or person and a historic property.

Abandoned Shipwreck Act

The Abandoned Shipwreck Act (ASA) was signed into law on April 28, 1988. The purpose of the ASA is to protect historic shipwrecks in the U.S. from treasure hunters and unauthorized salvagers. The ASA is found in public law at P. L. 100–298, §2, Apr. 28, 1988, 102 Stat. and in Title 43, Sections 2101-2106 et seq. of the U.S. Code.

The ASA establishes federal government ownership over most abandoned shipwrecks in the nation's rivers and lakes, and in the ocean to a distance of 3 miles offshore (NPS 2023). Under the ASA, the U.S. government asserted title to three categories of abandoned shipwrecks:

- Abandoned shipwrecks embedded in a state's submerged lands;
- Abandoned shipwrecks embedded in coralline formations protected by a state on its submerged lands; and
- Abandoned shipwrecks located on a state's submerged lands and included in or determined eligible for inclusion in the NRHP.

Upon asserting title, the federal government transferred its title to the government entity that owned the submerged lands containing the shipwrecks. As a result, state governments have title to shipwrecks located on state lands, the federal government has title to shipwrecks located on federal lands, and Native American tribes have title to shipwrecks located on tribal lands. The federal government, however, continues to hold title to sunken U.S. warships and other shipwrecks entitled to sovereign immunity, no matter where the vessels are located. Such vessels are not affected by the statute (NPS 2023).

The ASA stipulates that the laws of salvage and finds do not apply to abandoned shipwrecks claimed by the government under the ASA. It removes those shipwrecks from the jurisdiction of Federal Admiralty Court, such that the wrecks, their cargo, and content are no longer treated as commodities lost at sea and in need of salvage. For archaeology, it means that shipwrecks are treated as historically and scientifically valuable (NPS 2023).

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979 provides for the protection of archaeological resources more than 100 years old that occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the responsible federal agency. This process includes a 30-day notification to interested persons, including Native American tribes, by the agency to receive comments regarding the intended issuing of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to ARPA. The law also provides for curation of archaeological artifacts, ecofacts, notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided for in Title 36, Part 79 of the CFR.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) requires federal agencies and institutions that receive federal funds (including museums, universities, state agencies, and local governments) to repatriate or transfer Native American human remains and other cultural items to the appropriate parties by

- Consulting with lineal descendants, Native American tribes, and Native Hawaiian organizations on Native American human remains and other cultural items;
- Protecting and planning for Native American human remains and other cultural items that may be removed from federal or tribal lands;
- Identifying and reporting all Native American human remains and other cultural items in inventories and summaries of holdings or collections; and
- Giving notice prior to repatriating or transferring human remains and other cultural items.

NAGPRA recognizes the rights of lineal descendants, Native American tribes, and Native Hawaiian organizations in Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony. The Secretary of the Interior is responsible for promulgating regulations to carry out the provisions of the Act and delegated this authority to the Assistant Secretary. Since 1993, the Department of the Interior has published rules under the title "Native American Graves Protection and Repatriation Act Regulations," including the following:

- RIN 1024-AC07, 1993 Proposed Rule (58 Federal Register [FR] 31122, May 28, 1993) and 1995 Final Rule (60 FR 62134, December 4, 1995);

- RIN 1024-AC84, Civil Penalties Final Rule (68 FR 16354, April 3, 2003) and Future Applicability Final Rule (72 FR 13184, March 21, 2007);

- RIN 1024-AD68, 2007 Proposed Rule Disposition of Culturally Unidentifiable Human Remains (72 FR 58582, October 16, 2007) and 2010 Final Rule Disposition of Culturally Unidentifiable Human Remains (75 FR 12378, March 15, 2010);

- RIN 1024-AE00, Disposition of Unclaimed Cultural Items Final Rule (80 FR 68465, November 5, 2015); and

- RIN 1024-AE19. to clarify and improve upon the systematic processes for disposition or repatriation of Native American human remains and cultural items (87 FR 63202).

This final rule revises and replaces definitions and procedures for lineal descendants, Native American tribes, Native Hawaiian organizations, museums, and federal agencies to implement NAGPRA. These regulations clarify and improve upon the systematic processes for the disposition or repatriation of Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony. These regulations provide a step-by-step roadmap with specific timelines for museums and federal agencies to facilitate disposition or repatriation. Throughout these systematic processes, museums, and federal agencies must defer to the Native American traditional knowledge of lineal descendants, Native American tribes, and Native Hawaiian organizations. This rule went into effect January 12, 2024.

5.5.2.1.2 State

California Environmental Quality Act

CEQA requires the lead agency to consider the impacts of a project on two categories of cultural resources: historical resources (Section 15064.5[b]) and unique archaeological resources (Section 15064.5[c] and PRC Section 21083.2). CEQA also requires the lead agency to consider the impacts of a project on TCRs (PRC Section 21074). CEQA and other California laws also set forth special rules for dealing with any human remains that might be encountered during construction. Pursuant to PRC Sections 5097.98(b)(1)(A) and 5097.98 (d)(2), this includes consultation with the Most Likely Descendant (MLD) for the nondestructive removal and analysis of any items identified as being associated with Native American human remains.

As defined in Appendix G of the 2019 CEQA Statute & Guidelines, project impacts to cultural resources would be considered significant if it was determined that a project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;
- Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a TCR as defined in PRC Section 21074.

Historical or archaeological resources include the following.

- A resource listed in or determined to be eligible by the State Historical Resources Commission (SHRC) for listing in the CRHR;
- A resource included in a local register of historical resources; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant.

The SHRC has also developed criteria to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. The CRHR identifies historical resources (i.e., cultural resources that are listed in or eligible for listing in the CRHR for state and local planning purposes), determines eligibility for state historic preservation grant funding, and affords certain protections under CEQA. Generally, a resource is considered significant if it is 45 years old or older and possesses integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, it must meet at least one of the following criteria for listing in the CRHR:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

- It is associated with the lives of persons important in our past;

- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

- It has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources deemed "historically significant," then project alternatives and mitigation measures must be considered. Substantial adverse change in the significance of a resource includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance would be materially impaired. The significance of a historical or archaeological resource is materially impaired if a project demolishes or materially alters in an adverse manner those physical characteristics of the resource that justify its inclusion in, or eligibility for inclusion in, the CRHR or other local register of historic resources.

CEQA also applies to effects on archaeological sites that do not meet the criteria for historical resources but do meet the definition of a "unique archaeological resource" (PRC Section 21083[g]). A unique archaeological resource is an archaeological artifact, object, or site

about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- It contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- It is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code (HSC), Division 7, Part 2, Chapter 5 (Sections 8010 through 8030). Several provisions of the PRC also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the HSC states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in PRC Section 5097.99. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment. PRC Chapter 1.7, Section 5097.5/5097.9 defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor. Specifically, a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands**.**

Assembly Bill 52

Signed into law in September 2014, California Assembly Bill (AB) 52 created a new class of resources—TCRs—for consideration under CEQA. TCRs may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the CRHR. AB 52 requires that the lead CEQA agency must consult with California Native American tribes that have requested consultation for projects that may affect TCRs. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause a substantial adverse change to a TCR constitutes a significant effect on the environment unless mitigation reduces such effects to a less-than-significant level.

5.5.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county regulations are not applicable as Solano, Sacramento, and Contra Costa counties do not have jurisdiction over the Proposed Project. Because the CPUC has exclusive jurisdiction over the Proposed Project siting, design, and construction, the Proposed Project is not subject to local regulations or discretionary permits. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan includes the following relevant cultural resources goals:

- Goal: Collaboration with Native American groups to protect traditional cultural places and sacred spaces in the context of land use decisions.
- Goal: Leveraging the county's historic capital to drive economic development, especially tourism.

The policies related to archaeological and cultural resources outlined by the Solano County General Plan include the following:

- Policy RS.P-38: Identify and preserve important prehistoric and historic structures, features, and communities.
- Policy RS.P-39: Tie historic preservation efforts to the County's economic development pursuits, particularly those relating to tourism.
- Policy RS.P-40: Consult with Native American governments to identify and consider Native American cultural places in land use planning.

Sacramento County General Plan

The Sacramento County General Plan includes the following relevant cultural resources goal and policies:

- Goal: Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socioeconomical importance.

- Policy CO-150: Utilize local, state and national resources, such as the NCIC, to assist in determining the need for a cultural resources survey during project review.

- Policy CO-151: Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.

- Policy CO-152: Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

- Policy CO-153: Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission in developing recommendations.

- Policy CO-154: Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

- Policy CO-155: Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

- Policy CO-156: The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

- Policy CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

- Policy CO-158: As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

Contra Costa County General Plan

The Contra Costa County General Plan includes the following relevant cultural resources goal and policies:

- Goal 9-G: To identify and preserve important archaeological and historic resources within the county.

- Policy 9-28: Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

- Policy 9-30: Development surrounding areas of historic significance shall have compatible and high-quality design in order to protect and enhance the historic quality of the area.

5.5.3 Impact Questions

5.5.3.1 CEQA Impact Analysis

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For cultural resources, the CEQA Environmental Checklist asks if the Proposed Project would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5; or
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or
- Disturb any human remains, including those interred outside of dedicated cemeteries.

5.5.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for cultural resources.

5.5.4 Impact Analysis

5.5.4.1 Cultural Resources Impact Analysis

5.5.4.1.1 Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. Only one previously recorded resource, historic transmission lines, within the proposed API/APE is recommended as eligible for listing in the NRHP or CRHR. An NRHP-nominated resource, the Hastings Adobe, is adjacent to the proposed API/APE. Six new resources were recorded within the proposed API/APE that are not being recommended as eligible for listing in the NRHP or CRHR. The LSPGC Proposed Project components would not result in direct or indirect effects to the Hastings Adobe that is adjacent to the proposed API/APE or to the transmission line that is recommended as eligible for the NRHP/CRHR. The cables of the proposed LSPGC 230 kV Submarine Segment would be located over 150 feet from the three potentially significant submerged resources located within the proposed API/APE. As a result, these resources would be avoided by the proposed LSPGC 230 kV Submarine Segment.

In the unlikely event that a previously unidentified historic resource is encountered during ground-disturbing activities associated with the LSPGC Proposed Project components, the resource could be damaged by grading, excavation, trenching, or other construction activities. To address this potential impact, a Worker's Environmental Awareness Program (WEAP) would be

prepared to train construction personnel on the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) during construction, in accordance with applicant-proposed measure (APM) CUL-1. The WEAP would provide construction personnel with instruction on compliance with APMs and mitigation measures developed after pre-construction surveys. Additionally, per APM CUL-2, cultural resource surveys would be conducted prior to construction for any Proposed Project areas that were not previously surveyed, which may include areas where landowner permission was not obtained and/or new or modified staging areas, pull sites, or other work areas. Where operationally feasible, all NRHP- and CRHR-eligible resources discovered as part of the cultural resource surveys to be conducted would be protected from direct Proposed Project impacts by redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas) should they be found to be in conflict with the LSPGC Proposed Project components' footprint.

During construction, APM CUL-3 would be implemented so that in the event that previously unidentified cultural resources are uncovered during excavation, a qualified archaeologist would inspect the discovery and determine whether further investigation is required. If the discovery could be avoided and no further impacts would occur, the resource would be documented on California Department of Parks and Recreation cultural resources records and no further effort would be required. If the resource could not be avoided and could be subject to further impact, LSPGC would evaluate the significance and CRHR eligibility of the resource and, in consultation with the CPUC, determine appropriate treatment measures. Preservation in place would be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3), if it is demonstrated that resources cannot feasibly be avoided, a qualified archaeologist, in consultation with the CPUC (and, if the unearthed resource is prehistoric or Native American in nature, the Native American representative), would develop additional treatment measures, such as data recovery, consistent with CEQA Guidelines Section 15126.4(b)(3)(CD).

As previously discussed, a paleolandform was identified within the proposed API/APE and would be crossed by the proposed LSPGC Submarine Segment; however, the probability is low for the presence of cultural material. Prior to construction, the paleolandform would be evaluated through coring and soil analysis, and if analysis indicates the potential for cultural resources, a Paleolandform Monitoring Plan would be developed, approved by the CPUC, and implemented during submarine cable installation within 500 feet of the potential cultural resources in accordance with APM CUL-4.

With implementation of APMs CUL-1 through CUL-4, no substantial adverse changes related to a historical resource are anticipated, and impacts to historical resources as defined in PRC Section 15064.5 would be less than significant.

PG&E Components

Less-than-Significant Impact. Only one previously recorded resource, the historic transmission lines, within the proposed API/APE is recommended as eligible for listing in the NRHP or CRHR. Six new resources were recorded that are not being recommended as eligible for listing in the NRHP or CRHR. The PG&E Proposed Project components would not result in direct or indirect effects to the NRHP-nominated resource that is adjacent to the proposed API/APE or to the transmission line that is recommended as eligible for the NRHP/CRHR.

In the unlikely event that a previously unidentified historic resource is encountered during ground-disturbing activities associated with the PG&E Proposed Project components, the resource could be damaged by grading, excavation, trenching, or other construction activities. To address this potential impact, a WEAP would be prepared to train construction personnel on the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) during construction, in accordance with PG&E's Construction Measure (CM) CUL-1. The WEAP would provide construction personnel with instruction on types of cultural resources or fossils that could occur at the project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing cultural resources. Additionally, per CM CUL-2, known resource sites would be marked with flagging tape, safety fencing, and/or sign designating it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment would not intrude on these sites during construction. If sites cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level, including, but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.

During construction, CM CUL-3 would be implemented so that in the event that previously unidentified cultural resources are uncovered during excavation, work would stop in that area and within 50 feet of the find until the cultural resources specialist (CRS) or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies.

With implementation of CMs CUL-1 through CUL-3, no substantial adverse changes related to a historical resource are anticipated and impacts to historical resources as defined in PRC Section 15064.5 would be less than significant.

5.5.4.1.2 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. The pedestrian survey of the Proposed Project area did not identify significant archaeological resources within or adjacent to the proposed API/APE. Three potentially significant submerged resources located within the proposed API/APE have not been evaluated for CRHR eligibility. The cables of the proposed LSPGC 230 kV Submarine Segment would be located over 150 feet from the three submerged resources and therefore would be avoided. Additionally, a submerged paleolandform was identified within the proposed API/APE and would be crossed by the proposed LSPGC Submarine Segment; however, the probability is low for the presence of cultural material.

In the unlikely event that a previously unidentified archaeological resource is encountered during ground-disturbing activities associated with the LSPGC Proposed Project components, the resource could be damaged by grading, excavation, trenching, or other construction activities. Where operationally feasible, all eligible resources discovered during ground-disturbing activities would be protected from direct LSPGC Proposed Project components' impacts by redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas), as

described previously. With implementation of APMs CUL-1 through CUL-4, no substantial adverse changes related to an archaeological resource are anticipated, and impacts to archaeological resources as defined in PRC Section 15064.5 would be less than significant.

PG&E Components

Less-than-Significant Impact. The pedestrian survey of the Proposed Project area did not identify significant archaeological resources within or adjacent to the proposed API/APE. The PG&E Proposed Project components would not be located within the vicinity of the three potentially significant submerged resources located within the proposed API/APE.

In the unlikely event that a previously unidentified archaeological resource is encountered during ground-disturbing activities associated with the PG&E Proposed Project components, the resource could be damaged by grading, excavation, trenching, or other construction activities. Where operationally feasible, all eligible resources discovered during ground-disturbing activities associated with the PG&E Proposed Project components would be avoided, as described previously. If sites cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.

With implementation of CMs CUL-1 through CUL-3, no substantial adverse changes related to an archaeological resource are anticipated and impacts to archaeological resources as defined in PRC Section 15064.5 would be less than significant.

5.5.4.1.3 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. If human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease within a 50-foot radius of the remains and cultural resource staff and construction supervisors would be notified, as required by APM CUL-3. Further, the county coroner would then be contacted in accordance with CEQA Guidelines Section 15064.5(d) and (e), HSC Section 7050.5, and PRC Sections 5097.98 and 5097.99. The coroner would have 2 working days to examine the remains after being notified. If the remains are on federal land and the coroner determines they are Native American or if Native American cultural items pursuant to NAGPRA are uncovered, the remains would be treated in accordance with the provisions of NAGPRA (43 CFR 10) and ARPA (43 CFR 7). If the remains are not on land under federal jurisdiction and the coroner determines that the remains are Native American, the coroner would have 24 hours to notify the NAHC of the determination. Under PRC Section 5097.98, the NAHC would be required to identify a MLD, notify that person, and request that they inspect the remains and make recommendations for treatment and/or disposition. The MLD would have 48 hours after being granted site access to inspect the find and make recommendations for treatment of the human remains. Work would be suspended in the area of the find until the MLD and landowner confer on the mitigation and treatment of the human remains. However, the human remains and associated burial items would

be reburied, with appropriate dignity, on the property in a location not subject to further subsurface disturbance if one of the following occurs:

- The NAHC is unable to identify an MLD.
- The MLD fails to make a recommendation.
- The recommendation of the MLD is rejected and the mediation provided in PRC Section 5097.94(k) fails to provide measures acceptable to the landowner.

This procedure would ensure that the remains are treated in accordance with Section 15064.5(d) and (e) of the CEQA Guidelines, HSC Section 7050.5, and PRC Sections 5097.98 and 5097.99; and impacts to human remains during construction would be reduced to a less-than-significant level. O&M activities associated with the LSPGC Proposed Project components would not involve substantial ground disturbance or installation of new features; therefore, impacts to human remains are not anticipated during O&M.

PG&E Components

Less-than-Significant Impact. In the unlikely event that human remains or suspected human remains are uncovered during pre-construction testing or during construction, all work within 50 feet of the discovery would be halted and redirected to another location. The find would be secured, and the CRS or designated representative would be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the CRS would determine whether the find is an archaeological deposit and whether the provision of the CM for unanticipated cultural resources discovery would apply. If the remains are human, the CRS would immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code Section 7050.5 and PRC Section 5097.98 require that the CRS contact the NAHC within 24 hours. The NAHC, as required by PRC Section 5097.98, would determine and notify the MLD.

This procedure would ensure that the remains are treated in accordance with applicable regulations and that impacts to human remains during construction would be reduced to a less-than-significant level. O&M activities associated with the PG&E Proposed Project components would not involve substantial ground disturbance or installation of new features; therefore, impacts to human remains are not anticipated during O&M.

5.5.4.2 Human Remains

The potential for encountering human remains or grave goods during the construction of the Proposed Project is low. The procedures that would be used if human remains are encountered are described previously in Section 5.5.4.1 Cultural Resources Impact Analysis.

5.5.4.3 Resource Avoidance

The avoidance procedures that would be implemented to avoid known resources are described in APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3.

5.5.5 CPUC Draft Environmental Measures

The CPUC recommended a draft environmental measure for cultural resources associated with the discovery of human remains. The recommended environmental measure is included in Section 5.5.6 Applicant-Proposed Measures as APM CUL-3.

5.5.6 Applicant-Proposed Measures

5.5.6.1 Cultural Resources Applicant-Proposed Measures

The following APMs would be implemented for the LSPGC Proposed Project components:

- **APM CUL-1: Worker's Environmental Awareness Program.** In accordance with this measure, the Proposed Project's WEAP would include, at minimum:

  - Training on how to identify potential cultural resources and human remains during the construction process;
  - 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 Proposed Project;
  - A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and policies; and
  - A statement by the construction company or applicable employer agreeing to abide by the WEAP, and other applicable laws and regulations.

  The WEAP would be provided to all Proposed Project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker would be involved in ground-disturbing activities without having participated in the WEAP.

- **APM CUL-2: Avoid Environmentally Sensitive Areas.** Cultural resource surveys would be performed for any portion of the Proposed Project area not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys would be subject to a 50-foot buffer around the boundary of each respective resource and designated as environmentally sensitive areas. Methods of environmentally sensitive area delineation may include, as applicable, flagging, rope, tape, or fencing. The environmentally sensitive areas should be clearly marked on all pertinent construction plans. Where operationally feasible, all NRHP- and CRHR-eligible resources would be protected from direct Proposed Project impacts by Proposed Project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources would be avoided by all Proposed Project construction and restoration activities, where feasible. If work within the 50-foot buffer cannot be avoided, then monitoring would be required.

- **APM CUL-3: Inadvertent Discoveries.** In the event that previously unidentified cultural resources are uncovered during implementation of the Proposed Project, all work within 50 feet of the discovery would be halted and redirected to another location. A

qualified archaeologist(s) would inspect the discovery and determine whether further investigation is required. The qualifications of the archaeologist(s) would be approved by the CPUC and U.S. Army Corps of Engineers (USACE). If the discovery can be avoided and no further impacts would occur, the resource would be documented on California Department of Parks and Recreation cultural resource records, and no further effort would be required. If the resource cannot be avoided and may be subject to further impact, the significance and NRHP and CRHR eligibility of the resource would be evaluated and, in consultation with the CPUC and USACE, appropriate treatment measures would be determined. All work would remain halted until a Secretary of the Interior-qualified archaeologist approves the treatment measures. Preservation in place would be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3), if it is demonstrated that resources cannot feasibly be avoided, and if the unearthed resource is prehistoric or Native American in nature, a Native American representative, in consultation with the CPUC, would develop additional treatment measures, such as data recovery consistent with CEQA Guidelines 15126.4(b)(3)(C-D). Archaeological materials recovered during any investigation would be curated at an accredited curation facility or transferred to the appropriate tribal organization.

- **APM CUL-4: Paleolandform Testing.** Prior to construction, the paleolandform would be evaluated through coring and soil analysis. If this analysis indicates the potential for cultural resources, a Paleolandform Monitoring Plan would be developed, approved by the CPUC, and implemented during submarine cable installation within 500 feet of the potential cultural resources.

5.5.7 PG&E Construction Measures

5.5.7.1 Cultural Resources PG&E Construction Measures

The following CMs would be implemented for the PG&E Proposed Project components:

- **CM CUL-1: Worker Awareness Training.** PG&E would provide environmental awareness training on archeological resources protection. This training may be administered by the PG&E CRS or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the Proposed Project and would at minimum include: types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing cultural resources.

- **CM CUL-2: Flag and Avoid Known Resources.** Sites would be marked with flagging tape, safety fencing, and/or sign designating it as an “environmentally sensitive area” to ensure that PG&E construction crews and heavy equipment would not intrude on these sites during construction. At the discretion of the PG&E CRS, monitoring may be done in lieu of or in addition to flagging. If it is determined that the Proposed Project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the National Register of Historic Places (NRHP)/California Register of Historic Resources (CRHR) would be conducted. Should

the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level would be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.

- **CM CUL-3: Unanticipated Cultural Resources Discoveries**

  a. Unanticipated Cultural Resources.

  If unanticipated cultural resources are inadvertently discovered during site preparation or construction activities, work would stop in that area and within 50 feet of the find until CRS or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the CRS's approval. PG&E would implement the CRS's or their designee's recommendations for treatment of discovered cultural resources.

  b. Human Remains.

  In the unlikely event that human remains or suspected human remains are uncovered during pre-construction testing or during construction, all work within 50 feet of the discovery would be halted and redirected to another location. The find would be secured, and the CRS or designated representative would be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the CRS would determine whether the find is an archaeological deposit and whether paragraph (a) of this CM should apply. If the remains are human, the cultural resources specialist would immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the cultural resources specialist contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC, as required by PRC Section 5097.98, would determine and notify the Most Likely Descendant.

5.5.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The

potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to cultural resources associated with the potential modification of the Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would be unlikely to impact any new cultural resources not impacted by the Proposed Project. As such, the potential modification would not cause a substantial adverse change to a cultural resource, and no additional Mitigation Measures or APMs would be required. If modification of the proposed Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.6 ENERGY

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓
c) Add capacity for the purpose of serving a nonrenewable energy resource?				✓

This section describes the energy uses in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.6.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.6.1.1 Energy Resources and Facilities

The northern portion of the Proposed Project, including the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line, is located in the Montezuma Hills in the unincorporated community of Collinsville. The Montezuma Hills are within the Collinsville-Montezuma Hills Wind Resource Area (WRA) in Solano County, which is an area used primarily for energy facilities and farming

(Sacramento Municipal Utility District [SMUD] 2023b). There are numerous operating wind energy facilities in the Collinsville-Montezuma Hills WRA, including Shiloh I, II, III, and IV; EDF Renewable V; Labrisa; High Winds; Montezuma I and II; and Solano Wind Project Phases 1, 2, and 3 (SMUD 2019). The wind energy facilities in the closest proximity to the Proposed Project are those managed by SMUD. SMUD's Solano 4 Wind Project recently began construction in the Collinsville-Montezuma Hills WRA in April 2023 and is expected to generate 300 megawatts and 880 gigawatt hours per year (SMUD 2023b). The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection would be constructed in the vicinity of the Solano 4 Wind Project.

The LSPGC 230 kV Transmission Line would travel from the LSPGC Collinsville Substation (including approximately 1.5 miles of the LSPGC 230 kV Overhead Segment and approximately 4.5 miles of the LSPGC 230 kV Submarine Segment) and connect to PG&E's existing Pittsburg Substation located in the City of Pittsburg. PG&E's existing Pittsburg Substation would be modified to accommodate LSPGC's two new 230 kV circuits, Collinsville-Pittsburg #1 and #2 230 kV Transmission Lines. Approximately two new 230 kV riser structures would be constructed on the west side of the existing substation to terminate LSPGC's new 230 kV circuits. Adjacent to PG&E's existing Pittsburg Substation is the non-operational Pittsburg Power Plant that may be redeveloped (Center for Land Use Interpretation 2023).

5.6.1.2 Existing Energy Use

The Proposed Project area currently contains existing energy infrastructure. Located within an existing regional transmission system, the infrastructure includes PG&E's Vaca Dixon Substation, Pittsburg Substation, Tesla Substation, and the Vaca Dixon-Tesla 500 kV Transmission Line. This existing regional transmission system provides electricity to the northern Greater Bay Area. More information regarding existing infrastructure throughout this system is provided in Chapter 3 – Project Description.

5.6.1.2.1 Electricity Consumption

Table 5.6-1: Electricity Consumption within PG&E's Service Territory in 2022 shows electricity consumption by sector in the PG&E service area based on the latest available data from the California Energy Commission (CEC). As shown, PG&E delivered approximately 77.9 billion kilowatt-hours (kWh) in 2022.

According to the CEC, the State of California consumed 103.6 billion kWh for residential uses and 184.23 billion kWh for non-residential uses in 2022 (CEC 2023b). As summarized in Table 5.6-2: Electricity Consumption by County in 2022, approximately 3 billion kWh, 11 billion kWh, and 8 billion kWh of electricity were consumed in Solano, Sacramento, and Contra Costa counties, respectively, in 2022 (CEC 2022b).

Table 5.6-1: Electricity Consumption within PG&E's Service Territory in 2022

Use	Electricity Consumption (Millions of kWh)
Agriculture and Water Pump	7,506
Commercial Building	26,928
Commercial Other	4,055
Industry	10,091
Mining and Construction	1,814
Residential	27,209
Streetlight	280
Total	**77,886**

Source: CEC 2022b

Table 5.6-2: Electricity Consumption by County in 2022

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Solano County	1,150	2,106	3,256
Sacramento County	5,133	6,277	11,410
Contra Costa County	3,099	5,239	8,338

Source: CEC 2022a

5.6.1.2.2 Fuel Consumption

Approximately 90 percent of gasoline sold in the state is petroleum-based, with the remaining 10 percent being ethanol-based. Diesel fuel represents 17 percent of total fuel sales and is the second-largest category of transportation fuel used in California. Nearly all heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, construction equipment, and heavy-duty military vehicles have diesel engines (CEC 2023b). In 2022, estimated gasoline sales totaled 371 million gallons, and estimated diesel fuel sales totaled 85 million gallons (CEC 2023a).

Diesel and regular unleaded gasoline are utilized within Solano, Sacramento, and Contra Costa counties mainly for vehicular transportation, including passenger cars and heavy-duty diesel trucks. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles (CEC 2023b). Table 5.6-3: Gasoline and Diesel Fuel Sales by County in 2022 summarizes the gasoline and diesel fuel sales in Solano, Sacramento, and Contra Costa counties.

Table 5.6-3: Gasoline and Diesel Fuel Sales by County in 2022

County	Fuel Sales (Millions of Gallons)	
	Gasoline	Diesel
Solano County	190	32
Sacramento County	535	51
Contra Costa County	396	29

Source: CEC 2022b

5.6.2 Regulatory Setting

Federal, state, and local regulations were reviewed for relevancy to the Proposed Project.

5.6.2.1 Regulatory Setting

5.6.2.1.1 Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) (42 United States [U.S.] Code [U.S.C.] § 8201 et seq.) established energy-efficiency standards for consumer projects and includes a residential program for low-income weatherization assistance, grants, and loan guarantees for energy conservation in schools and hospitals, as well as energy efficiency standards for new construction. The NECPA also established fuel economy standards for on-road motor vehicles in the U.S. The National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (DOT), is responsible for establishing additional vehicle standards and revising existing standards under the NECPA. The U.S. DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 2005

The Energy Policy Act of 2005 (42 U.S.C. § 13201 et seq.) sets equipment energy efficiency standards, seeks to reduce reliance on nonrenewable energy resources, and provides incentives to reduce current demand on these resources, including establishing programs to improve the reliability and efficiency of distributed energy resources and systems by integrating advanced energy technologies with grid connectivity.

Energy and Independence Security Act of 2007

The Energy and Independence Security Act of 2007 (42 U.S.C. § 17001) sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use by methods including setting automobile efficiency standards and increases in alternative fuel use. This act also amends portions of the NECPA, as described previously.

5.6.2.1.2 State

Warren-Alquist Act

The 1975 Warren-Alquist Act (Public Resources Code [PRC] § 25000 et seq.) established the California Energy Resources Conservation and Development Commission, now known as the CEC. The CEC is California's leading policy and planning agency, responsible for establishing rules and regulations for multiple facets of the energy industry. The Warren-Alquist Act also established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy.

State of California Integrated Energy Policy

PRC Section 25301(a) requires the CEC to develop an Integrated Energy Policy Report (IEPR) at least every 2 years for electricity, natural gas, and transportation fuels. The current IEPR (2021 edition, updated in 2022) calls for the state to assist in the decarbonization of buildings and the agricultural sector, ensuring electricity reliability in a changing climate, decarbonizing the state's gas systems, and improving electricity demand forecasting.

Senate Bill 100

Senate Bill (SB) 100, signed into law in September 2018, amends the California Renewables Portfolio Standard (RPS) Program. The program requires the California Public Utilities Commission (CPUC) to establish an RPS requiring all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016; 33 percent by December 31, 2020; 40 percent by December 31, 2024; 50 percent by December 31, 2026; and 60 percent by December 31, 2030. The program additionally requires each local publicly owned electric utility to procure a minimum quantity of electricity products from eligible renewable energy resources to achieve the procurement requirements established by the program.

In September 2021, a report was authored in consultation with the CEC, CPUC, California Independent System Operator (CAISO), and California Air Resources Board (CARB) to address Governor Gavin Newsom's Proclamation of a State of Emergency regarding the availability of electricity during extreme heat events and to accelerate the state's transition to clean, carbon-free electricity (CARB 2021). The report discusses ongoing challenges to bring clean energy resources online, actions taken by the agencies and CAISO to address system reliability issues and accelerate the state's transition to a clean energy system, and includes recommendations for priority actions to address some of these challenges.

Senate Bill 1020

SB 1020, signed into law in 2022, revises the current state policy outlined in SB 100 to require that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035; 95 percent by December 31, 2040; 100 percent by December 31, 2045; and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

California Advanced Clean Cars Program/Zero-Emission Vehicle Program

In January 2012, CARB approved a new emissions-control program for vehicle models from 2017 through 2025. The program combines emissions controls with requirements for greater numbers of zero-emission vehicles (ZEVs) into a package of standards called the Advanced Clean Cars Program. The components of the Advanced Clean Cars Program include the Low-Emission Vehicle regulations that reduce criteria pollutants and greenhouse gas (GHG) emissions from light- and medium-duty vehicles, and the ZEV regulations that require manufacturers to produce an increasing number of pure ZEVs (e.g., battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 models. In March 2017, CARB voted unanimously to continue with the vehicle GHG emission standards and the ZEV program for cars and light-duty trucks sold in California after 2025. Each year, the agency updates its action plan and produces an annual report. The most recent 2023 Action Plan focuses on near-term concrete actions, including regulations, incentives, ZEV market development, mobility and technology advancement, external market development, and consumer and worker awareness (CARB 2023a).

CARB Heavy-Duty Regulations

CARB's Truck and Bus Regulation requires diesel trucks that operate in California to be upgraded to reduce emissions. It established a final deadline of January 1, 2023, to upgrade all trucks with 2010 model engines or equivalent. In 2004, CARB adopted a fourth tier of increasingly stringent advanced after-treatment for new off-road compression-ignition engines, including those found in construction equipment. These Tier 4 standards were phased in across product lines from 2008 through 2015. In 2007, CARB first approved the Off-Road Regulation that requires off-road fleets to reduce their emissions by retiring, replacing, or repowering older engines.

As heavy-duty on-road vehicles are such a significant source of pollutants, the Truck and Bus Regulation is one of the most far-reaching and important tools to reduce smog-forming and toxic emissions and protect public health in disadvantaged communities. It is a key element in CARB's Diesel Risk reduction plan and the State Implementation Plan, both of which are designed to provide clean air for Californians by helping to meet state and federal health standards. Starting January 1, 2020, SB 1 only allowed vehicles compliant with this regulation to be registered by the California Department of Motor Vehicles (CARB 2023b).

5.6.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order (G.O.) 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento

County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Resources chapter of the Solano County General Plan outlines energy policies that seek to conserve energy, reduce energy demand, and enable the production of energy from renewable sources. The Resources chapter encourages siting options for energy production facilities that minimize adverse impacts on the environment and protect scenic resources. The following policy from the Resources chapter is relevant to the Proposed Project:

- RS.P-58. Require the siting of energy facilities in a manner compatible with surrounding land uses and in a manner that will protect scenic resources.

Sacramento County General Plan

The Energy Element of the Sacramento County General Plan describes goals, policies, and implementation measures to reduce per capita energy consumption, grow the share of renewable sources of energy, and distribute future growth in electrical energy consumption throughout the day and year. The Energy Element does not contain any energy policies relevant to the Proposed Project.

Contra Costa County General Plan

The Conservation Element and Land Use Element of the Contra Costa County General Plan outline goals of energy conservation and policies for wind energy and commercial-scale solar development. The Conservation and Land Use elements do not contain any energy policies relevant to the Proposed Project.

City of Pittsburg General Plan

The City of Pittsburg General Plan does not contain a detailed discussion of current energy use or proposed energy goals and programs. As such, the City of Pittsburg General Plan does not contain any energy policies relevant to the Proposed Project.

5.6.3 Impact Questions

5.6.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For energy, the CEQA Environmental Checklist asks if the Proposed Project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

5.6.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA impact questions are required for energy. Would the Proposed Project:

- Add capacity for the purpose of serving a nonrenewable energy resource?

5.6.4 Impact Analysis

5.6.4.1 Energy Impact Analysis

5.6.4.1.1 Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

LSPGC and PG&E Components

Less-than-Significant Impact. Construction activities associated with the LSPGC and PG&E Proposed Project components would require the short-term consumption of fossil fuel resources (e.g., diesel fuel and gasoline) to power construction equipment, motor vehicles, and helicopters. Proposed Project construction activities would not require the consumption of natural gas. Additionally, construction would utilize electrical energy from the existing distribution system to power construction trailers, lighting, and other equipment.

Short-term fuel consumption from equipment, motor vehicle, and helicopter use during construction would be required to construct the LSPGC and PG&E Proposed Project components. Using the estimated GHG emissions, discussed further in Section 5.8 Greenhouse Gas Emissions and Attachment 5.3-A: Air Quality Emissions Calculations, the volume of diesel and gasoline fuels that are anticipated to be utilized during construction were calculated. These calculations are shown in Attachment 5.6-A: Construction Fuel Consumption. Construction of the LSPGC and PG&E Proposed Project components is estimated to consume a total of approximately 195,088 gallons of gasoline, 672,338 gallons of diesel fuel, and 16,428 gallons of jet fuel.

An existing overhead distribution line near the Proposed Project would be tapped for construction power and extended to the proposed LSPGC Collinsville Substation site (i.e., the proposed PG&E 12 kV Distribution Line). The distribution line extension would be installed by PG&E on wood poles. Temporary generators would be used as a contingency if distribution power is not available in a timely manner prior to construction. Temporary generators would also be used at staging areas where power is needed during construction. This temporary power, provided by PG&E, would be representative of PG&E's current energy supply portfolio. Based on the requirements of SB 100 (CARB 2021), utility providers are required to have 60 percent of their energy portfolio supplied by renewable energy sources by 2030. As of 2020, PG&E had achieved an approximately 35 percent renewable portfolio (PG&E 2021). The ratio of renewable energy would be expected to increase each year until reaching 60 percent by 2030 as required by California's RPS.

Proposed Project construction activities would represent less than 0.01 percent of total diesel and gasoline consumption in the three counties crossed by the LSPGC and PG&E Proposed Project components. In addition, construction would be short term and temporary. The use of fuel would be necessary, efficient, and conservative in nature. As a result, the impact would be less than significant.

Operations and Maintenance

LSPGC and PG&E Components

Less-than-Significant Impact. Maintenance, including inspections of the LSPGC and PG&E Proposed Project components, would require the use of fossil fuels (e.g., diesel, gasoline) for motor vehicle trips and occasional use of off-road equipment. Use of these fuels would be necessary for normal O&M activities, including periodic inspections, equipment testing, and repairs. Additionally, the same distribution line providing power during construction for the proposed LSPGC Collinsville Substation would also provide power during O&M. The proposed substation would be designed with an interconnection point for a mobile generator. This generator would be kept off site and would only be utilized if necessary (e.g., in a power outage) to temporarily provide power for basic functions. No or limited new full-time staffing would be required for regular preventative maintenance of the LSPGC Proposed Project components. The maintenance of the PG&E Proposed Project components would be incorporated into pre-existing maintenance programs. As a result, substantial population growth would not occur and impacts would be less than significant.

5.6.4.1.2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction

LSPGC and PG&E Components

No Impact. The Proposed Project would comply with the state RPS program. The CPUC implements and administers RPS compliance rules for California's retail sellers of electricity, which include large and small investor-owned utilities, electric service providers and community choice aggregators. The CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources and adopting regulations for the enforcement of RPS procurement requirements for public-owned utilities (CPUC 2023).

During construction of the LSPGC and PG&E Proposed Project components, a temporary increase in demand for electricity resources and fuel resources for vehicles and construction equipment would occur; however, this temporary increase would not conflict with the long-term goals of the RPS Program because none of the program's requirements are applicable to the Proposed Project. Therefore, there would be no impact.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. Operation of the LSPGC and PG&E Proposed Project components would also require minor amounts of electricity and fuel resources. However, the Proposed Project would increase the efficiency of the existing transmission network and would introduce new energy

demands and increase transmission capacity. As previously described, the Proposed Project would allow for more efficient transmission and use of energy already being generated within the PG&E system, including increasing renewable sources. The Proposed Project would improve California's ability to supply renewable energy to end-use customers and to achieve statewide renewable energy goals—specifically increased production of renewable energy within the greater PG&E service territory. Additionally, the Proposed Project would not prevent renewable energy sources from being used as a source of electricity in the future. Therefore, the Proposed Project would not conflict with the implementation of the state RPS program, and there would be no impact.

5.6.4.1.3 Would the project add capacity for the purpose of serving a nonrenewable energy resource?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The Proposed Project would be consistent with the guidelines of the RPS Program to reach RPS targets for renewable resources. The Proposed Project would be implemented to meet existing and future system reliability and voltage support demands; as such, it would increase capability of the transmission or distribution system and match the current demand of electricity within its distribution areas. Therefore, the Proposed Project would not add capacity that would result in an increase in energy from nonrenewable sources, such as coal and natural gas.

The Proposed Project, including the direct and indirect use of energy during construction and O&M, would upgrade facilities that would improve California's ability to supply renewable energy to end-use customers and to achieve statewide renewable energy goals. Thus, the Proposed Project would not add capacity for the purpose of serving a nonrenewable energy resource, and there would be no impact.

5.6.4.2 Nonrenewable Energy

While the Proposed Project would increase the transmission capability of the surrounding system, it is not expected to increase the capacity of the existing facilities nor is it being proposed to support nonrenewable energy projects. The main components of the Proposed Project are a new 500/230 kV substation, an approximately 6-mile-long double-circuit 230 kV transmission line, and associated interconnections. CAISO determined these facilities are necessary to address multiple overloads on the 230 kV corridor between PG&E's Contra Costa and Newark substations under normal (N-0), N-1, and N-2 contingency conditions and provide additional supply from the 500 kV system into the northern Greater Bay Area to increase reliability to the area and advance additional renewable generation in the northern area (CAISO 2022a). Alternatively, the Proposed Project would facilitate the future connection of renewable energy projects.

5.6.4.3 Fuels and Energy Use

Attachment 5.6-A: Construction Fuel Consumption shows the volume of fuel (i.e., gasoline, diesel, and jet) that would be used during construction of the Proposed Project.

5.6.4.3.1 Energy Conservation Equipment and Design Features

The Proposed Project would not include equipment or design features with a primary or sole purpose of energy conservation.

5.6.4.3.2 Energy Supplies That Would Serve the Proposed Project

Proposed Project construction would not require any new energy supplies. Power would be supplied to the substation site from existing local distribution lines. If local distribution lines are not available, temporary power may be provided from a diesel-powered generator. All other energy required for the construction phase would be obtained from existing energy purveyors.

The Proposed Project would result in an incremental increase in diesel fuel for vehicles conducting routine O&M work at the new transmission lines and substation. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. Capable energy supplies that would serve the Proposed Project are pre-existing; therefore, there is no requirement for energy to be sourced from a new nonrenewable or renewable. Therefore, there would be no impact to the Proposed Project area as a result of any new energy supplies.

5.6.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for energy.

5.6.6 Applicant-Proposed Measures

5.6.6.1 Energy Applicant-Proposed Measures

Impacts to energy were determined to be less than significant; therefore, no energy-specific applicant-proposed measures have been developed for the LSPGC Proposed Project components.

5.6.7 PG&E Construction Measures

5.6.7.1 Energy PG&E Construction Measures

Impacts to energy were determined to be less than significant; therefore, no energy-specific Construction Measures would be implemented for the PG&E Proposed Project components.

5.6.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, CAISO requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to energy resources associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not create a demand for energy resources that could not be

met by existing system capacities. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.7 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			✓	
ii) Strong seismic ground shaking?			✓	
iii) Seismic-related ground failure, including liquefaction?			✓	
iv) Landslides?			✓	
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	

This section describes the geological risks, soils, and paleontological resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.7.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.7.1.1 Regional and Local Geologic Setting

The Proposed Project is located near the border of the Coast Ranges and Great Valley geomorphic provinces. The Coast Ranges include north-northwest-trending mountain ranges and valleys formed from uplift along the active Pacific plate-North American plate boundary system. The basement rocks in the Coast Ranges consist of the Franciscan Complex and the Salinian Block plutonic igneous basement rocks. The metamorphic and marine rocks of the Franciscan Complex were primarily derived from erosion of a volcanic arc, subsequent deposition in a deep marine environment, and later accretion onto the continental margin of North America during the subduction of the Farallon Plate. The topography and geology of the region were highly influenced by the development of the San Andreas Fault Zone on the Pacific plate-North American plate boundary beginning at least 30 million years ago (Ma).

The Great Valley is an approximately 50-mile-wide by 400-mile-long alluvial plain in the central part of California that has accumulated sediment since the Jurassic Period (201 to 145 Ma). The Great Valley is influenced by two rivers, with the northern portion of the valley—the Sacramento Valley—being drained by the Sacramento River and the southern portion of the valley—the San Joaquin Valley—drained by the San Joaquin River. The depth of the sedimentary deposits, combined with associated regional tectonic forces, have produced extensive oil fields particularly in the southernmost San Joaquin Valley and along anticlinal uplifts on its southwestern margin.

Locally, the Proposed Project area crosses the Delta, which consists of estuarine embayments that often act as sediment "traps," in this case resulting in accumulation of sediment in and near the river during the Pleistocene Epoch (2.58 Ma to 11,700 years ago) and Holocene Epoch (11,700 years ago to present). The northern portion of the Proposed Project area near the

proposed LSPGC Collinsville Substation is in the southern edge of the Montezuma Hills, which is the surficial result of a local, deep, asymmetric, south-plunging graben of underlying sediment from the Paleogene Period (66 to23 Ma) (Chronicle Heritage 2024).

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be on undulating terrain with slopes ranging between 2 and 30 percent. The proposed LSPGC 230 kV Submarine Segment would be constructed within and buried beneath the Delta, and the proposed LSPGC 230 kV Underground Segment, LSPGC Telecommunications Line, and PG&E's existing Pittsburg Substation would be on flat terrain.

5.7.1.2 Seismic Hazards

5.7.1.2.1 Fault Zones

All known faults identified within 10 miles of the Proposed Project, which are depicted in Figure 5.7-1: Faults Located within 10 Miles of the Proposed Project, are considered Quaternary faults. Quaternary faults are faults that have been recognized at the surface and have moved in the past 1.6 million years (United States [U.S.] Geological Survey [USGS] 2023a). Table 5.7-1: Faults Located within 10 Miles of the Proposed Project provides details on each faults' type, section, length, maximum moment magnitude, age of last known slip, slip rate, approximate distance to the Proposed Project, and nearest Proposed Project components.

The proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line would cross the Rio Vista fault, and PG&E's existing Pittsburg Substation is located on the Rio Vista fault. The Rio Vista fault is approximately 53 kilometers long, extending from the City of Fairfield to the City of Pittsburg and traversing through the Suisun Marsh. The USGS does not have substantial information regarding the Rio Vista fault; however, it is considered a Quaternary fault with the most recent movement less than 130 thousand years ago (USGS 2022).

Based on the California Department of Conservation's (DOC's) Map Sheet 48: Earthquake Shaking Potential for California, the Proposed Project is within a region that will experience lower levels of shaking during earthquakes in comparison to other regions of California (California DOC 2016).

5.7.1.2.2 Landslides

A landslide is the movement of a mass of rock, debris, or earth down a slope and can be caused by rainfall, snowmelt, changes in water level, stream erosion, changes in groundwater, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors (USGS 2023b). According to the California Geologic Survey (CGS), no portion of the Proposed Project would be located in a landslide zone (CGS 2022). The Solano County General Plan's Public Health and Safety Element does not identify the Collinsville area as susceptible to landslides (Solano County 2015). Likewise, the Contra Costa County Hazard Mitigation Plan does not consider the City of Pittsburg susceptible to landslides (Contra Costa County 2018). In addition, the Proposed Project does not cross any areas with a record of major historical landslides (California DOC 2023).

Table 5.7-1: Faults Located within 10 Miles of the Proposed Project

Fault Name	Fault Type	Fault Section	Fault Length (kilometers)	Maximum Moment Magnitude	Age of Last Known Slip	Slip Rate (mm/yr)	Approximate Distance to Proposed Project Component (miles)	Nearest Proposed Project Component
Midland Fault	Reverse, right lateral	Information not available (INA)	88	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	10	PG&E 500 kV Interconnection
Rio Vista Fault	Fault, concealed	INA	53	INA	Late Quaternary (less than 130,000 years)	INA	0 (crossed)	LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, LSPGC Telecommunications Line, PG&E's existing Pittsburg Substation
Davis Fault	Fault, certain	N/A	INA	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	6	LSPGC Telecommunications Line
Greenville Fault	Right lateral, strike-slip	Clayton Section	16	6.6	Latest Quaternary (less than 15,000 years)	0.2-1.0	5	LSPGC Telecommunications Line
Unnamed Fault	Fault, certain	INA	INA	INA	Undifferentiated Quaternary (less than 1.6 million years)	INA	6	LSPGC 230 kV Underground Segment
Unnamed Fault	Fault, certain	INA	INA	INA	Late Quaternary (less than 130,000 years)	INA	6	LSPGC 230 kV Underground Segment
Concord Fault	Right lateral, strike-slip	Concord Section	4	6.2	Latest Quaternary (less than 15,000 years)	1.0-5.0	9	LSPGC 230 kV Underground Segment

Source: USGS 2022; California DOC 2002

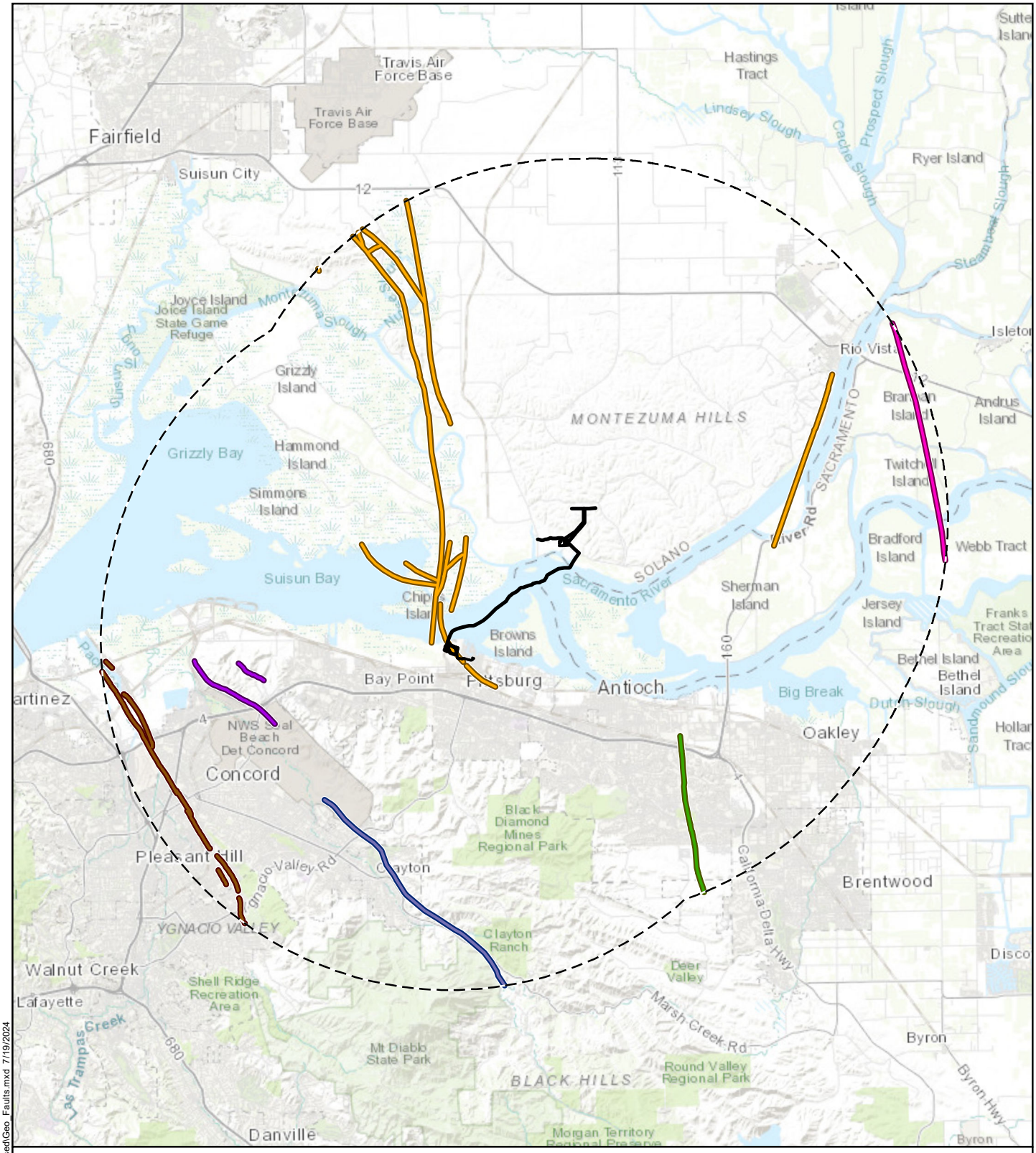

Figure 5.7-1: Faults Located within 10 Miles of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Concord
- Davis
- Greenville
- Midland
- Rio Vista
- Unnamed
- Proposed Project
- 10-Mile Buffer

1:250,000

0 2 4 Miles

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5.7.1.2.3 Liquefaction

Liquefaction occurs when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking (USGS 2023c). Liquefaction causes the ground to lose its stability and move or collapse, which can cause severe damage to buildings and structures and pose a threat to occupants. Figure 5.7-2: Liquefaction Areas within 1 Mile of the Proposed Project classifies the liquefaction potential within 1 mile of the Proposed Project as very high, high, medium, low, or very low.

The Solano County General Plan's Public Health and Safety Element identifies areas of high liquefaction potential. Approximately 0.4 mile of the proposed LSPGC 230 kV Overhead Segment in the southernmost Collinsville area would be located on land with high liquefaction potential. The proposed LSPGC Collinsville Substation and PG&E 500 kV Interconnection would be on land with very low liquefaction potential, but would be adjacent to land with high liquefaction potential. Areas of high and very low liquefaction would be crossed by the proposed PG&E 12 kV Distribution Line. Although the Solano County General Plan's Public Health and Safety Element identifies the areas where the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be located as having liquefaction potential, the CGS does not designate these areas as having the potential for liquefaction (CGS 2022).

The Contra Costa County Hazard Mitigation Plan identifies the lands where the proposed LSPGC 230 kV Underground Segment would be sited as having very high liquefaction potential. In addition, PG&E's existing Pittsburg Substation is on land with very high liquefaction potential. The CGS also maps the area of the proposed LSPGC 230 kV Underground Segment, proposed LSPGC Telecommunications Line, and PG&E's existing Pittsburg Substation as a liquefaction zone (CGS 2022). Therefore, the proposed LSPGC 230 kV Underground Segment and LSPGC Telecommunications Line would be in an area that may be subject to liquefaction, and PG&E's existing Pittsburg Substation is in an area that may be subject to liquefaction.

5.7.1.2.4 Subsidence

Land subsidence is the sinking or collapsing of earth's surface that may occur naturally or result from excessive groundwater pumping, drainage of organic soils, or underground mining (USGS 2019). Seismic activity increases the potential for land subsidence to occur.

The Delta has a history of land subsidence resulting from peat loss; therefore, land subsidence has been recorded within 10 miles of the Proposed Project. As depicted in Figure 5.7-3: Subsidence within 1 Mile of the Proposed Project, no areas of subsidence have been documented within 1 mile of the Proposed Project; however, the proposed PG&E 500 kV Interconnection would be approximately 2.5 miles west of a known subsidence area in the Montezuma Hills. Despite being within 2.5 miles of a known subsidence area, no portion of the Proposed Project would cross an area with a history of subsidence as identified by the USGS (USGS 2023d).

5.7.1.3 Geologic Units

As described in Attachment 5.7-A: Paleontological Resources Memorandum, the geology of the Proposed Project area is mapped by Graymer et al. (2002) at a scale of 1:100,000. The following six distinct geologic units underlay the Proposed Project:

- Montezuma Formation (Qmz) (Early Pleistocene)
- Alluvial Fan Deposits (Qpf) (Late Pleistocene)
- Delta Mud Deposits (Qhdm) (Holocene)
- Bay Mud Deposits (Qhbm) (Holocene)
- Alluvial Fan Deposits (Qhf) (Holocene)
- Artificial Fill (af) (Holocene)

As depicted in Figure 5.7-4: Geologic Units Crossed by the Proposed Project the proposed LSPGC Collinsville Substation, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line are primarily underlain by the Montezuma Formation (Qmz). The proposed LSPGC 230 kV Overhead Segment is underlain by both the Montezuma Formation (Qmz) and Delta Mud Deposits (Qhdm). The proposed LSPGC 230 kV Underground Segment and PG&E's existing Pittsburg Substation are underlain by Artificial Fill (af). Both Alluvial Fan Deposits (Qpf and Qhf) have the potential to occur beneath the Artificial Fill (af). The sedimentary deposits underlying the area of the proposed LSPGC 230 kV Submarine Segment are not mapped. The proposed LSPGC Telecommunications Line is underlain by Alluvial Fan Deposits (Qpf). Issues related to landslide risk, soil instability, and seismic hazards are discussed in Sections 5.7.1.2 Seismic Hazards and 5.7.1.4 Soils. According to the CGS, no portion of the Proposed Project would be located on a geologic unit prone to landslides (CGS 2022). Section 5.7.1.5 Paleontological Report provides descriptions of the geologic units in the Proposed Project area.

5.7.1.4 Soils

The soil types occurring in the Proposed Project area, as mapped by the National Resources Conservation Service (NRCS) and depicted in the Web Soil Survey (NRCS 2019), are listed in Table 5.7-2: Mapped Soil Units and Soil Properties Crossed by the Proposed Project. The table also documents selected soil properties, including hydrologic group, wind erodibility, and slope percent. As depicted in Figure 5.7-5: Soils Crossed by the Proposed Project, the proposed LSPGC Collinsville Substation would be primarily on Diablo-Ayar clays and the proposed LSPGC 230 kV Overhead Segment would be on Diablo-Ayar clays, Valdez silty clay loam, and Valdez silt loam. The proposed LSPGC 230 kV Underground Segment would be on Clear Lake clay, and PG&E's existing Pittsburg Substation is on Clear Lake clay. The proposed LSPGC Telecommunications Line would be on Clear Lake clay, Omni Silt clay, and Rincon clay loam. The proposed PG&E 500 kV Interconnection would be on Diablo-Ayar clays and Diablo Ayer clays, eroded. The proposed PG&E 12 kV Distribution Line would be on Diablo-Ayar clays and Tamba mucky clay.

5.7.1.4.1 Hydrologic Group

The hydrologic group classification is a measure of runoff potential determined by a soils infiltration rate, which is the rate at which water enters the soil at the surface (U.S. Department of Agriculture [USDA] 2002a). Soils are classified into Group A, B, C, or D and are summarized in Table 5.7-3: Hydrologic Groups.

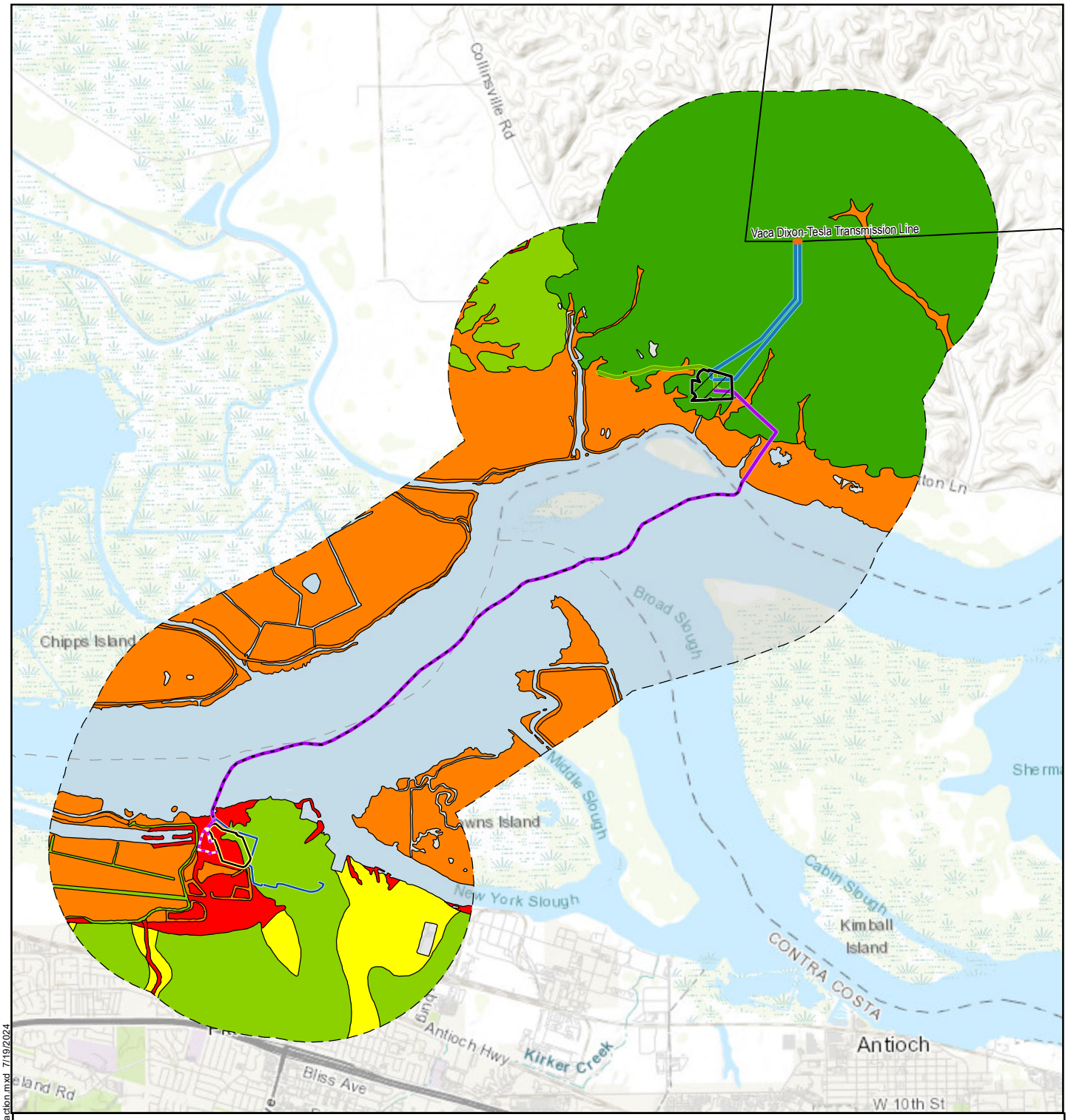

Figure 5.7-2: Liquefaction Areas within 1 Mile of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line

- Very High
- High
- Medium
- Low
- Very Low

- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

1:60,000

0 4,000 8,000 Feet

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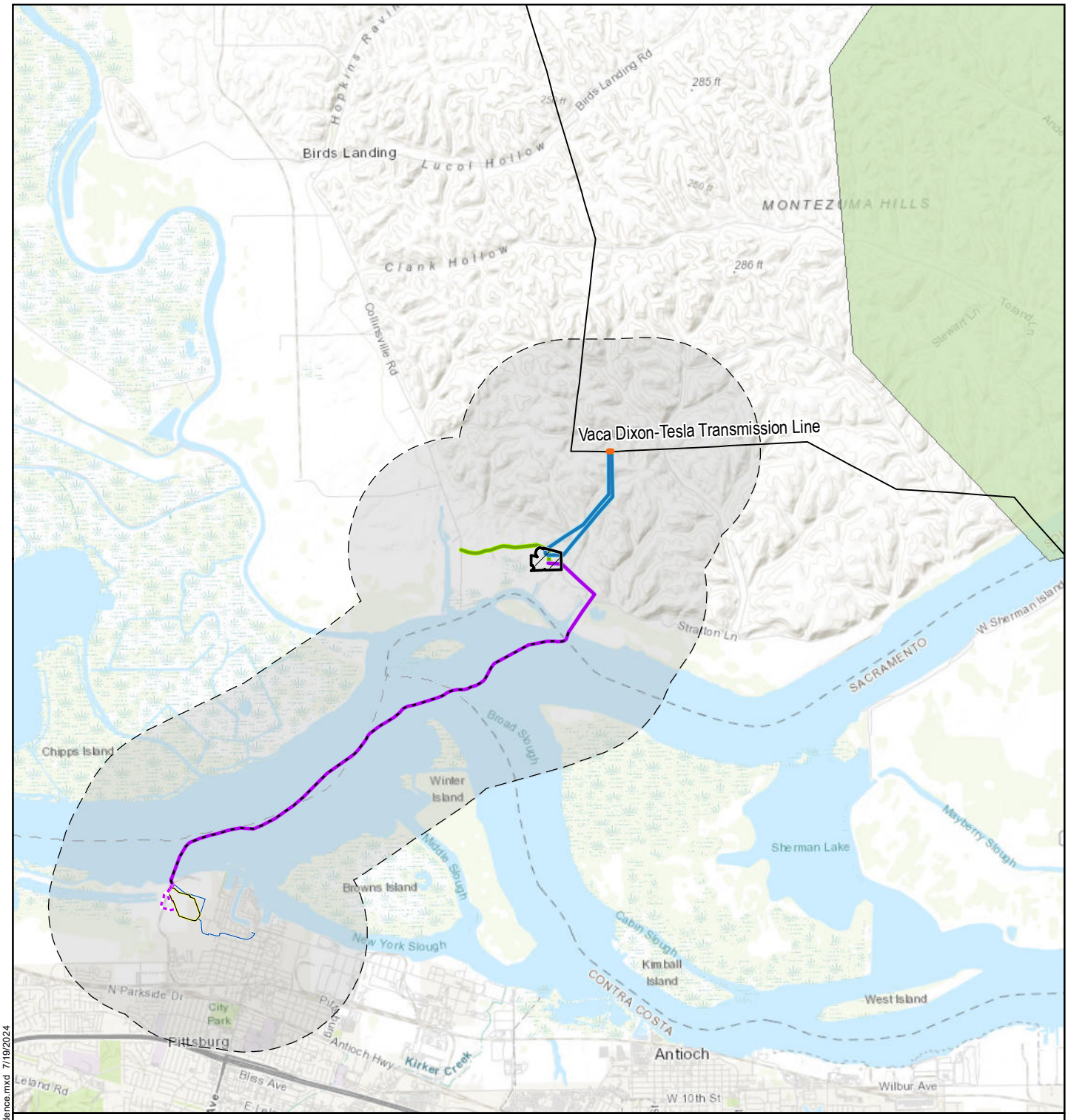

Figure 5.7-3: Subsidence within 1 Mile of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- Subsidence Area
- 1-Mile Buffer

1:80,000

0 1 2 Miles

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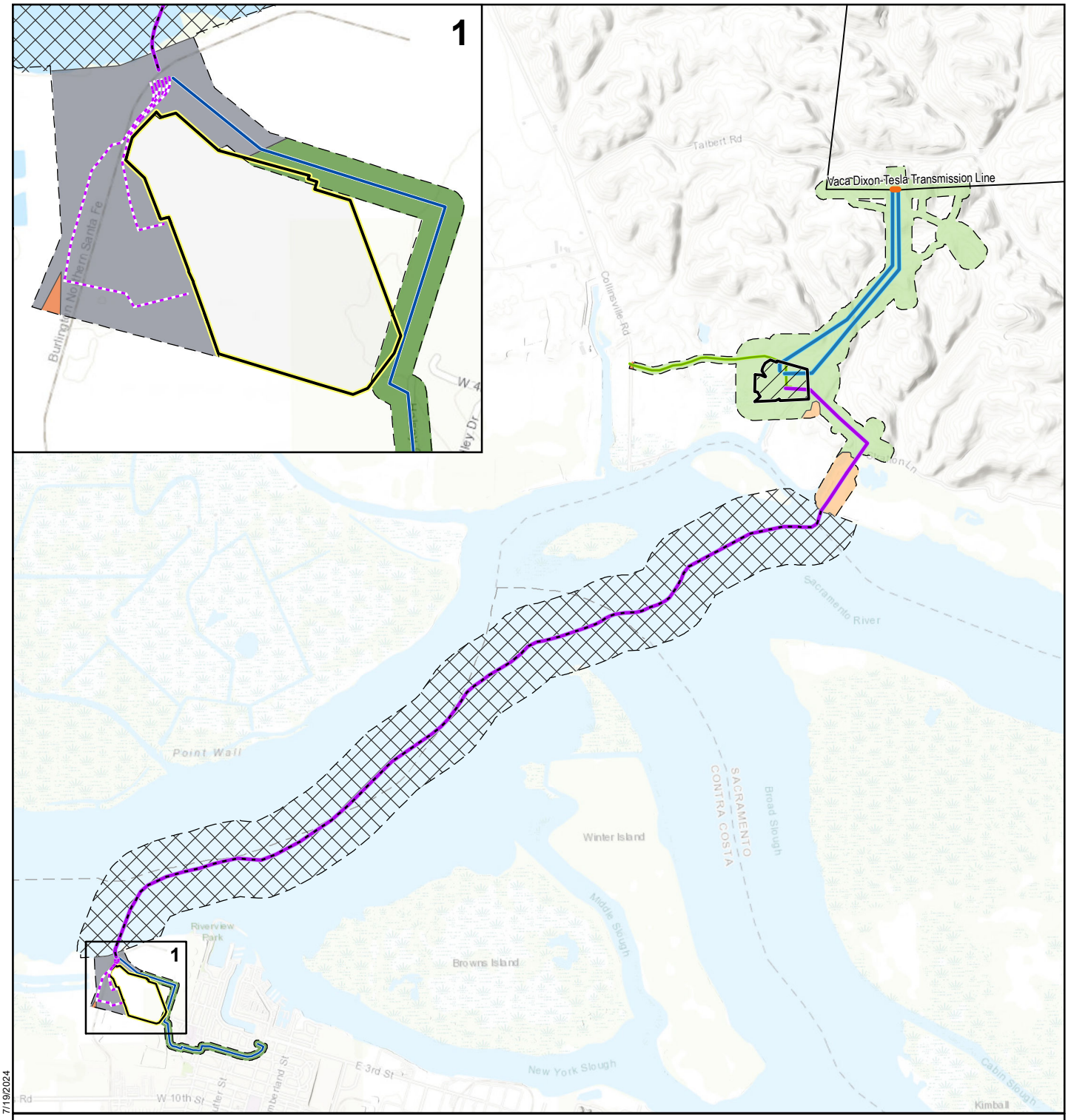

Figure 5.7-4: Geologic Units Crossed by the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Bay mud deposits (Holocene) (Qhbm)
- Delta mud deposits (Holocene) (Qhdm)
- Montezuma Formation (early Pleistocene) (Qmz)
- Alluvial fan deposits (late Pleistocene) (Qpf)
- Artificial fill (af)
- Unmapped sedimentary deposits of the Suisun Bay and the Sacramento River Delta
- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation

1:45,000

0 3,000 6,000 Feet

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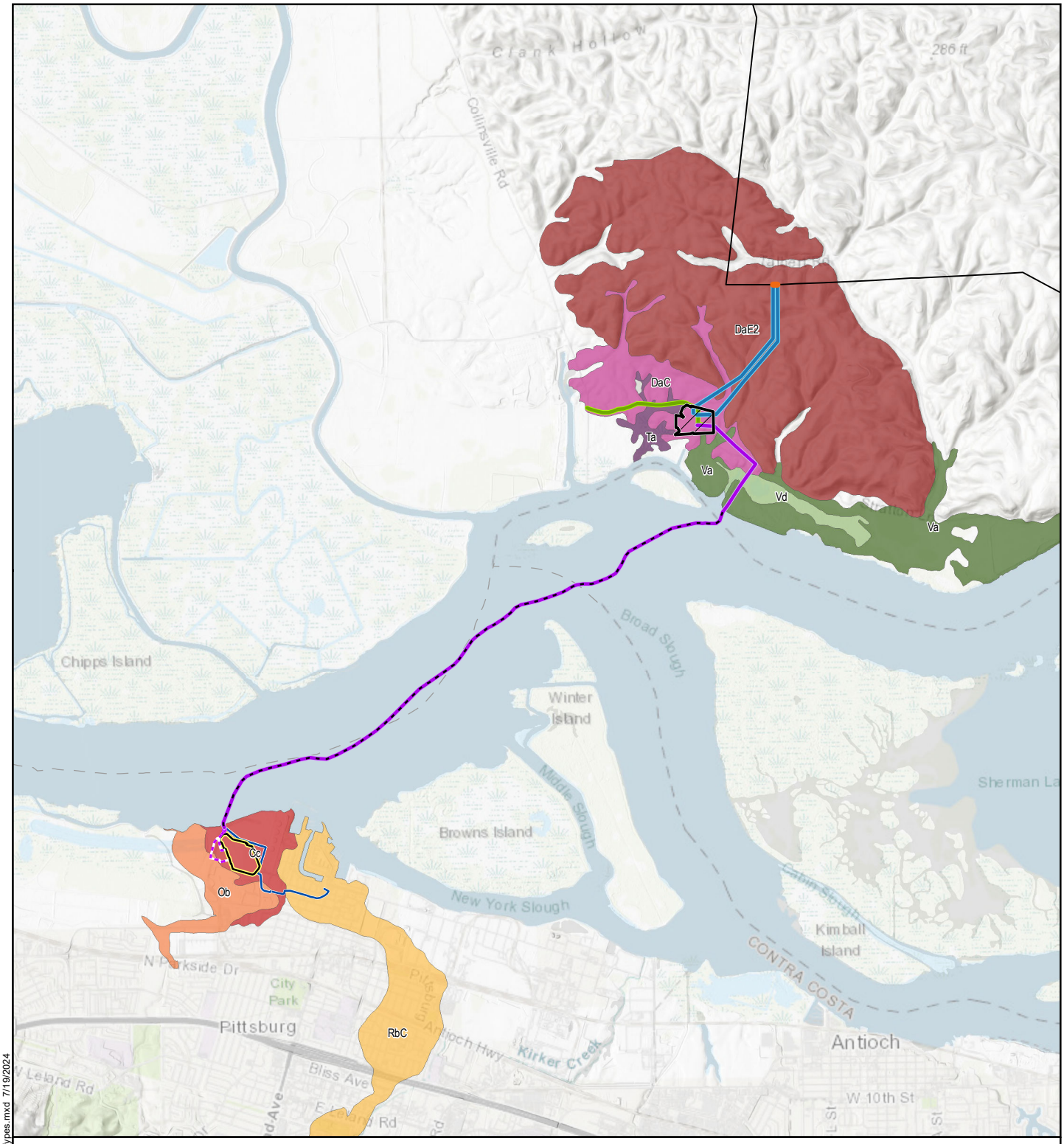

Figure 5.7-5: Soils Crossed by the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Ta
- Vd
- Cc
- Ob
- RbC
- Va
- DaE2
- DaC

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line

- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation

1:63,389

0 4,000 8,000 Feet

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Table 5.7-2: Mapped Soil Units and Soil Properties Crossed by the Proposed Project

USDA Map Unit Symbol[1]	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Index (Y/Ac/Yr)[2]	Soil Erodibility Factor (K)[3]	Slope Percent	Stability Concerns[4]
LSPGC Collinsville Substation							
DaC	h9l4	Diablo-Ayar clays	C	86	0.24	2 to 9	Moderate Erosion Potential, Moderate Runoff Potential
LSPGC 230 kV Overhead Segment							
DaC	h9l4	Diablo-Ayar clays	C	86	0.24	2 to 9	Moderate Erosion Potential, Moderate Runoff Potential
Vd	2xlcq	Valdez silty clay loam	C/D	86	0.47	0 to 2	High Liquefaction Potential, Moderate to High Erosion Potential, Moderate to High Runoff Potential
Va	2x4kz	Valdez silt loam	C	86	0.53	0 to 2	High Liquefaction Potential, Moderate to High Erosion Potential, Moderate Runoff Potential
LSPGC 230 kV Submarine Segment							
W	INA	Water	INA	INA	INA	INA	Scour Potential
LSPGC 230 kV Underground Segment							
Cc	2vbsq	Clear Lake clay	C	86	0.25	0 to 15	High Liquefaction Potential, Moderate Erosion Potential, Moderate Runoff Potential
PG&E 500 kV Interconnection							
DaC	h9l4	Diablo-Ayar clays	C	86	0.24	2 to 9	Moderate Erosion Potential, Moderate Runoff Potential
DaE2	H9l5	Diablo-Ayar clays, eroded	C	86	0.24	9 to 30	Moderate Erosion Potential, Moderate Runoff Potential

USDA Map Unit Symbol[1]	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Index (Y/Ac/Yr)[2]	Soil Erodibility Factor (K)[3]	Slope Percent	Stability Concerns[4]
Existing PG&E Pittsburg Substation							
Cc	2vbsq	Clear Lake clay	C	86	0.25	0 to 15	High Liquefaction Potential, Moderate Erosion Potential, Moderate Runoff Potential
PG&E 12 kV Distribution Line							
DaC	h9l4	Diablo-Ayar clays	C	86	0.24	2 to 9	Moderate Erosion Potential, Moderate Runoff Potential
Ta	2x4kn	Tamba mucky clay	C	86	0.16	0 to 2	High Liquefaction Potential, Moderate Runoff Potential
LSPGC Telecommunications Line							
Cc	2vbsq	Clear Lake clay	C	86	0.25	0 to 15	High Liquefaction Potential, Moderate Erosion Potential, Moderate Runoff Potential
Ob	h9b7	Omni Silt clay	D	86	0.25	0 to 2	Low Liquefaction Potential, Moderate Erosion Potential, High Runoff Potential
RbC	2tb8p	Rincon clay loam	C	86	0.25	2 to 9	Low Liquefaction Potential, Moderate Erosion Potential, Moderate Runoff Potential

Sources: USDA 2002a, 2002b, 2019; ESRI 2023

[1] USDA map unit symbols are shown in Figure 5.7-5: Soils Crossed by the Proposed Project.

[2] Y/Ac/Yr = mass in tons of soil moved per unit area (acre) per year.

[3] The soil erodibility factor (K) is discussed further in Section 5.7.1.4.2 Soil Erodibility.

[4] The stability concerns are determined by liquefaction, erosion, subsidence, and runoff potential.

Table 5.7-3: Hydrologic Groups

Hydrologic Group	Infiltration Rates	Description
Group A	High	These soils have the lowest runoff potentials and typically consist of deep, well-drained to excessively drained sands or gravels.
Group B	Moderate	These soils consist of deep, moderately well or well-drained soils with moderately fine to moderately coarse textures.
Group C	Slow	These soils consist of soils with a layer that impedes the downward movement of water, or soils with moderately fine or fine textures.
Group D	Very Slow	These soils consist of clayey soils with high swelling potential, soils with a high permanent water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious materials.

Source: USDA 2002a

The hydrologic group, along with other soil factors, can give an indication or estimation of the erosion potential. Table 5.7-2: Mapped Soil Units and Soil Properties Crossed by the Proposed Project identifies the hydrologic group for each soil group that would be crossed by the Proposed Project.

5.7.1.4.2 Soil Erodibility

As defined by the State Water Resources Control Board (SWRCB), the soil-erodibility factor (K) represents the following:

- The susceptibility of soil or surface material to erosion;
- The transportability of the sediment; and
- The amount and rate of runoff given a particular rainfall input, as measured under a standard condition (SWRCB 2023).

The higher the K value, the more susceptible a soil type is to erosion. Diablo-Ayar clays have K values of 0.24 and can be considered moderately susceptible to erosion. Clear Lake clay, Omni Silt clay, and Rincon clay loam soils have K values of 0.25 and can be considered moderately susceptible to erosion. Valdez silty clay loam and Valdez silt loam soils have K values of 0.47 and 0.53, respectively, and can be considered especially susceptible to erosion. Tamba mucky clay has a K value of 0.16 and is considered to have a low susceptibility to erosion.

According to the USDA, soil erodibility by wind is directly related to the percentage of dry nonerodable surface soil aggregates larger than 0.84 millimeters in diameter (USDA 2002b). The soil erodibility index ranges from 0 to 310, with higher values having greater susceptibility to wind erosion. Soils consisting of very fine, dry sand have the highest wind erodibility index; and soils consisting of wet or coarse fragments have the lowest wind erodibility index. All soils found within the Proposed Project have a wind erodibility index of 86, which means the soils in the area are moderately susceptible to wind erosion.

5.7.1.5 Paleontological Report

A Paleontological Resource Memorandum was prepared by Chronicle Heritage for the Proposed Project and is included as Attachment 5.7-A: Paleontological Resources Memorandum. The paleontological resource assessment included a fossil locality records search conducted by the Natural History Museum of Los Angeles County (NHMLAC). The records search was supplemented by a review of existing geologic maps and primary literature regarding fossiliferous geologic units within the Proposed Project vicinity and region. The memorandum was written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP) (2010) and has been prepared to support environmental review under the California Environmental Quality Act (CEQA) (Chronicle Heritage 2024).

The NHMLAC records search did not identify any fossil localities from within the Proposed Project area. Searches of online databases and other literature produced five fossil localities within 3 miles of the Proposed Project. Table 5.7-4: Vertebrate Localities Documented within 3 Miles of the Proposed Project summarizes the findings from the NHMLAC records search.

Table 5.7-4: Vertebrate Localities Documented within 3 Miles of the Proposed Project

Locality No.	Age	Taxa	Formation	Depth
Antioch 2	Pleistocene	Bison (*Bison* sp.), horse (*Hipparion* sp., *Equus* sp.), ground sloth (*Glossotherium* sp.)	Not specified	Not specified
Antioch 3	Pleistocene	Feral horse (*Equus cabellus*, *Equus* sp.), badger (*Taxidae* sp.), deer (*Odocoileus* sp.), bison	Not specified	Not specified
Antioch General	Pleistocene	Pacific mastodon (*Mammut pacificus*), mammoth (*Mammuthus* sp.)	Not specified	Not specified
Collinsville	Pleistocene	Mammoth, horse	Not specified	Not specified
Montezuma Hills 1	Pleistocene	Horse, eutheria, elk (*Cervus* sp.), camelid (*Camelops* sp.)	Montezuma	Not specified

Sources: Chronicle Heritage 2024, University of California Museum of Paleontology (UCMP) 2023, Dooley et al. 2019

The geology of the Proposed Project area is mapped by Graymer et al. (2002) at a scale of 1:100,000, who identified six distinct geologic units underlying the Proposed Project. The geologic units underlying the area of the proposed LSPGC 230 kV Submarine Segment are not mapped by Graymer et al. (2002); however, previous sampling of submarine bay and delta sediment showed clay, silt, and coarse sand of intertidal to subtidal environments were deposited on thick estuarine mud from the middle Holocene. Geologic units crossed by the Proposed Project and the associated SVP (2010) sensitivities are summarized in Table 5.7-5: Geologic Units Crossed by the Proposed Project.

A description of each geologic unit crossed by the Proposed Project and included in Attachment 5.7-A: Paleontological Resources Memorandum is provided in the subsections that follow.

Table 5.7-5: Geologic Units Crossed by the Proposed Project

Geologic Unit	Typical Fossils[1]	Paleontological Sensitivity
Montezuma Formation (Qmz) (Early Pleistocene)	Bison, feral horse, horse, ground sloth, badger, deer, Pacific mastodon, mammoth, eutheria, elk, and camelid	High
Alluvial Fan Deposits (Qpf) (Late Pleistocene)		High
Delta Mud Deposits (Qhdm) (Holocene)	None	Low
Bay Mud Deposits (Qhbm) (Holocene)	None	Low
Alluvial Fan Deposits (Qhf) (Holocene)	None	Low
Artificial Fill (af) (Holocene)	None	None
Unmapped sedimentary deposits of the Suisun Bay and the Sacramento River Delta (Holocene)	None	Low

Sources: Chronicle Heritage 2024, UCMP 2023, Dooley et al. 2019, SVP 2010

5.7.1.5.1 Montezuma Formation (Qmz) (Early Pleistocene)

The Montezuma Formation (Qmz) underlies the Montezuma Hills northeast of Collinsville and is composed of soft, brown, poorly sorted, quartz-lithic sand, silt, and pebble gravel with clasts including red chert and volcanics. The Montezuma Formation (Qmz) underlies most of the northern portion of the Proposed Project area. In the area of Delta, Pleistocene deposits, including the Montezuma Formation (Qmz), have produced remains of bison, mammoth, horse, camel, ground sloth, deer, rodents, reptiles, amphibians, and cartilaginous and bony fish, and would have a high paleontological sensitivity (Chronical Heritage 2023).

5.7.1.5.2 Alluvial Fan Deposits (Qpf) (Late Pleistocene)

Alluvial fan deposits (Qpf) from the Late Pleistocene (12,900 to 11,700 years ago) are composed of moderately to poorly sorted, moderately to poorly bedded sand, gravel, silt, and clay deposited where streams emanate from upland regions onto more gently sloping valley floors or plains. Pleistocene alluvial fan deposits (Qpf) may be present below the artificial fill (af) in the southern portion of the Proposed Project area. Regional Pleistocene fossils, discussed previously for the Montezuma Formation (Qmz), would give the alluvial fan deposits (Qpf) a high paleontological sensitivity as well (Chronical Heritage 2023).

5.7.1.5.3 Delta Mud Deposits (Qhdm) (Holocene)

Delta mud deposits (Qhdm) are composed of mud and peat with minor silt and sand deposited at or near sea level. This unit underlies the lower-elevation, near-shore areas in the northern portion of the Proposed Project area. Holocene deposits are typically too young to have accumulated or preserved significant biological material and have a low paleontological sensitivity as a result (Chronical Heritage 2023).

5.7.1.5.4 Bay Mud Deposits (Qhbm) (Holocene)

Bay mud deposits (Qhbm) are composed of gray, green, blue, and black clay and silty clay underlying marshlands and tidal mud flats with lenses of well-sorted, fine sand and silt, shell, and peat. This unit is mapped in the western edge of the northern portion of the Proposed Project area and the southwest corner of the southern portion of the Proposed Project area and may underlie more of the southern portion below the artificial fill (af). Holocene deposits are typically too young to have accumulated or preserved significant biological material and have a low paleontological sensitivity as a result (Chronical Heritage 2023).

5.7.1.5.5 Alluvial Fan Deposits (Qhf) (Holocene)

Alluvial fan deposits (Qhf) from the Holocene Epoch are composed of moderately to poorly sorted, moderately to poorly bedded sand, gravel, silt, and clay deposited where streams emanate from upland regions onto more gently sloping valley floors or plains. This unit may underlie the southern portion of the Proposed Project area below the artificial fill (af). Holocene deposits are typically too young to have accumulated or preserved significant biological material and have a low paleontological sensitivity as a result (Chronical Heritage 2023).

5.7.1.5.6 Artificial Fill (af) (Holocene)

Artificial fill (af) is composed of undifferentiated, man-made deposits of various materials and ages, including dredge spoils, levee fill, road embankments, earthen dams, and railroad grades. This unit underlies PG&E's existing Pittsburg Substation in the southern portion of the Proposed Project area. Because of its man-made origin and recent age, artificial fill (af) has no paleontological sensitivity (Chronical Heritage 2023).

5.7.1.5.7 Unmapped Sedimentary Deposits of Suisun Bay and the Delta (Holocene)

The geologic units in the Proposed Project area underlying the Delta are not mapped. Previous sampling of submarine bay and Delta sediment showed clay, silt, and coarse sand of intertidal to subtidal environments were deposited on thick estuarine mud from the middle Holocene. These sediments are similar to the bay mud deposits (Qhbm) and Delta mud deposits (Qhdm), though there is likely also significant contamination in the surficial sediment by debris from the 19th and 20th century, including from mining and agriculture. Holocene deposits are typically too young to have accumulated or preserved significant biological material and have a low paleontological sensitivity as a result (Chronical Heritage 2023).

5.7.2 Regulatory Setting

5.7.2.1 Regulatory Setting

Federal, state, and local laws or regulations were reviewed for relevancy to the Proposed Project.

5.7.2.1.1 Federal

National Earthquake Hazards Reduction Act of 1977

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic

events. Four federal agencies are responsible for coordinating activities under NEHRP: the USGS, National Science Foundation, Federal Emergency Management Agency (FEMA), and National Institute of Standards and Technology. Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (FEMA 2023) are as follows:

- Advance the understanding of earthquake processes and their consequences;
- Enhance existing and develop new information, tools, and practices for protecting the nation from earthquake consequences;
- Promote the dissemination of knowledge and implementation of tools, practices, and policies that enhance strategies to withstand, respond to, and recover from earthquakes; and
- Learn from post-earthquake investigations to enhance the effectiveness of available information, tools, practices, and policies to improve earthquake resilience.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

5.7.2.1.2 State

California Building Code

The Proposed Project is subject to the applicable sections of Title 24, Part 2 of the California Building Code (CBC), which is administered by the California Building Standards Commission. Under state law, all building standards must be centralized in Title 24 to be enforceable. The CBC contains necessary California amendments, which are based on American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) Standards. The ASCE/SEI Standards provide requirements for general structural design and include means for determining earthquake loads, as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category (SDC) for a project. Once a project is categorized according to an SDC, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure—or any appurtenances connected or attached to such buildings or structures—throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was enacted by the state in 1972 to mitigate the hazards of surface faulting on structures planned for human occupancy and other critical structures. The state has established regulatory zones, known as earthquake fault zones, around the surface traces of active faults. Earthquake fault zone maps have been issued for use by government agencies to plan and review new construction projects. In addition to residential projects, structures planned for human occupancy that are associated with industrial and commercial projects are also a concern near the Alquist-Priolo earthquake fault zones.

California Public Utilities Commission General Order 95

California Public Utilities Commission (CPUC) General Order (GO) 95 Rules for Overhead Line Construction provides general standards for the design and construction of overhead electric transmission lines.

Seismic Hazards Mapping Act

Like the Alquist-Priolo Earthquake Fault Zoning Act, the Seismic Hazards Mapping Act of 1990 (Public Resources Code [PRC] Sections 2690-2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to the Alquist-Priolo Earthquake Fault Zoning Act in that the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards; and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Public Resources Code Section 5097.5

Section 5097.5 of the PRC states:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor."

As used in this PRC section, "public lands" means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC Section 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

5.7.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan Resource Element does not contain any policies relating to paleontological resources relevant to the Proposed Project.

The Public Health and Safety Element of the Solano County General Plan details the seismic, slope, landslide, liquefaction, and shrink-swell hazards in the region and presents policies and implementation programs to reduce those hazards. The following policies from the Public Health and Safety Element are relevant to the Proposed Project (Solano County 2015):

- HS.P-15: Reduce risk of failure and reduce potential effects of failure during seismic events through standards for the construction and placement of utilities, pipelines, or other public facilities located on or crossing active fault zones.

- HS.P-17: Restrict the crossing of ground failure areas by new public and private transmission facilities, including power and water distribution lines, sewer lines, and gas and oil transmission lines.

Sacramento County General Plan

The Conservation Element of the Sacramento County General Plan considers paleontological resources to be cultural resources. The Cultural Resources section discusses paleontological resources in the region and provides objectives, policies, and implementation measures to protect Sacramento County's cultural history. The Conservation Element contains the following policies relating to paleontological resources that are relevant to the Proposed Project:

- CO-161: As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

- CO-162: Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards, and procedures.

- CO-163: Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

The Safety Element of the Sacramento County General Plan addresses the seismic and geologic conditions in the region and highlights policies and implementation measures to protect people and property from seismic and geologic hazards. The Safety Element does not contain any policies relating to seismic and geologic hazards relevant to the Proposed Project.

Contra Costa County General Plan

The Conservation Element of the Contra Costa County General Plan provides a background of soil types in the region and establishes goals, policies, and implementation measures to ensure soil resources are protected. The following policy from the Conservation Element is relevant to the Proposed Project (Contra Costa County 2005):

- Policy 8-63: Erosion control procedures shall be established and enforced for all private and public construction and grading projects.

The Safety Element of the Contra Costa County General Plan identifies seismic, ground failure, and landslide hazards in the region and outlines goals, policies, and implementation measures that ensure people and properties are protected. The following policies from the Safety Element are relevant to the Proposed Project (Contra Costa County 2005):

- Policy 10-4: In areas prone to severe levels of damage from ground shaking (i.e., Zone IV on Map 10-4), where the risks to life and investments are sufficiently high, geologic-seismic and soils studies shall be required as a precondition for authorizing public or private construction.

- Policy 10-6: Structures for human occupancy, and structures and facilities whose loss would substantially affect the public safety or the provision of needed services, shall not be erected in areas where there is a high risk of severe damage in the event of an earthquake.

- Policy 10-9: In areas susceptible to high damage from ground shaking (i.e., Zone IV on Map 10-4), geologic-seismic and soils studies shall be required prior to the authorization of major land developments and significant structures (public or private).

- Policy 10-13: In areas where active or inactive earthquake faults have been identified, the location and/or design of any proposed buildings, facilities, or other development shall be modified to mitigate possible danger from fault rupture or creep.

- Policy 10-19: To the extent practicable, the construction of critical facilities, structures involving high occupancies, and public facilities shall not be sited in areas identified as having a high liquefaction potential, or in areas underlain by deposits classified as having a high liquefaction potential.

- Policy 10-20: Any structures permitted in areas of high liquefaction danger shall be sited, designed and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.

- Policy 10-21: Approvals to allow the construction of public and private development projects in areas of high liquefaction potential shall be contingent on geologic and engineering studies which define and delineate potentially hazardous geologic and/or soils conditions, recommend means of mitigating these adverse conditions; and on proper implementation of the mitigation measures.

City of Pittsburg General Plan

The City of Pittsburg General Plan's Resource Conservation Element does not contain any policies relating to paleontological resources relevant to the Proposed Project.

The Health and Safety Element of the City of Pittsburg General Plan provides an overview of the city's potential geologic hazards and identifies goals and policies to reduce the effects of geologic and seismic hazards. The following policy from the Health and Safety is relevant to the Proposed Project:

- Policy 10-P-13: During rehabilitation and redevelopment of industrial properties along the Suisun Bay waterfront, ensure that geotechnical mitigation measures are used to prevent collapse of structures in the event that liquefaction occurs.

5.7.3 Impact Questions

5.7.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For geology, soils, and paleontological resources, the CEQA Environmental Checklist asks if the Proposed Project would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - Strong seismic ground shaking?
  - Seismic-related ground failure, including liquefaction?
  - Landslides?
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

5.7.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for geology, soils, and paleontological resources.

5.7.4 Impact Analysis

5.7.4.1 Geology, Soils, and Paleontological Resources Impact Analysis

5.7.4.1.1 Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line would cross the Rio Vista fault, and PG&E's existing Pittsburg Substation is located on the Rio Vista fault, as shown in Figure 5.7-1: Faults Located within 10 Miles of the Proposed Project. In addition, the Concord, Davis, Greenville, Midland, and unnamed faults are located within 10 miles of the Proposed Project. Therefore, the Proposed Project is susceptible to earthquake forces and seismic shaking. The Rio Vista fault is a Late Quaternary fault that has demonstrated activity within the past 130,000 years. The most recent slip that occurred at each of the remaining faults within 10 miles of the Proposed Project occurred between 15,000 and 1.6 million years ago. Quaternary-aged faults are considered to have a relatively low potential for surface rupture.

The LSPGC and PG&E Proposed Project components would be installed near these existing faults, but would not introduce habitable structures; as such, they would not pose substantial risk of loss, injury, or death as a result of potential fault rupture. Furthermore, the LSPGC and PG&E Proposed Project components would be designed to be consistent with CPUC GO 95 and the CBC, which ensures adequate service and safety of persons engaged in the construction, O&M, or use of overhead electrical lines and to the public in general. As a result, the LSPGC and PG&E Proposed Project components would be able to withstand reasonably foreseeable seismic events. Incorporation of these standard engineering practices would ensure that people or structures would not be exposed to hazards associated with strong seismic ground shaking, and impacts would be less than significant.

Portions of the proposed LSPGC 230 kV Overhead Segment and proposed PG&E 12 kV Distribution Line would cross areas mapped as having a high liquefaction potential. The

proposed LSPGC 230 kV Underground Segment (on the southern shore of the Sacramento River) would be in an area mapped as having a very high liquefaction potential, as is PG&E's existing Pittsburg Substation. The proposed LSPGC Collinsville Substation and PG&E 500 kV Interconnection would be in an area mapped as having a very low liquefaction potential. The proposed LSPGC Telecommunications Line would be in an area mapped as having a low liquefaction potential. The proposed LSPGC 230 kV Submarine Segment would be installed in the Delta waterways and would not be in an area susceptible to liquefaction or landslides. The LSPGC and PG&E Proposed Project components would not be located in a landslide zone, and no records of major historical landslides were found in the Proposed Project area.

As described in Chapter 3 – Project Description, geotechnical studies would be conducted as part of the engineering and design process. To avoid impacts that may result from seismic activity, the LSPGC and PG&E Proposed Project components would adhere to and implement all design recommendations and parameters established in the Proposed Project-specific geotechnical engineering report, which would be prepared prior to LSPGC and PG&E Proposed Project component construction. Additionally, the LSPGC and PG&E Proposed Project components would be designed to be consistent with the design and engineering standards contained in CPUC GO 95 and the CBC. O&M activities would include quarterly inspections of the proposed LSPGC Collinsville Substation and approximately one maintenance trip per year for the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment. PG&E's O&M activities would be similar to those currently performed in the Proposed Project area. O&M activities would not involve substantial ground disturbance or installation of new features that would expose people or structures to seismic hazards. Therefore, construction and O&M of the LSPGC and PG&E Proposed Project components would have a less-than-significant impact related to the rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides.

5.7.4.1.2 Would the project result in substantial soil erosion or the loss of topsoil?

Construction

LSPGC Components

Less-than-Significant Impact. As described in Chapter 3 – Project Description, grading is anticipated along new access roads; staging areas; and for construction of the proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment as these LSPGC Proposed Project components would be located in an area with slopes ranging between 2 and 30 percent. Site preparation at the staging areas and structure work areas is expected to include minor grading and/or grubbing as needed to provide a reasonably level and vegetation-free surface. The proposed LSPGC Collinsville Substation would cause the permanent loss of approximately 12 acres of land designated as Grazing Land. The proposed LSPGC 230 kV Overhead Segment would cause the permanent loss of approximately 0.1 acre of land designated as Grazing Land. Although topsoil reuse is not feasible within the fenced substation area or in the locations of permanent structures, Storm Water Pollution Prevention Plan (SWPPP) measures would apply to exterior temporary work areas, and topsoil would be conserved to minimize the potential for topsoil erosion. In accordance with APM GEO-1, topsoil loss would be minimized to the extent feasible by keeping vehicles and construction equipment within the limits of the Proposed

Project, salvaging topsoil in appropriate temporary work areas where grading is required, avoiding saturated soils, restoring temporarily disturbed areas, and keeping vegetation and soil disturbance to a minimum.

Ground-disturbing activities would expose soil to erosion by removing the vegetative cover and potentially compromising the soil structure. Rain and wind can further detach soil particles and transport them off site. The LSPGC Proposed Project components would receive coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, 2022-0057-DWQ. This general permit requires submittal of a Notice of Intent, preparation of a Proposed Project-specific SWPPP, and implementation of site-specific best management practices (BMPs) to address material management, non-storm water discharge, sediment discharge, and erosion control. Information based on the soil type, slope, and other on-site characteristics would be used to develop appropriate BMPs to ensure that erosion and sedimentation would be controlled during construction of the LSPGC Proposed Project components. As described in Section 5.10 Hydrology and Water Quality, the Proposed Project would comply with state storm water regulations and the terms of ministerial grading permits from Solano County to minimize soil erosion and the resulting impacts on water quality.

With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site sedimentation, substantial soil erosion is not anticipated to occur. In addition, implementation of APM GEO-1 would minimize the loss of topsoil. As a result, impacts during construction would be less than significant.

PG&E Components

Less-than-Significant Impact. As described in Chapter 3 – Project Description, grading is anticipated along new access roads, staging areas, and for construction of the proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line as these components would be located in an area with slopes ranging between 2 and 30 percent. Site preparation at the staging areas and structure work areas is expected to include minor grading and/or grubbing as needed to provide a reasonably level and vegetation-free surface. The proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line would cause the permanent loss of approximately 0.6 acre of land designated as Grazing Land. Although topsoil reuse is not feasible in the locations of permanent structures, SWPPP measures would apply to temporary work areas, and topsoil would be conserved to minimize the potential for topsoil erosion. In accordance with Construction Measure (CM) GEO-1, topsoil loss would be minimized to the extent feasible by compacting, binding, or installing material such as aggregate rock or steel plates over loose soils.

Ground-disturbing activities would expose soil to erosion by removing the vegetative cover and potentially compromising the soil structure. Rain and wind can further detach soil particles and transport them off site. PG&E would receive coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, 2022-0057-DWQ. This general permit requires submittal of a Notice of Intent; preparation of a Proposed Project-specific SWPPP; and implementation of site-specific BMPs to address material management, non-storm water discharge, sediment discharge, and erosion control. Information based on the soil type, slope, and other on-site characteristics would be used to develop appropriate BMPs to ensure that erosion and sedimentation would be controlled during construction of the PG&E

Proposed Project components. As described in Section 5.10 Hydrology and Water Quality, the Proposed Project would comply with state storm water regulations and the terms of ministerial grading permits from Solano County to minimize soil erosion and the resulting impacts on water quality.

With implementation of the SWPPP, which would include BMPs to control erosion and prevent off-site sedimentation, substantial soil erosion is not anticipated to occur. In addition, implementation of CM GEO-1 would minimize the loss of topsoil. As a result, impacts during construction would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously described, O&M activities associated with the LSPGC and PG&E Proposed Project components would not involve substantial ground disturbance or installation of new features and therefore would not result in soil erosion or the loss of topsoil. As a result, no impact would occur.

5.7.4.1.3 Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components would not cause any geologic unit or soil to become unstable. However, portions of the proposed LSPGC 230 kV Overhead Segment and proposed PG&E 12 kV Distribution Line would be located on geologic units with high liquefaction potential. The proposed LSPGC 230 kV Underground Segment would also be on a geologic unit, and PG&E's existing Pittsburg Substation is on a geologic unit mapped as having a very high liquefaction potential. Therefore, portions of the LSPGC and PG&E Proposed Project components would be located on geologic units associated with liquifiable soils. However, these components would implement all recommendations from Proposed Project-specific geotechnical engineering report. Additionally, the LSPGC and PG&E Proposed Project components would be designed to be consistent with the design and engineering standards contained in CPUC GO 95 and the CBC. Impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant as geotechnical report recommendations would be incorporated into the LSPGC and PG&E Proposed Project component design.

As previously discussed, ground subsidence related to peat loss in the Delta has been previously observed approximately 2.5 miles from the proposed PG&E 500 kV Interconnection. Although the Proposed Project is in the vicinity of subsidence-prone areas, it would not involve the withdrawal of groundwater or extraction of oil and gas, and thus would not be expected to result in subsidence. Dewatering foundation holes or other excavations during construction, if required, would be considered a short-term and negligible impact to groundwater. Therefore, impacts associated with groundwater dewatering during construction would be less than significant.

O&M activities associated with the LSPGC and PG&E Proposed Project components would not involve substantial ground disturbance or installation of new features that would cause unstable soils or result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, impacts would be less than significant.

5.7.4.1.4 Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. Portions of the proposed LSPGC 230 kV Overhead Segment and LSPGC Telecommunications Line would occur on Valdez silty clay loam soils (Vd) and Omni Silt clay (Ob), respectively, that could have expansive characteristics, as they are classified as Hydrologic Group D. The proposed LSPGC Collinsville Substation, the remaining portions of the proposed LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would be constructed on soils classified as Hydrologic Group C. The proposed LSPGC 230 kV Submarine Segment would be in the Delta, which is not underlain by expansive soils. Expansive soils along the Proposed Project are unlikely to create geotechnical issues because new poles/structures would be installed at depths of approximately 10 to 50 feet (depending on the pole/structure type and location). Thus, the structures would be buried below shallow expansive soils, as defined in the Uniform Building Code (1994). The proposed LSPGC Telecommunications Line would be installed at depths of approximately 2 to 5 feet. Therefore, the Proposed Project is not anticipated to pose substantial risks to life or property. Furthermore, all recommendations from Proposed Project-specific geotechnical engineering report would be implemented. As a result, impacts would be less than significant.

5.7.4.1.5 Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Construction

LSPGC and PG&E Proposed Project Components

No Impact. Construction of the LSPGC and PG&E Proposed Project components would not involve use of a septic tank or alternative wastewater disposal system. Wastewater generated at portable toilets during construction would be disposed of off site at appropriate facilities. As a result, no impact would occur.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. The Proposed Project does not include operation of a septic tank or alternative wastewater disposal system. As a result, no impact would occur.

5.7.4.1.6 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Construction

LSPGC Components

Less-than-Significant Impact. While there are no documented paleontological resources within the Proposed Project area, fossils have been uncovered within 3 miles of the Proposed Project, and the Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) underlying the Proposed Project have the potential to yield fossils. As a result, construction activities involving trenching or excavation have the potential to uncover fossils.

Implementation of APMs PALEO-1 and PALEO-2 would ensure that potential impacts to paleontological resources resulting from LSPGC Proposed Project component construction would be less than significant. APM PALEO-1 would require that all field personnel receive a Worker's Environmental Awareness Program (WEAP) training that details the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project area, the role of the paleontological monitor, steps to follow if a fossil discovery is made, and contact information for the Proposed Project paleontologist. APM PALEO-2 would require a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Montezuma Formation (Qmz). If a paleontological resource is discovered, the monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. Although the proposed LSPGC Telecommunications Line would be underlain by Pleistocene alluvial fan deposits (Qpf) that have a high paleontological sensitivity, it would be located in a previously disturbed area. In addition, the proposed LSPGC Telecommunications Line would be installed by horizontal directional drilling, which would make monitoring infeasible. As a result, paleontological monitoring would not be required during construction of the proposed LSPGC Telecommunications Line. With the implementation of APMs PALEO-1 and PALEO-2, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. While there are no documented paleontological resources within the Proposed Project area, fossils have been uncovered within 3 miles of the Proposed Project, and the Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) underlying the Proposed Project have the potential to yield fossils. As a result, construction activities involving trenching or excavation have the potential to uncover fossils.

Implementation of PG&E CMs PALEO-1 and PALEO-2 would ensure that potential impacts to paleontological resources resulting from PG&E Proposed Project component construction would be less than significant. CM PALEO-1 would require that all field personnel receive environmental awareness training that details the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project area, the role of the paleontological monitor, steps to follow if a fossil discovery is made, and contact information for the Proposed Project paleontologist. CM PALEO-2 would require a paleontological monitor to be present during initial ground-disturbing activities in previously undisturbed areas mapped as the Montezuma Formation (Qmz). If a paleontological resource is discovered, the monitor would

have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. With the implementation of PG&E CMs PALEO-1 and PALEO-2, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously described, O&M activities associated with the LSPGC and PG&E Proposed Project components would not involve substantial ground disturbance or installation of new features that would potentially damage a unique paleontological resource or site or unique geologic feature. As a result, no impact would occur.

5.7.4.2 Geotechnical Requirements

A geotechnical report for the Proposed Project would be prepared and the LSPGC and PG&E Proposed Project components would be designed to minimize the potential for facilities to be affected by landslides, lateral spreading, subsidence, liquefaction, or collapse. Measures that may be used to minimize impacts could include, but are not limited to construction of directly embedded foundations, installation of support around pole bases, installation of flexible bus connections, and incorporation of slack cables.

5.7.4.3 Paleontological Resources

Paleontological resources are summarized in Section 5.7 Paleontological Report and Attachment 5.7-A: Paleontological Resources Memo.

5.7.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for geology, soils, and paleontological resources.

5.7.6 Applicant-Proposed Measures

5.7.6.1 Geology, Soils, and Paleontological Resources Applicant-Proposed Measures

The following APMs would be implemented for the LSPGC Proposed Project components:

- **APM GEO-1: Geological Hazards and Disturbance to Soils.** The following measures would be implemented during construction to minimize impacts from geological hazards and disturbance to soils:

  – Keep vehicles and construction equipment within the limits of the Proposed Project and in approved construction work areas to reduce disturbance to topsoil.

  – Salvage any disturbed topsoil during temporary grading activities to a maximum depth of 6 inches or to the actual depth if shallower (as identified in a site-specific geotechnical engineering report) to avoid the mixing of soil horizons.

  - Avoid construction in areas with saturated soils where topsoil salvage has not occurred whenever practical to reduce impacts to soil structure and allow safe access. Similarly, avoid topsoil salvage in saturated soils to maintain soil structure.

  - Keep topsoil material on site in the immediate vicinity of the temporary disturbance or at a nearby approved work area to be used in the restoration of temporarily disturbed areas. Recontour temporarily disturbed areas following construction to match pre-construction grades. Site and manage on-site material storage in accordance with all required permits and approvals.

  - Keep vegetation removal and soil disturbance to a minimum and limited to only the areas needed for construction and to provide adequate vegetation removal to meet electrical clearance and wildfire prevention requirements. Dispose of removed vegetation off site at an appropriate licensed facility, or it can be chipped on site to be used as mulch during restoration.

- **APM PALEO-1: WEAP Training.** Prior to the start of the construction activities, all field personnel would receive a WEAP training on paleontological resources. The training would provide a description of the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project area, the role of the paleontological monitor, steps to follow if a fossil discovery is made, and contact information for the paleontologist. The training would be developed by the paleontologist and would be delivered concurrently with other training, including cultural, biological, and safety.

- **APM PALEO-2: Paleontological Monitoring.** A professional paleontologist would be retained to monitor initial ground-disturbing activities in previously undisturbed areas mapped as Montezuma Formation (Qmz). Monitoring would entail the visual inspection of excavated or graded areas and trench sidewalls.

  If a paleontological resource is discovered, the paleontological monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. If the resource is determined to be of scientific significance, the paleontological monitor would complete the following steps:

  - If fossils are discovered, all work in the immediate vicinity would be halted to allow the paleontological monitor to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the paleontological monitor would recover them by following standard field procedures for collecting paleontological resources. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (e.g., skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontological monitor would have the authority to temporarily direct, divert, or halt construction activity to ensure that the fossils can be removed in a safe and timely manner.

- An accredited repository, which has agreed to accept fossils that may be discovered during Proposed Project-related excavations, would be identified prior to construction activities. Upon completion of fieldwork, all significant fossils collected would be prepared in a properly equipped laboratory to a point ready for curation. Preparation may include the removal of excess matrix from fossil materials and stabilizing or repairing specimens. During preparation and inventory, the fossil specimens would be identified to the lowest taxonomic level practical prior to curation at an accredited repository (usually a museum). The fossil specimens would be delivered to the accredited museum or repository no later than 30 days after all laboratory work is completed. The cost of curation would be assessed by the repository and would be the responsibility of the client.

5.7.7 PG&E Construction Measures

5.7.7.1 Geology, Soils, and Paleontological Resources PG&E Construction Measures

The following CMs would be implemented for the PG&E Proposed Project components:

- **CM GEO-1: Minimize Construction in Soft or Loose Soils.** Where soft or loose soils are encountered during Proposed Project construction, several actions are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these actions may be implemented to eliminate impacts from soft or loose soils:

  - Locating construction facilities and operations away from areas of soft and loose soil.
  - Over-excavating soft or loose soils and replacing them with engineered backfill materials.
  - Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.
  - Installing material, such as aggregate rock, steel plates, or timber mats, over access roads.
  - Treating soft or loose soils in place with binding or cementing.

- **CM PALEO-1: Worker Awareness Training.** PG&E would provide environmental awareness training on paleontological resources protection. This training may be administered by the PG&E cultural resources specialist (CRS) or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the project and would at minimum include: types of cultural resources or fossils that could occur at the project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing paleontological resources.

- **CM PALEO-2: Paleontological Monitoring.** A professional paleontologist would be retained to monitor initial ground-disturbing activities in previously undisturbed areas mapped as Montezuma Formation (Qmz). Monitoring would entail the visual inspection of excavated or graded areas and trench sidewalls.

If a paleontological resource is discovered, the paleontological monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. If the resource is determined to be of scientific significance, the paleontological monitor would complete the following steps:

- If fossils are discovered, all work in the immediate vicinity would be halted to allow the paleontological monitor to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the paleontological monitor would recover them by following standard field procedures for collecting paleontological resources. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (e.g., skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontological monitor would have the authority to temporarily direct, divert, or halt construction activity to ensure that the fossils can be removed in a safe and timely manner.

- An accredited repository, which has agreed to accept fossils that may be discovered during Proposed Project-related excavations, would be identified prior to construction activities. Upon completion of fieldwork, all significant fossils collected would be prepared in a properly equipped laboratory to a point ready for curation. Preparation may include the removal of excess matrix from fossil materials and stabilizing or repairing specimens. During preparation and inventory, the fossil specimens would be identified to the lowest taxonomic level practical prior to curation at an accredited repository (usually a museum). The fossil specimens would be delivered to the accredited museum or repository no later than 30 days after all laboratory work is completed. The cost of curation would be assessed by the repository and would be the responsibility of the client.

5.7.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

Potential impacts to geology, soils, and paleontological resources associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature to (or less than) the Proposed Project buildout because the modification area is underlain with soil that has the same erosion potential and level of stability and because the surface disturbance area would be smaller. Further, the proposed LSPGC Collinsville Substation is underlain by the same geologic units. As such, the potential modification would result in less-than-significant impacts

to the geologic features and environmental setting; and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.8 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓

This section describes the greenhouse gas (GHG) emissions in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.8.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.8.1.1 Greenhouse Gas Setting

The Proposed Project would predominantly be situated within the San Francisco Bay Area Air Basin under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) with a small portion of the proposed LSPGC 230 kV Submarine Segment within the Sacramento Valley Air Basin under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Air quality in this area is determined by topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. Ozone and particle matter are the major regional air pollutants of concern in the San Francisco Bay Area. The climate in the Proposed Project area is influenced by the mixture of cool air that

flows from the Pacific Ocean and San Francisco Bay to lower areas in Solano County, with warm summer air from the Sacramento Valley. The resulting temperature and atmospheric pressure differences generate high wind speeds.

GHGs refer to gases that trap heat in the earth's atmosphere, causing a greenhouse effect. GHGs include, but are not limited to carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Atmospheric concentrations of CO_2 and CH_4—two directly emitted, long-lived GHGs—are currently well above the range of atmospheric concentrations that occurred over the past 650,000 years. According to the Intergovernmental Panel on Climate Change (IPCC), increased atmospheric levels of CO_2 are correlated with rising temperatures and concentrations of CO_2 have increased by 31 percent above pre-industrial levels since 1750. Climate models show that temperatures will probably increase by anywhere from 1.4 degrees Celsius (°C) to 5.8°C by 2100 (IPCC 2007).

Global warming potential (GWP) estimates how much a given mass of a specific GHG contributes to climate change. The term enables comparison of the warming effects of different gases. GWP uses a relative scale that compares the warming effect of the gas in question with that of the same mass of CO_2. The CO_2 equivalent (CO_2e) is a measure used to compare the effect of emissions of various GHGs based on their GWP when projected over a specified time period (generally 100 years). CO_2e is commonly expressed as metric tons of CO_2e ($MTCO_2e$). The CO_2e for a gas is obtained by multiplying the mass of the gas (in tons) by its GWP.

Electricity production accounted for 25 percent of the United States' (U.S.'s) GHG emissions in 2021 (U.S. Environmental Protection Agency [EPA] 2023). CO_2, CH_4, and N_2O, which are released during the combustion of fossil fuels to produce electricity, make up the majority of GHG emissions from this sector. Less than 1 percent of GHG emissions comes from SF_6, an insulating chemical used in electricity transmission and distribution equipment.

The proposed LSPCG Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection would be in an area primarily utilized for agricultural and utility infrastructure uses. The proposed LSPGC 230 kV Submarine Segment would be located underneath the Delta, an area used for transportation and recreational use. The proposed LSPGC 230 kV Underground Segment would be located adjacent to PG&E's existing Pittsburg Substation, an area used predominantly for power generation and utility use. The proposed LSPGC Telecommunications Line would be located in a primarily residential area. In the vicinity of the Proposed Project, transportation, residential and commercial energy use, and agricultural uses are the primary emissions sources of GHG.

5.8.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.8.2.1 Regulatory Setting

5.8.2.1.1 Federal

Federal Mandatory Reporting of Greenhouse Gases (Title 40, Part 98 of the Code of Federal Regulations)

The U.S. EPA promulgated the Federal Mandatory Reporting of Greenhouse Gases rule in 2009 to require mandatory reporting of GHGs from large GHG emissions sources in 31 source categories in the U.S. In general, the threshold for reporting is 25,000 $MTCO_2e$ or more. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, report at the corporate level. Facilities and suppliers began collecting data on January 1, 2010. Manufacturers of vehicles and engines outside of the light-duty sector began reporting CO_2 for model year 2011 and other GHGs in subsequent model years as part of existing U.S. EPA certification programs. Since 2012, the U.S. EPA and Title 40, Part 98, Subpart DD of the Code of Federal Regulations also require the reporting of SF_6 emissions from certain electrical facilities.

Clean Air Act

On April 2, 2007, in Massachusetts v. EPA, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act (CAA). On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."

- The Administrator further found the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

5.8.2.1.2 State

The California Air Resources Board (CARB) is the lead agency for implementing climate change regulations in California. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution issues. Key efforts by the state are described under the subheadings that follow.

Assembly Bill 32 (2006), California Global Warming Solutions Act

California's key initiative for reducing GHG emissions is Assembly Bill (AB) 32, passed by the state legislature on August 31, 2006. This effort set a target to reduce GHG emissions to 1990 levels by 2020. CARB established the level of GHG emissions in 1990 at 427 million metric tons

of CO_2e ($MMTCO_2e$). The emissions target of 427 $MMTCO_2e$ requires the reduction of 169 $MMTCO_2e$ from the state's projected business-as-usual (BAU) 2020 emissions of 596 $MMTCO_2e$. AB 32 requires CARB to prepare a Scoping Plan that outlines the main state strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. CARB approved the Scoping Plan on December 11, 2008. The Scoping Plan contains strategies California will implement to achieve the reduction of 169 $MMTCO_2e$, or approximately 30 percent, from the state's projected 2020 emission level of 596 $MMTCO_2e$ under a BAU scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10 percent from 2002 to 2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reduction of 31.7 $MMTCO_2e$),
- The Low-Carbon Fuel Standard (15.0 $MMTCO_2e$),
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and
- A renewable portfolio standard (RPS) for electricity production (21.3 $MMTCO_2e$).

The Scoping Plan identifies 18 emission-reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low-carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle-efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures were designed to reduce emissions by 174 $MMTCO_2e$ by 2020.

On August 24, 2011, CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. CARB also approved a more robust California Environmental Quality Act- (CEQA-) equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low-carbon investments. The First Update defines CARB climate change priorities until 2020 and sets the groundwork to reach long-term goals set forth in Executive Orders (EOs) S-3-05 and B-16-2012. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the state's "longer-term" GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan (CARB 2017), to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

The 2022 Scoping Plan (CARB 2022) was approved in December 2022 and assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later

than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and is designed to meet the state's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 375 (2008)

Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). CARB may update the targets every 4 years and must update them a minimum of every 8 years. MPOs, in turn, must demonstrate how their plans, policies, and transportation investments meet the targets set by CARB through Sustainable Community Strategies (SCSs). The SCSs are included in Regional Transportation Plans, which are reports required by state law. However, if an MPO finds that its SCS will not meet the GHG reduction target, it may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

Executive Order B-30-15

EO B-30-15 establishes an interim GHG reduction target of 40 percent below 1990 levels and directs state agencies to take additional actions to prepare for the impacts of climate change. These actions are captured in the state's adaptation strategy, Safeguarding California (California Natural Resources Agency 2018), which is to be updated every 3 years.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In 2016, the Governor signed SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on the foundation of AB 32 to achieve the state's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emission trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e.

The companion bill to SB 32, AB 197 provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Posted in December 2016, AB 197 provided easier public access to air pollutant emissions data collected by CARB.

Executive Order B-55-18

EO B-55-18 establishes a new statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." The goal is in addition to the existing statewide targets of reducing GHG emissions.

California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations §§ 95100-95133)

Pursuant to AB 32, CARB adopted the California Mandatory Greenhouse Gas Reporting Regulation. The facilities that are required to annually report their GHG emissions include

electricity-generating facilities, electricity-retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons per year of CO_2 from stationary-source combustion. In particular, retail providers of electricity are required to report fugitive emissions of SF_6 related to transmission and distribution systems, substations, and circuit breakers located in California that the retail provider or marketer is responsible for maintaining in proper working order.

Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (17 California Code of Regulations §§ 95350-95359)

SF_6 is a commonly used insulator in electric transmission and distribution equipment. Because of its high GWP, CARB adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear in 2010. This regulation requires that gas-insulated switchgear (GIS) owners not exceed the maximum annual SF_6 emission rate for active GIS equipment and establish and adhere to written procedures to track all gas containers as they are leaving and entering storage, calibrate and weigh all gas containers on a scale, establish and maintain a complete record of GIS equipment inventory, and submit annual reports to the CARB Executive Officer for emissions that occurred during the previous calendar year.

In response to emerging technologies using lower- or zero-GWP insulators, the regulation was amended in 2021 and required emission rates for SF_6-insulated switchgear to not exceed 1 percent. The amended regulation also included a phase-out schedule for new SF_6-insulated equipment, coverage of other GHGs beyond SF_6 used in GIS, and other changes that enhance accuracy of emissions accounting and reporting.

Senate Bill 100

SB 100, also known as the 100 Percent Clean Energy Act, signed into law in September 2018, amends the California RPS Program. The RPS Program requires the California Public Utilities Commission (CPUC) to establish an RPS that requires all retail sellers of electricity to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016; 33 percent by December 31, 2020; 44 percent by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. SB 100 also established a state policy that eligible renewable energy resources and zero carbon resources supply 100 percent of retail sales by 2045. Additionally, the RPS Program requires each local publicly owned electric utility to procure a minimum quantity of electricity products from eligible renewable energy resources to achieve the procurement requirements established by the program. SB 100 requires the California Energy Commission (CEC), CPUC, and CARB to issue a joint policy report in 2021 and every 4 years thereafter. The 2021 SB 100 Joint Agency Report evaluates the challenges and opportunities in the implementation of SB 100. Furthermore, the report promotes the construction of clean electricity generation and storage infrastructure, diversity in energy resources and technologies, retaining some natural gas power, and the necessity of further analysis (CEC 2021).

5.8.2.1.3 Regional

Bay Area Air Quality Management District

The BAAQMD is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD's CEQA Guidelines identify applicable GHG significance thresholds for use in determining whether a project would have a significant impact related to climate change. These thresholds evaluate a project based on its effect on California's efforts to meet the state's long-term climate goals. Applying this approach, the BAAQMD identifies and provides supporting documentation that outlines the requirements that new land use development projects must comply with to achieve California's long-term climate goal of carbon neutrality by 2045.

Sacramento Metropolitan Air Quality Management District

The SMAQMD is the regional government agency that regulates sources of air pollution within Sacramento County. The SMAQMD's Guide to Air Quality Assessment in Sacramento County provides methods for the analysis and review of GHG emissions from development projects located in the district's jurisdiction. The guide provides GHG significance thresholds for both construction- and operation-related GHG emissions.

5.8.2.1.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county regulations are not applicable as Solano, Sacramento, and Contra Costa counties do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County

Solano County's Board of Supervisors adopted its Climate Action Plan (CAP) on June 7, 2011 to address GHG emissions at the local level. The CAP recommends actions that the community can take to reduce both emissions and communitywide contributions to global climate change. In addition, the CAP establishes a communitywide GHG emissions reduction goal of 20 percent below 2005 levels by 2020.

Sacramento County

On September 27, 2022, Sacramento County adopted its CAP, which identifies vulnerabilities of the county to climate change and proposes a strategy to reduce impacts from environmental changes. The plan is designed to fulfill the requirements of the General Plan and produce a second-phase Climate Action Planning document that expands on policies with GHG reduction

benefits. The county's goal is to achieve carbon neutrality by 2030. The CAP provides climate change planning background; a vulnerability assessment; applicable General Plan policies; public and stakeholder engagement; GHG inventory, forecasting, and targets; and assessment for GHG reduction measures.

Contra Costa County

Contra Costa County adopted its first Municipal Climate Action Plan in 2008 that identifies strategies and GHG reduction measures to make county operations more sustainable. The CAP reflects the county's programs and actions to decrease energy use, improve energy efficiency, develop renewable energy, reduce vehicle miles traveled, increase multi-modal travel options, expand green infrastructure, reduce waste, and improve the efficiency of government operations. The CAP also forecasts the county's GHG emissions and sets reduction targets and strategies. The updated 2015 plan identifies how the county will achieve its AB 32 GHG emission reduction target of 15 percent below baseline levels and notes. The 2018 CAP update calls for an update to the county's General Plan to reflect the CAP's framework for GHG goals and policies.

5.8.3 Impact Questions

5.8.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For GHG emissions, the CEQA Environmental Checklist asks if the Proposed Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

5.8.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA Impact Questions required for Greenhouse Gas Emissions.

5.8.4 Impact Analysis

5.8.4.1 Greenhouse Gas Emissions Impact Analysis

5.8.4.1.1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As presented in Attachment 5.3-A: Air Quality Calculations in Section 5.3 Air Quality, emission factors from the following sources were used to calculate GHG

emissions from construction (e.g., heavy equipment use, helicopter use, and on-road vehicle travel), maintenance vehicle use, electricity consumption, and fugitive SF_6 losses:

- California Emissions Estimator Model (CalEEMod) v2022.1;
- U.S. EPA AP-42, Compilation of Air Pollutant Emission Factors;
- CARB vehicle emission models;
- the Swiss Federal Office of Civil Aviation (FOCA) Guidance on the Determination of Helicopter Emissions (FOCA 2015); and
- CEC and other agency studies (California Air Pollution Control Officers Association 2022).

Operations of the Proposed Project would begin in 2028, once construction has been completed. While most would be managed off site, regular maintenance for the LSPGC Proposed Project components would include quarterly and annual inspections, depending on the facility. For the purposes of preparing an overly conservative analysis, it was assumed that the Proposed Project would generate five trips per month.

Operational emissions would also include the consumption of energy on site from auxiliary equipment located in the Proposed LSPGC Collinsville Substation, such as control room heating, ventilation, and air conditioning units; communications equipment; and lighting. As described in Chapter 3 – Project Description, the total on-site electrical demand would be 22 kilowatts (kW) for the 500 kV GIS enclosure, and 22 kW for the 230 kV GIS enclosure; this would equate to approximately 385,440 kilowatt-hours (kWh) per year.

Lastly, the Proposed LSPGC Collinsville Substation would include the installation and operation of six 500 kV and six 230 kV gas-insulated circuit breakers, which would utilize SF_6 for insulation. The Proposed LSPGC Collinsville substation would also house the circuit breakers within GIS halls, which would also utilize SF_6 for insulation. The SF_6 volume at the substation was estimated using preliminary design information and typical values from the likely circuit breaker manufacturers. Leak rates when operational would be 0.1 percent for 230 kV equipment and 0.2 percent for 500 kV equipment.

Table 5.8-1: GHG Emissions provides the anticipated GHG emissions from the construction phase of the Proposed Project and the anticipated annual GHG emissions from O&M.

According to the BAAQMD's guidelines, a numerical threshold for construction-related GHG emissions has not been established because construction emissions are temporary and variable; however, project proponents should quantify and disclose anticipated emissions. The emissions from the construction phase of the LSPGC and PG&E Proposed Project components are identified in Table 5.8-1: GHG Emissions. Attachment 5.3-A: Air Quality Calculations in Section 5.3 Air Quality provides the calculations that were used to quantify these emissions. To further reduce emissions, applicant-proposed measure (APM) GHG-1 would be implemented for construction of the LSPGC Proposed Project components and would require that vehicles and equipment be properly maintained, construction debris be recycled, and line power be used in lieu of diesel generators when feasible.

Table 5.8-1: GHG Emissions

Emission Source	Estimated Emissions (metric tons)				
	CO_2	CH_4	N_2O	SF_6	CO_2e
Construction	**6,059.67**	**0.2**	**0.1**	**--**	**6,075.7**
BAAQMD	5,789.5	0.2	0.1	--	5,808.6
SMAQMD	266.2	< 0.1	< 0.1	--	267.1
O&M	**38.1**	**< 0.1**	**< 0.1**	**< 0.1**	**252.2**
Vehicle Use	2.5	< 0.1	< 0.1	--	2.6
Electricity Consumption	35.7	< 0.1	< 0.1	--	35.7
Fugitive SF_6 Losses	--	--	--	< 0.1	214.0

Note: Regular maintenance of the proposed LSPGC 230 kV Submarine Cable is not anticipated; no sources of GHG emissions from O&M would be located within the SMAQMD jurisdiction; values may not sum due to rounding.

For stationary sources of GHG emissions, the BAAQMD has established an annual threshold of 10,000 $MTCO_2e$. As shown in Table 5.8-1: GHG Emissions, annual O&M emissions are anticipated to be 252.2 $MTCO_2e$. As a result, emissions would be below the BAAQMD's threshold, and impacts within the BAAQMD would be less than significant.

The SMAQMD recommends an annual construction-related GHG threshold of 1,100 $MTCO_2e$. As shown in Table 5.8-1: GHG Emissions, construction activities within the SMAQMD are anticipated to generate approximately 267.1 $MTCO_2e$. Therefore, these emissions would be below the applicable threshold, and impacts would be less than significant. To further reduce impacts, APM GHG-1 would be implemented for the LSPGC Proposed Project components and would require that vehicles and equipment be properly maintained, construction debris be recycled, and line power be used in lieu of diesel generators when feasible. Because the Proposed Project would not have any operational GHG emissions within the SMAQMD, no impact would occur during that phase.

Aside from the physical emissions of GHGs from construction and O&M of the LSPGC and PG&E Proposed Project components, implementation of the Proposed Project would serve to help integrate existing and future renewable energy projects. By making the transmission system more compatible with renewable energy generation, GHG emissions would be indirectly reduced. This effect would increase over time as the PG&E renewable portfolio continues to increase toward reaching the requirement of 60 percent by 2030.

PG&E Components

Less-than-Significant Impact. As previously described, according to the BAAQMD's guidelines, a numerical threshold for construction-related GHG emissions has not been established because construction emissions are temporary and variable; however, project proponents should quantify and disclose anticipated emissions. Construction and O&M of the PG&E Proposed Project components would not occur within the SMAQMD. The emissions from the construction phase of the Proposed Project are identified in Table 5.8-1: GHG

Emissions.[1] Attachment 5.3-A: Air Quality Calculations in Section 5.3 Air Quality provides the calculations that were used to quantify these emissions. To further reduce GHG emissions during construction, Construction Measure (CM) GHG-1—which outlines practices such as worker carpooling, minimizing vehicle idling time, and using low-emission or electric construction equipment where feasible—would be implemented for construction of the PG&E Proposed Project components. O&M of the PG&E Proposed Project components would constitute a relatively small fraction of O&M-related GHG emissions for the Proposed Project. The proposed LSPGC Collinsville Substation would be the main source of O&M-related GHG emissions for the Proposed Project. As previously described, O&M of the Proposed Project would indirectly reduce GHGs through serving future renewable energy projects. Therefore, impacts would be less than significant.

5.8.4.1.2 Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. To meet GHG reduction goals, CARB prepared the AB 32 Scoping Plan and provided updates to the plan in 2014, 2017, and 2022 to guide statewide GHG reduction strategies. The 2022 Scoping Plan is designed to reduce statewide anthropogenic GHG emissions in California by 85 percent as compared to the 1990 levels by 2045.

Electrification of day-to-day operations in land use development projects and industrial processes is a method that potentially can reduce fossil fuel (including gasoline or diesel) combustion because of the use of a less carbon-intensive energy source (depending on the source of electricity production). By increasing reliability of the Proposed Project area's power system, existing electricity customers will have access to safe and reliable electricity. This reliable electricity source may then support additional electrification of customer operations, which in turn may result in reduced GHG emissions. Improving the regional power system can also support existing or future renewable electric generation (e.g., wind, solar, hydro, and thermal), thereby potentially reducing the use of carbon-intensive energy sources. GHG emissions from the LSPGC and PG&E Proposed Project components' O&M activities would be minimal, primarily from the use of SF_6 as an insulating material within the proposed LSPGC Collinsville Substation; would generate approximately 60 vehicle trips per year for regular O&M activities; and would not involve a significant use of fossil fuels. As a result, the LSPGC and PG&E Proposed Project components would be consistent with the goals of and would not conflict with the 2022 Scoping Plan. No impact would occur.

5.8.4.2 Greenhouse Gas Emissions

A quantitative assessment of GHG emissions is presented previously in Section 5.8.4.1 Greenhouse Gas Emissions Impact Analysis. As addressed in Section 5.3 Air Quality, the results of the quantitative assessment are presented in Attachment 5.3-A: Air Quality Calculations; all calculations, presented in Microsoft Excel format, are provided to the CPUC under separate

[1] Modeling of emissions was conducted for the Proposed Project as a whole regardless of the proponent.

cover. A discussion of programs in place to reduce GHG emissions on a system-wide level is provided in Section 5.8.4.1 Greenhouse Gas Emissions Impact Analysis.

5.8.4.3 Natural Gas Storage Accident Conditions

The Proposed Project would not involve natural gas storage.

5.8.4.4 Monitoring and Contingency Plan

The Proposed Project would not involve natural gas storage.

5.8.5 CPUC Draft Environmental Measures

While the CPUC includes a draft environmental measure for GHG emissions reduction during construction within the Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, it is not included within this document. Instead, APM GHG-1 was included in place of the CPUC's draft environmental measure.

5.8.6 Applicant-Proposed Measures

5.8.6.1 Greenhouse Gas Emissions Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM GHG-1: Greenhouse Gas Emissions Reduction During Construction.** The following measures would be implemented during construction to minimize GHG emissions:

  - If suitable park-and-ride facilities are available in the Proposed Project vicinity, construction workers would be encouraged to carpool to the job site.
  - On-road and off-road vehicle tire pressures would be inflated to manufacturer specifications; tires would be checked and reinflated at regular intervals.
  - Demolition debris would be recycled for reuse to the extent feasible.
  - Line power, instead of diesel generators, would be used at construction sites where feasible.
  - Construction equipment would be maintained per the manufacturer's specifications.

5.8.7 PG&E Construction Measures

5.8.7.1 Greenhouse Gas Emissions PG&E Construction Measures

The following CM would be implemented for the PG&E Proposed Project components:

- **CM GHG-1: Greenhouse Gas Emissions Reduction During Construction.** The following actions would be taken, as feasible, to minimize greenhouse gas emissions.

  - Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would

not adversely affect worker arrival time and the Proposed Project's construction schedule.

- Minimize unnecessary construction vehicle idling time for on-road and off-road vehicles. The ability to limit construction vehicle idling time would 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 Proposed Project would 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 would be shut off. Construction foremen would include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings would include discussion of a "common sense" approach to vehicle use.

- Maintain construction equipment in proper working conditions in accordance with PG&E standards.

- 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 would be registered under the CARB Statewide Portable Equipment Registration Program.

- Minimize welding and cutting by using compression of 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.

- Encourage recycling construction waste where feasible.

5.8.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts from GHG emissions associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would be located in the same air basin and would be constructed with the same construction methods. The substation modification would involve adding six new 500 kV circuit breakers, and nine new 230 kV circuit breakers to the substation. This additional equipment would increase the total SF_6 on the substation site by 4,785 pounds. This additional SF_6 would lead to an increase in annual fugitive SF_6 losses by approximately 89.1 $MTCO_2e$. The substation's electricity consumption would also increase by approximately 35,040 kWh annually, thereby further increasing annual GHG emissions by approximately 3.2 $MTCO_2e$. With the increased SF_6 losses and increased electrical consumption incorporated, the Proposed Project emissions would continue to be below the BAAQMD's 10,000 $MTCO_2e$ threshold. As such, the potential modification would result in less-than-significant impacts from GHG emissions and the environmental setting, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.9 HAZARDS, HAZARDOUS MATERIALS, AND PUBLIC SAFETY

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			✓	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			✓	
h) Create a significant hazard to air traffic from the installation of new power lines and structures?			✓	

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
i) Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?			✓	
j) Expose people to a significant risk of injury or death involving unexploded ordnance?				✓
k) Expose workers or the public to excessive shock hazards?			✓	

This section describes hazards, hazardous materials, and public safety in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.9.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

Numerous utilities (e.g., overhead electric transmission and distribution lines, underground natural gas pipelines, and underground hazardous liquid pipelines) are located throughout the Proposed Project area. Wind development is also located in the vicinity of the Proposed Project.

5.9.1.1 Hazardous Materials Report

Insignia Environmental prepared a Phase I Environmental Site Assessment (ESA) for the Proposed Project substation site in November 2023. The Phase I ESA, which is provided in Attachment 5.9-A: Phase I ESA, was conducted for the site where the proposed LSPGC Collinsville Substation would be located. The objective of the Phase I ESA was to determine the presence or absence of recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs), and historical recognized environmental conditions

(HRECs), as defined by ASTM 1527-21. As part of the Phase I ESA, Environmental Data Resources, Inc. (EDR) conducted a regulatory agency database search within a 1- to 1.25-mile radius of the proposed LSPGC Collinsville Substation. A complete copy of the EDR report, including the date the report was prepared, the date the information was last updated, and the definition of each database searched, is provided in Attachment 5.9-B: EDR Report. Additionally, Insignia reviewed a Stewart Land Title Report, historical aerial photographs, and historical topographic maps of the proposed LSPGC Collinsville Substation property. The results of this Phase I ESA revealed no evidence of RECs, CRECs, or HRECs at the proposed LSPGC Collinsville Substation site.

A Corridor Report, prepared by EDR in September 2023, examined a 1-mile radius surrounding PG&E's existing Pittsburg Substation, the proposed LSPGC 230 kV Overhead Transmission Line, and the proposed PG&E 500 kV Interconnection. EDR reviewed over 140 environmental databases and records. The Corridor Study did not identify any unexploded ordnance (UXO) sites within 1 mile of the Proposed Project. Attachment 5.9-C: Corridor Report also provides maps detailing the locations of the sites identified in the records search.

Additional review of the California Department of Toxic Substances Control's (DTSC's) EnviroStor and the State Water Resources Control Board's (SWRCB's) GeoTracker assessed sites in the vicinity of the proposed LSPGC Telecommunications Line and PG&E 12 kV Distribution Line. The proposed PG&E 12 kV Distribution Line would not cross or be located within the vicinity of any open cases. The nearest open case to the proposed LSPGC Telecommunications Line is the non-operational Mirant Delta Pittsburg Power Plant site, located adjacent to PG&E's existing Pittsburg Substation. The proposed LSPGC Telecommunications Line would parallel the southern edge of the power plant site for approximately 1,700 feet. This site, along with additional open sites identified in the Corridor Study, are summarized in Table 5.9-1: Hazardous Materials Sites in the Proposed Project Area.

5.9.1.2 Airport Land Use Plan

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Transmission Line, and PG&E 500 kV Interconnection would be located approximately 12 miles southeast of Travis Air Force Base (TAFB) and would be located within the airport influence area (AIA) identified in the TAFB Land Use Compatibility Plan (LUCP). The Solano County Airport Land Use Commission (ALUC) is responsible for enforcing the TAFB LUCP, which aims to "ensure that future land uses in the surrounding area remain compatible with the realistically foreseeable, ultimate potential aircraft activity" (Solano County ALUC 2015). The Proposed Project would be in Zone D, where the prohibited uses are those that create hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference. Buildings 200 feet above ground level or higher require review by the ALUC (Solano County ALUC 2015).

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Transmission Line, and PG&E 500 kV Interconnection would be approximately 10 miles southwest of the Rio Vista Municipal Airport and would not be located within the AIA outlined in the Rio Vista Municipal Airport LUCP (Solano County ALUC 2018).

PG&E's existing Pittsburg Substation is approximately 9 miles northeast of the Buchanan Field Airport and is not located within any AIA identified in the Buchanan Field Master Plan (Contra

Costa County Airports Division 2008). Airports in the vicinity of the Proposed Project area shown in Figure 5.9-1: Airports within the Vicinity of the Proposed Project.

5.9.1.3 Fire Hazard

According to the California Board of Forestry and Fire Protection (CAL FIRE), the Proposed Project would be located within a Local Responsibility Area. The nearest State Responsibility Area (SRA) is located approximately 2 miles south of PG&E's existing Pittsburg Substation (California Board of Forestry and Fire Protection 2023).

CAL FIRE classified Fire Hazard Severity Zones (FHSZs) for SRAs throughout the state as either "moderate," "high," or "very high" based on fuel, slope, and fire weather (CAL FIRE 2024). The Proposed Project would not be located within an area designated as an FHSZ. The nearest FHSZ to the Proposed Project, which is designated as high, is located approximately 2 miles southwest of PG&E's existing Pittsburg Substation.

The California Public Utilities Commission (CPUC) created a statewide High Fire Threat District (HFTD) map to show areas where there is an increased risk for utility-associated wildfires (CPUC 2023). The Proposed Project would not be located in an HFTD. The closest HFTD is located approximately 3 miles south of PG&E's existing Pittsburg Substation. Tier 2 FHTDs indicate areas with a higher risk of fire and impacts from utility-related wildfires.

Wildfire hazards are discussed further in Section 5.20 Wildfire.

5.9.1.4 Metallic Objects

A review of the California Governor's Office of Emergency Services (CalOES) Geographic Information System Data Hub and United States (U.S.) Department of Transportation (DOT) National Pipeline Mapping System indicates that the following pipelines are located in the vicinity of the Proposed Project:

- One natural gas pipeline operated by California Gas Transmission is located approximately 1 mile south of PG&E's existing Pittsburg Substation.
- Multiple hazardous liquid pipelines are located approximately 0.4 mile south of PG&E's existing Pittsburg Substation.
- One gas transmission pipeline crosses the Delta and Lower Sherman Island approximately 0.6 mile east of the proposed LSPGC 230 kV Submarine Cable. Additionally, this gas transmission pipeline travels through Solano County, and the proposed LSPGC Collinsville Substation would be approximately 0.5 mile west of the pipeline. The proposed PG&E 500 kV Interconnection would parallel this pipeline along an unnamed access road off Talbert Lane for approximately 0.4 mile.

Table 5.9-1: Hazardous Materials Sites in the Proposed Project Area

Hazardous Materials Sites	Site Type	Database	Record Date	Approximate Distance from the Proposed Project (miles)	Closest Proposed Project Component	Associated Risk	Reason
Mirant Delta Pittsburg Power Plant	Cleanup Program	SWRCB GeoTracker	Not Available	Adjacent to Proposed Project	LSPGC Telecommunications Line	Low Risk	The status of this cleanup site is Open – Verification Monitoring as of May 8, 2009. A monitoring/sampling program is occurring to confirm successful completion of the site cleanup. Potential contaminants of concern include heating oil, fuel oil, other metal, waste oil, motor, hydraulic, or lubricating oil. The potential media of concern is other ground water (uses other than drinking water), sediments, soil, or surface water. An existing land use restriction exists at the non-operational Pittsburg Power Plant site. The land use restriction prohibits the site for use as a permanent or temporary lodging, health care facilities, schools, recreational use, and other public services. The use of groundwater at the site for any domestic or similar purposes is prohibited.
Crown Paints Vacant Lot	Vacant Lot	Superfund Enterprise Management System Archive (SEMS-ARCHIVE)	June 2023	0.2	LSPGC Telecommunications Line	Low Risk	No violations were found in the Corridor Study. The Proposed Project would not cross the site.
Trans Bay Cable Converter Station	Voluntary Clean Up	EnviroStor; Voluntary Cleanup Program Properties (VCP); Deed Restriction Listing (DEED)	April 2023	0.3	LSPGC Telecommunications Line	Low Risk	In 2014, the DTSC concluded that the selected remedial action remained protective of human health and the environment. The Corridor Study did not find recent records of violations or changes in the functioning of remedial actions. The Proposed Project would not cross the site.
NRG Delta, LLC (PG&E Shell Pond/Carbon Black Area and Power Plant)	Corrective Action	EnviroStor; California Environmental Reporting System (CERS) HAZ WASTE (Hazardous Waste); Hazardous Substance Storage Container (HIST UST); CERS Tanks; DEED; California Hazardous Material Incident Report System (CHMIRS); Emissions Inventory Data; Financial Assurance (US FIN ASSUR); Inspection, Compliance and Enforcement; EnviroStor Permitted Facilities Listing (HWP); CERS	April 2023	0.3	LSPGC Telecommunications Line	Low Risk	The Corridor Study did not identify recent violations, and the site returned to compliance in 2005. The site is undergoing corrective action. The Proposed Project would not cross the site.
PG&E Pittsburg Power (PG&E Shell Pond/ Carbon Black Area and Power Plant)	Evaluation	EnviroStor	April 2023	0.3	LSPGC Telecommunications Line	Low Risk	The site is under corrective action as PG&E Shell Pond/Carbon Black Area and Power Plant. The Proposed Project would not cross the site.
PG&E Pittsburg Power (PG&E Shell Pond/ Carbon Black Area and Power Plant)	Toxic Pit	Toxic Pits Cleanup Act Sites	July 1995	0.3	LSPGC Telecommunications Line	Low Risk	The site is under corrective action as PG&E Shell Pond/Carbon Black Area and Power Plant. The Proposed Project would not cross the site.
Pittsburg Generating Station	Resource Conservation and Recovery Act (RCRA)	SEMS; Corrective Action Report List (CORRACTS); RCRA-Treatment, Storage and Disposal (RCRA-TSDF); RCRA-Non Generators/No Longer Regulated; US FIN ASSUR; 2020 Corrective Action	July 2023	0.3	LSPGC Telecommunications Line	Low Risk	The Corridor Study identified the most recent violation as occurring in 2004, and the site is currently undergoing corrective action. The Proposed Project would not cross the site.

Hazardous Materials Sites	Site Type	Database	Record Date	Approximate Distance from the Proposed Project (miles)	Closest Proposed Project Component	Associated Risk	Reason
Sonoco Fibre Drum	RCRA	SEMS-ARCHIVE; CORRACTS; RCRA-Small Quantity Generators; HIST UST; Facility Index System/Facility Registry System	July 2023	0.6	LSPGC Telecommunications Line	Low Risk	The Corridor Study did not find recent records of violations, and the site returned to compliance in 1992. The site is currently undergoing corrective action. The Proposed Project would not cross the site.
Continental Fibre Drum Inc (Greif Brothers Corporation)	Voluntary Cleanup	EnviroStor; Leaking Underground Fuel Tank Report; VCP; HIST UST; DEED; “Cortese" Hazardous Waste & Substances Sites List; Hazardous Waste & Substance Site List; HWP; California Integrated Water Quality System; CERS	April 2023	0.6	LSPGC Telecommunications Line	Low Risk	The site is currently undergoing cleanup, and the Proposed Project would not cross the site.
Willow Pass Site	School	EnviroStor; School Property Evaluation Program	April 2023	0.8	PG&E’s existing Pittsburg Substation	Low Risk	The site is currently unused vacant land, and the Proposed Project would not cross the site.

Sources: Contra Costa County 1999; EDR 2023; DTSC 2023b, 2023c, 2023d; SWRCB 2023a, 2023b.

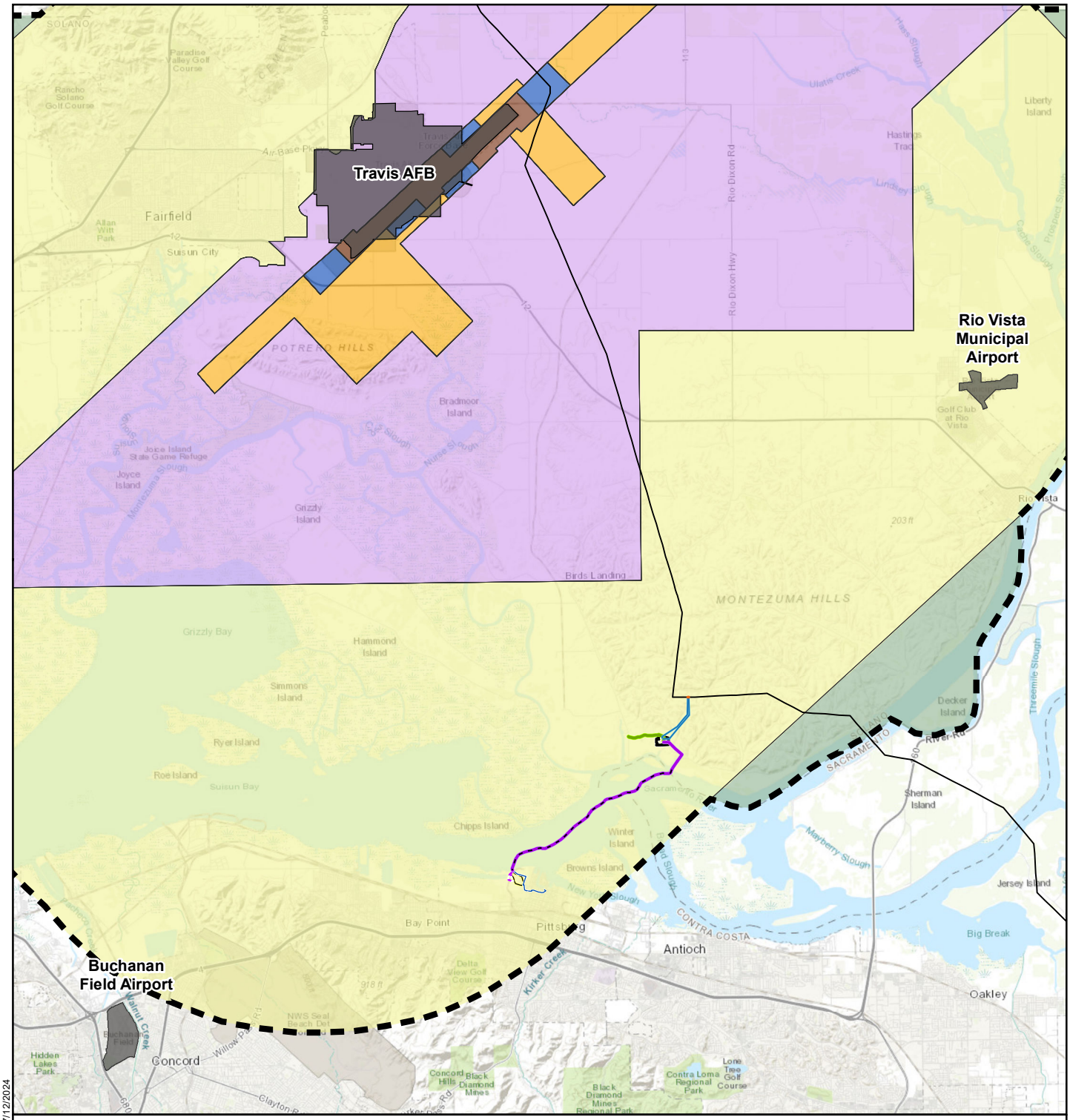

Figure 5.9-1: Airports within the Vicinity of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

Zone Classifications

- A
- B1
- B2
- C
- D
- E

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Proposed LSPGC Telecommunications Line
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- Airport
- Airport Influence Area

1:200,000

0 8,000 16,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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According to the California Energy Commission's (CEC's) California Electric Infrastructure maps, the southern portion of the proposed LSPGC 230 kV Underground Segment would cross an underground segment of the Trans Bay Cable, an operational single-circuit direct current 200 kV underwater transmission line (CEC 2023). The Trans Bay Cable exits the water and connects to PG&E's existing Pittsburg Substation. The Proposed Project would connect to PG&E's existing Pittsburg Substation, where there are an additional eight operational overhead transmission lines connected, including four double-circuit 230 kV and four double-circuit 115 kV lines. North of the Sacramento River, the proposed PG&E 500 kV Interconnection would connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line (CEC 2023).

5.9.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Project.

5.9.2.1 Regulatory Setting

5.9.2.1.1 Federal

Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S. Code [U.S.C.] § 9601 et seq.) provides a federal Superfund to clean up uncontrolled or abandoned hazardous waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, the U.S. Environmental Protection Agency (EPA) has the power to seek out those parties responsible for a release and ensure their cooperation in the cleanup.

The Superfund Amendments and Reauthorization Act of 1986 Title III

The Superfund Amendments and Reauthorization Act (SARA) (40 Code of Federal Regulations [CFR] § 68.110 et seq.) The SARA requires states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. Additionally, the SARA identifies requirements for planning, reporting, and notification concerning hazardous materials.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act to create a framework for state, local, tribal, and territorial governments to plan for hazard mitigation and receive non-emergency disaster relief (Federal Emergency Management Agency [FEMA] 2023). The following is the intent of a hazard mitigation plan (HMP):

1. Gather hazard, vulnerability, and mitigation information from the local level for use in state-level planning;

2. Ensure that state and local hazard mitigation planning is coordinated to the greatest extent practical; and

3. Ensure that local jurisdictions are made aware of the hazards and vulnerabilities within their jurisdiction and to develop strategies to reduce those vulnerabilities (Cal OES 2023a).

California's 2018 State Hazard Mitigation Plan (SHMP) is the state's primary hazard mitigation guidance document. The 2018 SHMP continues to build upon the state's commitment to reduce or eliminate potential risks and impacts of natural and human-caused disasters to help communities with their mitigation and disaster resiliency efforts. The 2018 SHMP includes an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated state hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies. FEMA approved California's 2018 SHMP on September 28, 2018.

Clean Air Act

The Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.) provides measures aimed at preventing the accidental release of hazardous materials into the atmosphere. Regulations implementing the CAA and governing hazardous materials emissions are provided in Title 40, Part 68 of the CFR. Implementation of these regulations is intended to prevent the accidental release of hazardous materials into the environment.

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. § 1251 et seq.) is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The U.S. EPA and the U.S. Army Corps of Engineers implement provisions of the CWA through a variety of regulations, including the National Contingency Plan and the Oil Pollution and Prevention Regulations.

Resource Conservation and Recovery Act

Under the Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. § 6901 et seq.), individual states may implement their own hazardous waste programs in lieu of the RCRA as long as the state program is at least as stringent as the federal RCRA requirements (U.S. EPA 2023b). The RCRA regulates hazardous waste from the time that waste is generated until its final disposal through management, storage, transport, and treatment. The federal government approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. In California, the RCRA program is administered by the DTSC under the direction of the U.S. EPA.

Hazardous Materials Transportation Act

The U.S. DOT has the regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA). The HMTA authorizes the Secretary of Transportation to designate a commodity as a hazardous material if the transportation of a commodity of a particular quantity and form poses an unreasonable risk to the health and safety or property of the public. The regulations identifying various commodities as

hazardous materials and specifying the requirements for their transport are codified in Title 49, Parts 100 to 185 of the CFR (U.S. DOT 2023a).

Code of Federal Regulations

Title 14, Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

Title 14, Part 77 of the CFR establishes the following:

- Requirements to provide notice to the Federal Aviation Administration (FAA) of certain proposed construction, or the alteration of existing structures;
- The standards used to determine obstructions to air navigation, and navigational and communication facilities;
- The process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace and air navigation facilities or equipment; and
- The process to petition the FAA for discretionary review of determinations, revisions, and extensions of determinations.

Title 14, Section 133.33 Operating Rules

Title 14, Section 133.33(d) of the CFR states the following regarding rotor craft external-load operations over congested areas:

> "Notwithstanding the provisions of part 91 of this chapter, the holder of a Rotorcraft External-Load Operator Certificate may conduct (in rotorcraft type certificated under and meeting the requirements of part 27 or 29 of this chapter, including the external-load attaching means) rotorcraft external-load operations over congested areas if those operations are conducted without hazard to persons or property on the surface and comply with the following:
>
> (1) The operator must develop a plan for each complete operation, coordinate this plan with the responsible Flight Standards office for the area in which the operation will be conducted, and obtain approval for the operation from that office. The plan must include an agreement with the appropriate political subdivision that local officials will exclude unauthorized persons from the area in which the operation will be conducted, coordination with air traffic control, if necessary, and a detailed chart depicting the flight routes and altitudes.
>
> (2) Each flight must be conducted at an altitude, and on a route, that will allow a jettisonable external load to be released, and the rotorcraft landed, in an emergency without hazard to persons or property on the surface."

5.9.2.1.2 State

Hazardous Waste Control Law

The HWCL (California Health and Safety Code [HSC], Chapter 6.5, § 25100 et seq.) authorizes the DTSC to regulate the generation, transportation, treatment, storage, and disposal of hazardous wastes (State of California 2023). The DTSC can also delegate enforcement responsibilities to local jurisdictions that enter into agreements with the DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

Carpenter-Presley-Tanner Hazardous Substance Account Act

The Carpenter-Presley-Tanner Hazardous Substance Account Act (HSAA) (California HSC, Chapter 6.8, § 25300 et seq.) is California's equivalent to CERCLA (State of California 2023). The Carpenter-Presley-Tanner HSAA addresses hazardous waste sites and apportions liability for them. The Carpenter-Presley-Tanner HSAA also states that owners are responsible for the cleanup of such sites and the removal of toxic substances, where possible. The two state agencies with primary responsibility for enforcing federal and state regulations related to hazardous material transport and responding to hazardous materials transportation emergencies are the California Highway Patrol and California Department of Transportation, respectively. Assembly Bill (AB) 2327, signed into law in September 2022, requests the California Law Revision Commission to recommend revisions to the Carpenter-Presley-Tanner HSAA to improve the organization and expression of law. Pursuant to this request, the commission has made recommendations for the recodification of the Carpenter-Presley-Tanner HSAA. The statute will make changes to provisions of law that reference the act or provisions in the act. The statute will become operative on January 1, 2024, along with the recodification of the Carpenter-Presley-Tanner HSAA (State of California 2022).

Assembly Bill 38

Under AB 38, the California Emergency Management Agency (Cal EMA) was formed January 1, 2009 as the result of a merger between the Cal OES and the Office of Homeland Security (Cal OES 2019). In 2013, the Governor's Reorganization Plan #2 restored Cal EMA to the Governor's Office, renamed it Cal OES, and merged it with the Office of Public Safety Communications (Cal OES 2023c). The Hazardous Materials Division of Cal OES coordinates the statewide implementation of hazardous materials accident prevention and emergency response programs for hazardous materials incidents and threats (Cal OES 2023b).

California Code of Regulations Title 27, Division 1, Subdivision 4, Chapter 1

The California Environmental Protection Agency (CalEPA) has implementation authority for the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) per California Code of Regulations (CCR) Title 27, Division 1, Subdivision 4, Chapter 1. The Enforcement and Emergency Response Division of the DTSC administers the technical implementation of the Unified Program, a consolidation of multiple environmental and emergency management programs that protect Californians from hazardous waste and hazardous materials by ensuring local regulatory agencies consistently apply statewide standards. The Unified Program requires CalEPA to certify local government agencies (i.e., Certified Unified Program Agencies [CUPAs]) (CalEPA 2023a). The Solano County Environmental Health Services Division is the certified CUPA for Solano County, the Sacramento County

Environmental Management Department is the certified CUPA for Sacramento County, and the Contra Costa County Health Services Department is the certified CUPA for Contra Costa County (CalEPA 2015).

California Government Code Section 65962.5(a)

Under California Government Code Section 65962.5(a), the DTSC is required to submit to the Secretary for Environmental Protection a list (i.e., the Cortese List) of all hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the California HSC and all land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the California HSC. The DTSC is required to update this list as appropriate and at least annually.

California Occupational Safety and Health Act of 1973

The Occupational Safety and Health Act of 1973 established the Division of California Occupational Safety and Health (Cal/OSHA). Cal/OSHA protects workers and the public from safety hazards, including asbestos and lead-based materials (CCR Title 8). Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including requirements for employee safety training; availability of safety equipment; accident and illness prevention programs; hazardous substance exposure warnings; and preparation of emergency action and Construction Fire Prevention Plans (CFPPs).

Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances, and requires that safety data sheets (formerly known as material safety data sheets) be available for employee information and training programs. Cal/OSHA standards are generally more stringent than federal regulations. Construction workers and operational employees within the Proposed Project alignment would be subject to these requirements.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) (California Water Code, Division 7) is the provision of the California Water Code that regulates water quality in California and authorizes the SWRCB and nine Regional Water Quality Control Boards (RWQCBs) to implement and enforce the regulations. The RWQCBs regulate discharges under Porter-Cologne primarily through the issuance of waste discharge requirements. Anyone discharging or proposing to discharge materials that could affect water quality must file a report of waste discharge. The SWRCB and the RWQCBs can make their own investigations or may require dischargers to carry out water quality investigations and report on water quality issues. Porter-Cologne provides several means of enforcement, including cease and desist orders, cleanup and abatement orders, administrative civil liability orders, civil court actions, and criminal prosecution. As a result of Porter-Cologne, the San Francisco Bay RWQCB and Central Valley RWQCB are the regulatory oversight agencies for hazardous material release cases that impact groundwater in the Proposed Project area.

California Public Utilities Commission General Order 95

CPUC General Order (GO) 95 contains requirements and specifications for overhead electrical line construction. These requirements are intended to ensure the safety of workers engaged in the construction, O&M, and use of electrical facilities. The regulations are also intended to ensure the general reliability of the state's utility infrastructure and services. Rule 35 of GO 95 establishes minimum clearances between line conductors and nearby vegetation for fire prevention purposes. These minimum clearances must be maintained through tree trimming prior to construction and throughout O&M of utility facilities.

California Public Utilities Commission General Order 166

The purpose of the standards contained in CPUC GO 166 is to ensure that jurisdictional electric utilities are prepared for emergencies and disasters to minimize damage and inconvenience to the public that may occur as a result of electric system failures, major outages, or hazards posed by damage to electric distribution facilities. The standards require that each jurisdictional electric utility must prepare an emergency response plan and update the plan annually, conduct annual emergency training and exercises using the utilities emergency response plan, and coordinate emergency plans with state and local public safety agencies.

Public Resources Code Sections 4292 and 4293

Public Resources Code (PRC) Section 4292 requires a 10-foot clearance of any tree branches or ground vegetation from around the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC Section 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole. Section 4293 presents guidelines for line clearance, including a minimum of 10 feet of vegetation clearance from any conductor operating at 110 kV or higher.

California Public Utilities Commission Fire Safety Rulemaking Background

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the CPUC initiated Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead power line facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in R.08-11-005 that together adopted dozens of new fire safety regulations. Most of the adopted fire safety regulations consisted of new or revised rules in GO 95. Several of the adopted fire safety regulations apply only to high fire threat areas, or areas where there is an elevated risk for power line fires igniting and spreading rapidly. These high fire threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps covers a different part of the state and uses its own methodology for identifying high fire threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire threat map to designate areas where there is an elevated risk for destructive power line fires and where stricter fire safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated its successor, R.15-05-006, to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: develop and adopt a statewide fire-threat map that delineates the boundaries of a new HFTD where the previously adopted regulations will apply; determine the need for additional fire safety regulations in the HFTD; and revise GO 95 to include a definition and maps of the HFTD, as well as any new fire safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire safety regulations in the HFTD.

On December 21, 2017, the CPUC issued Decision 17-12-024 to adopt regulations to enhance fire safety in the HFTD, effectively completing the second track of R.15-05-006 described previously. On January 19, 2018, the CPUC adopted the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones (HHZs) on the U.S. Forest Service-CAL FIRE joint map of tree mortality HHZs, comprise the HFTD Map where stricter fire safety regulations apply.

Public Resources Code Sections 4201-4204

PRC Sections 4201 to 4204 require the following:

- The classification of lands within SRAs in accordance with the severity of fire hazard present for the purpose of identifying measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.

- The classification of lands within SRAs into FHSZs. Each zone will embrace relatively homogeneous lands and be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by CAL FIRE as a major cause of wildfire spread.

- The designation of FHSZs and assignation to each zone a rating reflecting the degree of severity of fire hazard that is expected to prevail in the zone.

- The periodic review of zones designated and, as necessary, the revision of zones or their ratings or repeal the designation of zones.

California Health and Safety Code Section 13009

California HSC Section 13009 permits CAL FIRE to file civil actions to recover fire suppression costs from a party who causes a fire negligently, or in violation of a law or an order to correct a fire hazard. CAL FIRE established a Civil Cost Recovery Program to satisfy the statute's intent to assign financial responsibility to culpable parties and to prevent fires through deterrence.

California Fire Code

The California Fire Code (24 CCR 9) is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire,

explosion, or dangerous conditions in new or existing buildings, structures, and premises (California Building Standards Commission 2022).

Title 24, Part 9 of the CCR outlines requirements for the Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) of the Unified Program. The HMMP and HMIS provide vital facility chemical and emergency response information to regulators, first responders, and the public. Facilities storing greater than 500 pounds of solids, 55 gallons of liquids, or 200 cubic feet at Normal Temperature and Pressure (NTP) of compressed gases must prepare and submit an HMMP per the requirements in Title 24, Part 9 of the CCR. Facilities that store 500 pounds of solids or less, 55 gallons of liquids or less, or 200 cubic feet at NTP of compressed gas or less are permitted to file a short-form HMMP in accordance with the components outlined in Title 24, Part 9 of the CCR. An HMIS is required for each building and each exterior facility where hazardous materials are stored.

5.9.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County

Solano County Emergency Operations Plan

The 2017 Solano County Emergency Operations Plan (EOP) "addresses Solano County's planned response to extraordinary emergency situations associated with natural, technological and human caused emergencies or disasters within or affecting Solano County" (Solano County 2017). The EOP provides an overview of existing hazards Solano County is susceptible to and reviews the county's established operations that aim to effectively address impacts associated with hazards.

Solano County Multi-Jurisdictional Hazard Mitigation Plan

The 2022 Solano County Multi-Jurisdictional HMP includes a risk assessment of hazards in Solano County and mitigation strategies to reduce the effects of those hazards. The high-priority hazards identified in the HMP include climate change, drought, earthquake, high winds, extreme weather, slope failure, and wildfire. One essential goal of the Solano County Multi-Jurisdictional HMP is to "minimize damage to critical infrastructure and property and minimize interruption of essential services and activities" (Solano County 2022).

Sacramento County

Sacramento County Emergency Operations Plan

The 2022 Sacramento County EOP serves as the "principal guide for the County's response, management, and recovery from real or potential emergencies and disasters within its designated geographic boundaries" (Sacramento County 2022). The EOP guides the county's response to large-scale disasters and extraordinary emergency situations. The EOP summarizes the existing hazards in Sacramento County, identifies the county's capability of responding to hazards, and reviews mitigation measures to reduce the impacts of hazards.

Sacramento County Multi-Jurisdictional Local Hazard Mitigation Plan

The 2021 Sacramento County Multi-Jurisdictional Local HMP presents goals and actions to reduce or eliminate the impacts of hazards on people and property. The HMP assesses the existing hazards in the county and identifies the hazards most likely to occur, which include floods from localized storm water, severe weather conditions, subsidence, and wildfire. One of the primary goals of the Sacramento County Multi-Jurisdictional Local HMP is to "provide protection for critical facilities, infrastructure, utilities, and services from hazard impacts, to include hardening and other efforts to establish redundancy and reliability, to prevent or minimize loss, and to facilitate recovery" (Sacramento County 2021).

Contra Costa County

Contra Costa County Emergency Operations Plan

The 2015 Contra Costa County EOP provides "the basis for a coordinated response before, during and after an emergency affecting Contra Costa County" (Contra Costa County 2015). The EOP guides the county's response to large-scale disasters and extraordinary emergency situations and identifies the mechanisms in place to effectively respond to natural hazards in Contra Costa County, such as earthquakes, landslides, and floods. The Contra Costa County EOP covers the City of Pittsburg.

Contra Costa County Hazard Mitigation Plan

The 2018 Contra Costa County HMP identifies "long-term and short-term policies, programs, projects, and other activities to alleviate death, injury, and property damage that can result from a disaster" (Contra Costa County 2018). The HMP assigns ranks to natural hazards in Contra Costa County, with the highest-ranked hazards being earthquakes and landslides. The HMP stresses the importance of protecting utilities, including transmission lines, from damage associated with natural hazards to ensure essential services remain available to Contra Costa County residents during disasters. The Contra Costa County HMP covers the City of Pittsburg.

5.9.2.2 Touch Thresholds

5.9.2.2.1 California Division of Occupational Safety and Health

Cal/OSHA regulations on electrical safety require California employers to provide workers with a safe and healthful workplace. These regulations are contained in Title 8 of the CCR. Most of the electrical health and safety regulations are provided in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2299 through 2989.

Cal/OSHA regulations on electrical safety are grouped by electrical voltage. Regulations for low voltage (i.e., up to 600 volts) are provided in Sections 2299 to 2599 of the CCR, and the regulations for high voltage (i.e., above 600 volts) are in Sections 2700 to 2989. Section 1518 addresses the safety requirements for the protection of workers and others from electric shock in construction.

5.9.3 Impact Questions

5.9.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For hazards, hazardous materials, and public safety, the CEQA Environmental Checklist asks if the Proposed Project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

5.9.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA impact questions are required for hazards, hazardous materials, and public safety. Would the Proposed Project:

- Create a significant hazard to air traffic from the installation of new power lines and structures?
- Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?

- Expose people to a significant risk of injury or death involving unexploded ordnance?
- Expose workers or the public to excessive shock hazards?

5.9.4 Impact Analysis

5.9.4.1 Hazards, Hazardous Materials, and Public Safety Impact Analysis

5.9.4.1.1 Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

LSPGC Components

Less-than-Significant Impact. Construction of the LSPGC Proposed Project components would require the use of diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and chemicals associated with vehicles and construction activities. If improperly used, transported, stored, or disposed of, such materials have the potential to create a significant hazard to the public or environment. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. A Spill Prevention, Control, and Countermeasure Plan (SPCCP) would be prepared in accordance with Title 40, Parts 112.1 to 112.7 of the CFR. Additionally, in accordance with Title 24, Part 9 of the CCR, an HMMP describing hazardous materials use, transport, storage, management, and disposal protocols would be prepared.

Because the LSPGC Proposed Project components would involve more than 1 acre of soil disturbance, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared, as required by the state National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activity. This plan would be prepared in accordance with the SWRCB guidelines and other applicable erosion and sediment control best management practices (BMPs). The SWPPP would include checklists for hazardous materials used on site and BMPs, such as the use of drip pans for construction equipment, as well as spill reporting procedures.

Implementation of the SPCCP, HMMP, and SWPPP in accordance with the applicable regulations would minimize the risk of a release of hazardous substances and ensure that a significant hazard to the public or the environment would not result in the event of a release. As a result, the impact would be less than significant.

PG&E Components

Less-than-Significant Impact. Construction of the PG&E Proposed Project components would require the use of diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and chemicals associated with vehicles and construction activities. If improperly used, transported, stored, or disposed of, such materials have the potential to create a significant hazard to the public or environment. However, PG&E would handle, store, and dispose of hazardous materials and hazardous wastes in accordance with all applicable regulations. Furthermore, PG&E would implement Construction Measure (CM) HAZ-1, establishing site-specific buffers for construction vehicles and equipment near sensitive

resources, reporting hazardous material spills, and stopping work and contacting the appropriate authorities if visual contamination or chemical odors are detected. Implementation of PG&E's CM HAZ-2 would ensure that crews receive worker environmental awareness training on types of hazardous substances and materials and applicable regulations.

Because the PG&E Proposed Project components would involve more than 1 acre of soil disturbance, a SWPPP would be prepared, as required by the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. This plan would be prepared in accordance with the SWRCB guidelines and other applicable erosion and sediment control BMPs. The SWPPP would include checklists for hazardous materials used on site and BMPs, such as the use of drip pans for construction equipment, as well as spill reporting procedures.

Implementation of CMs HAZ-1 and HAZ-2 and the SWPPP would minimize the risk of a release of hazardous substances and ensure that a significant hazard to the public or the environment would not result in the event of a release. As a result, the impact would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. The LSPGC Proposed Project components would include design specifications and O&M procedures that minimize the potential for the release or improper disposal of hazardous materials. Each of the seven transformers would contain approximately 28,000 gallons of mineral oil; and each transformer would have an oil-containment system consisting of an impervious, lined, open, or stone-filled sump area around the transformer to capture any leaks should they occur. The proposed LSPGC Collinsville Substation would also be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Secondary containment would be constructed around and under the battery racks, and the HMMP would address containment from a battery leak.

Maintenance activities would occur regularly at the LSPGC Proposed Project component facilities. These activities may include use of new pollutant sources, including oils, paints, and solvents used for routine maintenance. All materials used during O&M would be applied, stored, and disposed of by licensed professionals and in accordance with applicable regulations and manufacturer recommendations. Further, an HMMP would be prepared for operations of the substation, in accordance with Title 24, Part 9 of the CCR. Implementation of standard operational BMPs consistent with the HMMP would further reduce potential hazards to the public or the environment. BMPs include maintaining spill kits, avoiding the storage of hazardous materials on or near work areas, storing hazardous materials within secondary containment, and fueling and servicing vehicles off site. Therefore, the impact would be less than significant.

PG&E Components

No Impact. PG&E maintains existing transmission facilities in the Proposed Project vicinity. Maintenance activities would continue as they currently do and would not change in terms of hazards to the public or environment. All materials used during O&M would be utilized, stored,

and disposed of by licensed professionals and in accordance with applicable regulations and manufacturer recommendations. Therefore, there would be no impact.

5.9.4.1.2 Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

LSPGC Components

Less-than-Significant Impact. Exposure and release of existing hazardous materials during construction has the potential to impact on-site workers, the public, or the environment through direct contact, off-site transport, or improper disposal. As previously described in Section 5.9.1.1 Hazardous Materials Report, the findings of the Phase I ESA revealed no RECs, HRECs, or CRECs in connection with the proposed Collinsville Substation property. In addition, a review of GeoTracker and EnviroStor databases for the LSPGC Telecommunications Line—as well as the Corridor Study encompassing the proposed LSPGC 230 kV Overhead Segment—revealed no hazardous materials sites that would pose a risk to human health or the environment. The implementation of the HMMP and SPCCP, which would include protocols for the handling of discovered hazardous waste materials, would reduce the risk to human health or the environment.

Construction crews would maintain spill kits on site to respond to potential releases of hazardous materials. Furthermore, applicant-proposed measure (APM) BIO-3 would require the development and implementation of a Worker's Environmental Awareness Program (WEAP) training that would include the identification of potentially hazardous wastes, identification of stained and odiferous soils, and proper storage of hazardous materials. Should stained or odiferous soils be identified during construction, workers would notify the environmental manager, and contaminated media would be tested and disposed of in accordance with federal and state regulations. With the implementation of the HMMP and APM BIO-3, the impact would be less than significant.

PG&E Components

Less-than-Significant Impact. A review of GeoTracker and EnviroStor databases—as well as the Corridor Study encompassing the proposed PG&E 500 kV Interconnection and PG&E's existing Pittsburg Substation—revealed no hazardous materials sites in the area of the PG&E Proposed Project components that would pose a risk to human health or the environment. PG&E would implement CM HAZ-1 to ensure the safe handling of hazardous materials during construction and minimize the risk. CM HAZ-2 would ensure that crews receive worker environmental awareness training on types of hazardous substances and materials and applicable regulations. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. The Proposed Project's design specifications (e.g., secondary containment for the seven transformers) and O&M procedures would minimize the potential for the release of hazardous materials, specifically from the mineral oil contained in the transformers. Minor drips and spills from maintenance vehicles and refueling are unlikely, but can occur. Any spills would be immediately cleaned up and the materials would be properly disposed of. Therefore, the impact would be less than significant.

PG&E Components

Less-than-Significant Impact. PG&E maintains existing transmission facilities in the Proposed Project vicinity. Maintenance activities would continue as they currently do and would not change. Should a release occur from a maintenance vehicle, it would be small in volume and immediately cleaned up. As a result, O&M of the PG&E Proposed Project components would not create a significant hazard to the public or the environment, and the impact would be less than significant.

5.9.4.1.3 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Construction, Operations and Maintenance

LSPGC Components

No Impact. As part of the Proposed Project, the proposed LSPGC Telecommunications Line would be routed underground along Halsey Way adjacent to St. Peter Martyr School. Use of hazardous materials or substances is not anticipated during installation of the telecommunications line. Furthermore, implementation of APM-PUB 1 would schedule construction during the summer months when school is not in session. The proposed LSPGC Collinsville Substation and LSPGC 230 kV Transmission Line would not be located within 0.25 mile of an existing or proposed school. Therefore, no impact would occur.

PG&E Components

No Impact. The PG&E Proposed Project components would not be within 0.25 mile of an existing or proposed school. Therefore, no impact would occur.

5.9.4.1.4 Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. According to the Phase I ESA, the Corridor Report, and a review of the GeoTracker and EnviroStor databases, the LSPGC and PG&E Proposed Project components would not be located on a known hazardous material site. Therefore, no impact would occur.

5.9.4.1.5 For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components would be located within Zone D of the TAFB LUCP. Zone D prohibits land uses that would create hazards to flight, including physical, visual, and electronic forms of inference. The LSPGC and PG&E Proposed Project components would not create a physical hazard to flight as heights of structures along the transmission lines would be under 200 feet above ground level. Screening of the LSPGC and PG&E Proposed Project components using the FAA Notice Criteria Tool concluded that no LSPGC or PG&E Proposed Project components would pose a hazard to air navigation, and the results are contained in Attachment 5.9-D: FAA Notice and Criteria Tool Results. Although not anticipated, if the height of cranes used during construction reaches 200 feet or higher above ground level, the appropriate noticing would be filed with the FAA, and the Proposed Project would adhere to all FAA recommendations. The LSPGC and PG&E Proposed Project components would be built within existing or to-be-acquired right-of-way, and all construction activities would be performed at a distance from airport activity sufficient to minimize safety concerns to construction personnel. The LSPGC and PG&E Proposed Project components would be located in the vicinity of a few existing residences north of the Sacramento River, and adherence to FAA recommendations would minimize the risk of aircraft-related hazards that could impact residents in the area. Therefore, the impact would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. O&M of the LSPGC Proposed Project components would not create physical, visual, or electronic forms of interference to aircraft flight. The proposed substation would be operated and monitored remotely from LSPGC's control center in Austin, Texas. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted. A small, specialized team would be utilized to perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. Maintenance and inspections would not pose a hazard to air traffic as the activities would be generally conducted below 200 feet, and should helicopters be used, they would be operated in accordance with applicable regulations and safety standards. Neither maintenance nor inspections would require activities that would pose a risk to aircraft flight. In addition, existing wind turbines in the area far exceed the height of the Proposed Project structures. Furthermore, the Proposed Project would be located in Zone D of the TAFB LUCP, approximately 10 miles southeast of the TAFB property. Therefore, the impact would be less than significant.

PG&E Components

No Impact. PG&E maintains existing transmission facilities in the Proposed Project vicinity. Maintenance activities would continue as they currently do and would not change. PG&E would continue to ensure that O&M activities would not result in a safety hazard related to airports. Therefore, no impact would occur.

5.9.4.1.6 Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. An impact to emergency response or emergency evacuation plans could occur if the LSPGC and PG&E Proposed Project components hindered ingress and egress, altered emergency response times, or prevented the implementation of the plans. Construction of the LSPGC and PG&E Proposed Project components would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. As described in Section 5.9.2 Regulatory Setting, the EOPs for Solano County, Sacramento County, and Contra Costa County serve as guidance for responding to large-scale disasters and extraordinary emergency situations. The plans do not describe or recommend specific evacuation routes within the counties. Given the LSPGC and PG&E Proposed Project components' location in a sparsely populated region of Solano County and Sacramento County, the Proposed Project would not likely impact the implementation of the Solano County EOP or Sacramento County EOP. Due to the limited scope of construction in the vicinity of PG&E's existing Pittsburg Substation, implementation of the Contra Costa County EOP would not be impacted.

Installation of the proposed LSPGC Telecommunications Line may require temporary lane closures. Temporary closures would be coordinated with local jurisdictions and emergency service providers through the encroachment permit process and any required traffic control plans. It is anticipated that these permits would require the application of appropriate traffic control measures and implementation of a traffic control plan during this work to ensure that potential changes to emergency service ratios would be minimized and ingress and egress would be maintained. Therefore, the impact would be less than significant.

As described in Section 5.15 Public Services, the LSPGC and PG&E Proposed Project components would have a less-than-significant impact on service ratios, response times, or other objectives for public services in the area. Fire, emergency, and police services currently serve, and would continue to serve, the areas where the new Proposed Project facilities would be located.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. O&M activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As discussed previously, the LSPGC and PG&E Proposed Project components would be operated and monitored remotely.

Routine maintenance activities would likely not impair the implementation of or physically interfere with the counties' EOPs due to the small crew size and frequency of dispatch. PG&E's current maintenance practices in the Proposed Project vicinity would remain the same and would not change in a manner that could interfere with the EOPs. Therefore, there would be no impact.

5.9.4.1.7 Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Construction

LSPGC Components

Less-than-Significant Impact. As previously discussed, the LSPGC Proposed Project components would not be located within a CAL FIRE FHSZ. Furthermore, they would not be located in a CPUC-designated HFTD. High heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. Other potential fire hazards include worker behavior, such as smoking and disposing of cigarettes or parking vehicles on dry vegetation. However, vegetation in the Proposed Project would be cleared or trimmed in accordance with CPUC GO 95 and relevant PRC sections. Vehicles and equipment would primarily use existing roads. Furthermore, the potential for wildfires to be initiated by construction would be reduced through the implementation of APM FIRE-1, which requires the development of a Proposed Project-specific CFPP outlining procedures for fire reporting, response, and prevention, as well as crew training and coordination with federal and local fire officials.

Based on the CAL FIRE FHSZ in proximity to the LSPGC Proposed Project components, construction personnel could be exposed to a wildland fire during construction. Risk to personnel would most likely come from the inability to avoid or escape a wildland fire. Lane closures associated with the installation of telecommunications cables would be limited and of short duration. Furthermore, as described in Section 5.20 Wildfire, no roads in the vicinity of the LSPGC Proposed Project components lack a secondary means of egress. Temporary lane closures during construction would be coordinated with local jurisdictions and emergency service providers through the encroachment permit process, and any required traffic control plans to ensure that potential changes to emergency service ratios would be minimized and ingress and egress would be maintained. Standard fire prevention protocols would be implemented during construction activities in compliance with applicable laws and regulations. As a result, the impact would be less than significant.

PG&E Components

Less-than-Significant Impact. As previously discussed, the PG&E Proposed Project components would not be located within a CAL FIRE FHSZ. Furthermore, they would not be located in a CPUC-designated HFTD. High heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. Other potential fire hazards include worker behavior, such as smoking and disposing of cigarettes or parking vehicles on dry vegetation. However, vegetation in the Proposed Project would be cleared or trimmed in accordance with CPUC GO 95 and relevant PRC sections. Vehicles and equipment would primarily use existing roads. Furthermore, PG&E would follow its standard fire risk management procedures, in accordance with CM FIRE-1, to reduce the potential for wildfires to be initiated by construction.

Based on the CAL FIRE FHSZ in proximity PG&E Proposed Project components, construction personnel could be exposed to a wildland fire during construction. Risk to personnel would most likely come from the inability to avoid or escape a wildland fire. Lane closures associated with the installation of telecommunications cables would be limited and of short duration. Furthermore, as described in Section 5.20 Wildfire, no roads in the vicinity of the PG&E Proposed Project components lack a secondary means of egress. Temporary lane closures during construction would be coordinated with local jurisdictions and emergency service providers through the encroachment permit process, and any required traffic control plans to ensure that potential changes to emergency service ratios would be minimized and ingress and egress would be maintained. Standard fire prevention protocols would be implemented during construction activities in compliance with applicable laws and regulations. As a result, the impact would be less than significant

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As previously discussed, the Proposed Project would be unmanned, and the proposed LSPGC Collinsville Substation would require quarterly inspections. A small, specialized team would be utilized to perform more extensive maintenance activities. Maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year. These activities would not involve any high fire risk activities, and O&M personnel would follow all applicable state and federal regulations. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance activities. Risk of wildland fires would be further reduced by implementation of the CFPP and practices, as discussed in Section 5.20 Wildfire. These actions would ensure wildfire risks remain less than significant.

PG&E Components

Less-than-Significant Impact. Maintenance and regular inspections of the PG&E Proposed Project components would not involve any high fire risk activities, and O&M personnel would follow all applicable state and federal regulations. PG&E's O&M practices would remain consistent with O&M practices that PG&E already implements in the area and in compliance with PG&E's CFPP and fire prevention practices. Therefore, the impact would be less than significant.

5.9.4.1.8 Would the project create a significant hazard to air traffic from the installation of new power lines and structures?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As previously discussed in Section 5.9.4 Impact Analysis, the LSPGC and PG&E Proposed Project components would be located in Zone D of the TAFB ALUCP. An impact to air traffic could occur if the construction of structures and power lines caused an aircraft accident or created dangerous conditions for the operation of an aircraft. Prior to construction, LSPGC would submit the required Notice of Proposed Construction or Alteration to the FAA pursuant to Title 14, Section 77.9 of the CFR. Screening of the LSPGC

and PG&E Proposed Project components using the FAA Notice Criteria Tool concluded that no LSPGC or PG&E Proposed Project components would pose a hazard to air navigation, and the results are contained in Attachment 5.9-D: FAA Notice and Criteria Tool Results. Although not anticipated, if the height of cranes used during construction reaches 200 feet or higher above ground level, the appropriate noticing would be filed with the FAA, and the Proposed Project would adhere to all FAA recommendations. Furthermore, numerous wind turbines exist in the vicinity of the Proposed Project that are significantly taller than the LSPGC and PG&E Proposed Project components, and thus it is unlikely that the addition of infrastructure of a lesser height would pose a hazard to TAFB or other aircraft operations. Therefore, the impact would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As previously discussed, the LSPGC and PG&E Proposed Project components would be unmanned but would require periodic maintenance and regular inspections. The nature of the inspections and maintenance would not pose a hazard to air traffic, and the O&M activities would be similar in nature to those already occurring in the Proposed Project area. Therefore, the impact on air traffic would be less than significant.

5.9.4.1.9 Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?

Construction

LSPGC Components

Less-than-Significant Impact. Both light- and heavy-duty helicopters may be used in support of construction of the LSPGC Proposed Project components. Light-duty helicopter loads would typically be limited to construction crew members; portable equipment; construction materials; and material during the stringing process, including conductors and sock lines. Heavy-duty helicopter loads may include portions of or complete structures. LSPGC would implement APM HAZ-1, which requires complying with all applicable FAA regulations, coordinating helicopter operations with local airports before and during construction of LSPGC Proposed Project components, and managing helicopter use and landing zones to minimize impacts on local residents. Helicopter flight paths would avoid residences or other occupied areas. As part of the Proposed Project and in coordination with and to be approved by the FAA Flight Standards District Office, LSPGC would develop and implement a Helicopter Use and Safety Plan in accordance with Title 14, Parts 77 and 133 of the CFR. Through these activities and agency coordination, the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters would be reduced, and the impact would be less than significant.

PG&E Components

Less-than-Significant Impact. Both light- and heavy-duty helicopters may be used in support of construction of the PG&E Proposed Project components. Light-duty helicopter loads would typically be limited to construction crew members; portable equipment; construction materials;

and material during the stringing process, including conductors and sock lines. Heavy-duty helicopter loads may include portions of or complete structures. To minimize impacts on local residents, PG&E would implement CM HAZ-3, which requires complying with all applicable FAA regulations, coordinating helicopter operations with local airports before and during construction of PG&E Proposed Project components, and managing helicopter use and landing zones. Helicopter flight paths would avoid residences or other occupied areas. Through these activities and agency coordination, PG&E would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters, and the impact would be less than significant.

Operations and Maintenance

LSPGC Components

No Impact. Helicopters are not anticipated to be used for O&M of the LSPGC Proposed Project components. Therefore, no impact would occur.

PG&E Components

No Impact. Helicopters are occasionally used by PG&E for O&M of existing PG&E facilities. The PG&E Proposed Project components would be subject to the same O&M activities that PG&E already conducts in the area. Therefore, no impact would occur.

5.9.4.1.10 Would the project expose people to a significant risk of injury or death involving unexploded ordinance?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. The results of the Phase I ESA and Corridor Report did not indicate the presence of any UXO sites within 1 mile of the LSPGC and PG&E Proposed Project components. Therefore, the Proposed Project would not expose people to a significant risk of injury or death due to a UXO, and there would be no impact.

5.9.4.1.11 Would the project expose workers or the public to excessive shock hazards?

Construction

LSPGC Components

Less-than-Significant Impact. All authorized personnel working on site, during either construction or O&M, would be trained according to Occupational Safety and Health Administration (OSHA) safety standards (U.S. Department of Labor [DOL] 2023), which are based on applicable federal, state, and local safety regulations. To minimize potential exposure of the public to electric shock hazards at the proposed LSPGC Collinsville Substation, a 10-foot-tall wall topped with 1 foot of barbed wire would extend around the perimeter of the station, restricting site access. Only one vehicle entrance would be installed into the station, and this entrance would be gated and monitored remotely; thus, access would be restricted to only authorized personnel. Warning signs would be posted around the perimeter of the proposed LSPGC Collinsville Substation wall and gate to alert people of potential electrical hazards. In

addition, the proposed LSPGC 230 kV Overhead Segment would be designed in accordance with CPUC GO 95 guidelines for safe ground clearances established to protect the public from electric shock. The proposed LSPGC 230 kV Submarine Segment and LSPGC 230 kV Underground Segment would be buried, protecting the public from electric shock. The proposed LSPGC Telecommunications Line would be installed underground and would not transmit electricity; thus, it would not pose a significant risk of electric shock to the public. Therefore, impacts to workers or the public would be less than significant.

PG&E Components

Less-than-Significant Impact. All authorized personnel working on site, during either construction or O&M, would be trained according to OSHA safety standards (U.S. DOL 2019), which are based on applicable federal, state, and local safety regulations. In addition, the PG&E Proposed Project components would be designed in accordance with CPUC GO 95 guidelines for safe ground clearances established to protect the public from electric shock. Therefore, impacts to workers or the public would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. During facility inspections, the proposed LSPGC Collinsville Substation perimeter wall would be examined, and repairs would be made as necessary. Because the facility would be unstaffed, the Proposed Project would be remotely monitored by LSPGC 24 hours a day, 7 days a week. If equipment malfunctions, O&M personnel would be dispatched to the site to investigate the problem and take appropriate corrective action. Annual maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would be performed by crews of one to four people. LSPGC has qualified operations personnel that are trained to avoid and minimize arc flash situations and are provided the appropriate arc flash personal protective equipment (e.g., fire-resistant clothing, gloves, and insulate tools). Proper personal protective equipment would be required when anyone is in the facility. LSPGC uses high-speed relay equipment that evaluates electrical fault locations and opens circuit breakers to de-energize the line in milliseconds. The proposed LSPGC 230 kV Submarine Segment would be buried and would not require planned maintenance. As result, it is not anticipated that the submarine segment would pose a significant shock hazard to workers or the public. As the proposed LSPGC Telecommunications Line would be installed underground and would not transmit electricity, it is not anticipated that malfunction would pose a significant shock hazard to workers or the public. As such, impacts associated with exposing workers and the public to excessive shock hazards would be less than significant.

PG&E Components

Less-than-Significant Impact. The PG&E Proposed Project components would involve similar hazards as the existing transmission and distribution lines in the Proposed Project area. The addition of the proposed new infrastructure would only nominally change the total length of the transmission line, and thus the additional risk, in the Proposed Project vicinity. Thus, impacts to workers or the public would be less than significant.

5.9.4.2 Hazardous Materials

As previously discussed in Section 5.9.4 Impact Analysis, construction of the LSPGC and PG&E Proposed Project components would require the use of diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and chemicals associated with vehicles and construction activities. Implementation of the SPCCP, HMMP, and SWPPPs would minimize the risk of a release of hazardous substances and ensure that a significant hazard to the public or the environment would not result in the event of a release. Therefore, potential impacts to the public or the environment from the inadvertent release of hazardous materials would be less than significant. The estimated amounts of the hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction of the Proposed Project are presented in Table 5.9-2: Types, Uses, and Volumes of Hazardous Materials.

Table 5.9-2: Types, Uses, and Volumes of Hazardous Materials

Hazardous Material Type	Use	Estimated Volume (gallons)
Diesel	Engine fuel	672,338
Gasoline	Engine fuel	195,088
Jet	Engine fuel	16,428
Lubricants/Hydraulic Fluids	Engine and equipment lubrication/powering hydraulic equipment	44,139
Miscellaneous Construction Fluids (solvents, etc.)	Cleaning/lubricating hardware, etc.	2,210

Notes:

- Diesel, gasoline, and jet fuel volumes developed through air quality modeling analysis.
- Lubricants/hydraulic fluids consumption assumed at 5 percent of fuel consumption.
- Miscellaneous construction fluid volumes assumed at 5 percent of lubricants/hydraulic fluids volume.

5.9.4.3 Air Traffic Hazards

Discussion of how the LSPGC and PG&E Proposed Project components would comply with any FAA requirements for the aboveground facilities is presented in Section 5.9.4 Impact Analysis. The FAA Notice Criteria Tool concluded that no LSPGC or PG&E Proposed Project components would pose a hazard to air navigation, and the results of the screening are provided in Attachment 5.9-D: FAA Notice and Criteria Tool Results. Compliance with FAA regulations would ensure that impacts to air traffic would be less than significant.

5.9.4.4 Accident or Upset Conditions

Section 5.9.4 Impact Analysis provides a description of how the LSPGC and PG&E Proposed Project components would be designed, constructed, operated, and maintained to minimize potential hazards to the public that may result from accidents or natural catastrophes. Impacts to the public from accidents or upset conditions would be less than significant.

5.9.4.5 Shock Hazard

The measures that would be employed to reduce shock hazards and avoid electrocution of workers and the public are presented in Section 5.9.4 Impact Analysis. Based on the implementation of these measures, impacts to the public or workers from exposure to shock hazards would be less than significant.

5.9.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for hazards, hazardous materials, and public safety.

5.9.6 Applicant-Proposed Measures

5.9.6.1 Hazards, Hazardous Materials, and Public Safety Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM HAZ-1: Air Transit Coordination.** LSPGC would implement the following protocols related to helicopter use during construction and air traffic:

  – LSPGC would comply with all applicable FAA regulations regarding air traffic within 2 miles of the Proposed Project alignment.
  – LSPGC's helicopter operator would coordinate all Proposed Project helicopter operations with local airports before and during Proposed Project construction.
  – Helicopter use and landing zones would be managed to minimize impacts on local residents.

5.9.6.2 Cross-Referenced Applicant-Proposed Measures

The following cross-referenced APM would be implemented for the LSPGC Proposed Project components:

- **APM BIO-3: Worker's Environmental Awareness Program.** All workers on the Proposed Project site would be required to attend a WEAP training. Training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. Additionally, the WEAP would train all construction personnel on hazardous materials management, hazardous wastes and stained or odiferous soils identification, and applicable regulations. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations:

  - Environmentally sensitive area boundaries,
  - Housekeeping (i.e., trash and equipment cleaning),
  - Safety,
  - Work stoppage,
  - Communication protocol, and
  - Consequences of non-compliance.

- **APM PUB-1: School Access.** Construction of the proposed LSPGC Telecommunication Line within 320 feet of St. Peter Martyr School would be coordinated with the school's administration and conducted during the summer months, at a time when school is out of session, in order to minimize disruptions to school access.

- **APM FIRE-1: Construction Fire Prevention Plan:** A Proposed Project-specific CFPP would be prepared and submitted to the CPUC for review prior to initiation of construction. The CFPP would be fully implemented throughout the construction period and would include, at a minimum, the following:

  – The purpose and applicability of the CFPP.
  – Responsibilities and duties.
  – Preparedness training and drills.
  – Procedures for fire reporting, response, and prevention that include the following:

    - Identification of daily site-specific risk conditions,
    - The tools and equipment needed on vehicles and to be on hand at sites,
    - Reiteration of fire prevention and safety considerations during tailboard meetings, and
    - Daily monitoring of the red flag warning system with appropriate restrictions on types and levels of permissible activity.

  – Coordination procedures with federal and local fire officials.
  – Crew training, including fire safety practices and restrictions.
  – Method(s) for verifying that all CFPP protocols and requirements are being followed.

  A Proposed Project Fire Marshal or similar qualified position would be established to enforce all provisions of the CFPP, as well as perform other duties related to fire detection, prevention, and suppression for the Proposed Project. Construction activities would be monitored to ensure implementation and effectiveness of the CFPP.

5.9.7 PG&E Construction Measures

5.9.7.1 Hazards, Hazardous Materials, and Public Safety PG&E Construction Measures

The following CMs would be implemented for the PG&E Proposed Project components:

- **CM HAZ-1: Hazardous-Substance Control and Emergency Response.** PG&E would implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. If it is necessary to store chemicals on-site, they

would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on-site, as applicable.

Project construction would involve soil surface blading/leveling, excavation of up to several feet, and augering to a maximum depth of 35 feet in some areas. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested, and if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.

- Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.

- Emergency response and reporting procedures to address hazardous material spills.

- Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

- **CM HAZ-2: Worker Environmental Awareness.** The training would include the following components related to hazards and hazardous materials:

  - PG&E Health, Safety, and Environmental expectations and management structure.
  - Applicable regulations.
  - Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.
  - Summary of the primary workplace hazards to which workers may be exposed.
  - Overview of the controls identified in the SWPPP.

- **CM HAZ-3: Air Transit Coordination.** PG&E would implement the following protocols related to helicopter use during construction and air traffic:

  - PG&E would comply with all applicable FAA regulations regarding air traffic within 2 miles of the Proposed Project alignment.
  - PG&E's helicopter operator would coordinate all Proposed Project helicopter operations with local airports before and during Proposed Project construction.
  - Helicopter use and landing zones would be managed to minimize impacts on local residents.

5.9.7.2 Cross Referenced Construction Measures

The following cross-referenced CM would be implemented for the PG&E Proposed Project components:

- **CM FIRE-1: Fire Risk Management.** PG&E would follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Project personnel would be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads would have federally approved or State-approved spark arrestors. All off-road vehicles would be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens would be used when welding. In addition, during fire "red flag" conditions (as determined by CAL FIRE), welding would be curtailed. Every fuel truck would carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials would be removed from equipment parking and storage areas.

5.9.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts resulting from hazards and hazardous materials and potential impacts to public safety associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not generate new hazards nor impact emergency responses as it would be contained within the same parcel being purchased for construction of the initial phase of the Proposed Project. As such, no additional mitigation measures or APMs would be required. If modification of the proposed Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.10 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			✓	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in a substantial erosion or siltation on- or off-site;			✓	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			✓	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			✓	
iv) impede or redirect flood flows?			✓	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			✓	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

This section describes the existing surface and groundwater hydrology, use, and water quality, as well as the potential for erosion and flooding in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.10.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Cable, which would extend and terminate at PG&E's existing Pittsburg Substation.

The Proposed Project would be located within two Regional Water Quality Control Board (RWQCB) jurisdictions—the Central Valley RWQCB and the San Francisco Bay RWQCB. Each of the regions is regulated by its own water quality control plan, or basin plan. The Central Valley RWQCB covers the entire area included in the Sacramento and San Joaquin River drainage basins. The basins are bounded by the crests of the Sierra Nevada to the east and the Coast Ranges and Klamath Mountains to the west. The San Francisco Bay RWQCB regulates the San Francisco Bay Estuary, the largest estuary on the west coast of the United States (U.S.), where fresh waters of California's Central Valley mix with the saline waters of the Pacific Ocean. The region also includes portions of Marin and San Mateo counties, from Tomales Bay in the north to Pescadero and Butano creeks in the south.

The Proposed Project is located south of the Montezuma Hills within Solano, Sacramento, and Contra Costa counties. The region is classified as a mediterranean climate, with cool wet winters and hot dry summers. Most of the area's annual rainfall occurs during the winter months, though scattered spring and summer showers are known to occur. The regional average precipitation is approximately 13.3 inches.

5.10.1.1 Waterbodies

The main receiving waterbody in the region is the Delta, which is the confluence of four major river systems from California's Central Valley: the Sacramento River, San Joaquin River, Calaveras River, and Mokelumne River. The Sacramento River originates in the northern region of California and flows south before converging with the San Joaquin River near the Proposed Project. The San Joaquin River begins in the Ansel Adams Wilderness and flows west, then northwest before reaching the Delta. All drainages and waterbodies in the Montezuma Hills area

flow south directly into either the Sacramento River or Suisun Bay. Suisun Bay—one of the largest contiguous brackish water marshes in the western U.S.—is located approximately 7 miles west of the Proposed Project.

Surface waters in the Proposed Project area are mainly comprised of seasonal wetlands located within the low-lying areas between rolling hills. These seasonal wetlands include vernal pools, alkali meadows, and ponds. During periods of heavy precipitation, these surface waters flow to the Sacramento River through one perennial drainage along Talbert Lane.

The Proposed Project disturbance areas along with an approximately 10-acre buffer were surveyed between May 2023 and October 2023 and total approximately 508 acres. Seven wetland features, one ephemeral linear drainage, and one Delta linear drainage were identified during the survey. These surface water features are displayed on Figure 5.10-1: Hydrologic Features in the Proposed Project Area and listed in Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components and Table 5.10-2: Potentially Jurisdictional Linear Water Features Crossed by Proposed Project Component, respectively.

5.10.1.2 Water Quality

The Delta, Suisun Bay, and Suisun Marsh receiving waters are all designated as Clean Water Act (CWA) Section 303(d)-impaired waterbodies due to many key pollutants, including pesticides, heavy metals, and other urban and agricultural run-off (State Water Resources Control Board [SWRCB] 2022). These key pollutants are listed in Table 5.10-3: Waterbodies and Key Pollutants.

5.10.1.3 Groundwater Basin

The Proposed Project is located within the Solano Subbasin in the southwestern portion of the Sacramento Valley Groundwater Basin and the northern portion of the Delta. The elevation varies from 120 feet in the northwest corner to sea level in the south. Subbasin boundaries are defined by Putah Creek on the north, the Sacramento River on the east (from Sacramento to Walnut Grove), the North Mokelumne River on the southeast (from Walnut Grove to the San Joaquin River), and the San Joaquin River on the south (from the North Mokelumne River to the Sacramento River). The western subbasin border is defined by the hydrologic divide that separates lands draining to San Francisco Bay from those draining to the Delta. That divide is roughly delineated by the English Hills and the Montezuma Hills (California Department of Water Resources [DWR] 2004).

5.10.1.4 Groundwater Wells and Springs

According to the DWR's online Groundwater Information Center Interactive Map Application, there is a groundwater well located approximately 7 miles north of the proposed LSPGC Collinsville Substation (DWR 2023b). The most recent depth to groundwater was measured at 12.7 feet at this well in March 2023. The closest groundwater well to the Proposed Project was installed as part of the Solano Wind 4 Project, which is located approximately 1,000 feet east of the proposed PG&E 500 kV Interconnection and approximately 1 mile northeast of the proposed LSPGC Collinsville Substation. Groundwater is anticipated to be fairly shallow and near the surface in lower-elevation areas, such as near the banks of the Sacramento River.

Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components

Wetland Identification Number	Proposed Project Component Crossing Wetland Feature	Vegetation Type	Cowardin Classification	Potential Jurisdictional Area within Survey Area (acres)	
				USACE and RWQCB	CDFW
W-1	Proposed LSPGC 230 kV Overhead Segment	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance, *Rosa californica* Shrubland Alliance, and *Schoenoplectus acutus*/*Rosa californica* Association	E2EM1	7.43	7.43
W-2	Proposed LSPGC 230 kV Overhead Segment	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, *Distichlis spicata* Herbaceous Alliance, and *Frankenia salina* Herbaceous Alliance	PEM1	22.43	22.43
W-3	Proposed LSPGC 230 kV Overhead Segment[1]	*Distichlis spicata* Herbaceous Alliance	PEM1	0.25	0
W-4	Proposed LSPGC 230 kV Overhead Segment[2]	*Frankenia salina* Herbaceous Alliance and *Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	PEM1	1.22	0
W-5	Proposed PG&E 12 kV Distribution Line	*Distichlis spicata* Herbaceous Alliance and *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	PEM1	15.16	15.16
W-6	Proposed PG&E 12 kV Distribution Line	*Distichlis spicata* Herbaceous Alliance and *Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	PEM1	10.02	11.85
W-7	Proposed PG&E 12 kV Distribution Line	*Distichlis spicata* Herbaceous Alliance	PEM1	1.55	0
Total	**--**	**--**	**--**	**58.06**	**55.04**

Notes: USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife

[1] W-3 is located approximately 200 feet southwest of the proposed LSPGC 230 kV Overhead Transmission Line

[2] W-4 is spanned by the proposed LSPGC 230 kV Overhead Transmission Line, but no temporary or permanent impacts to the wetland are anticipated.

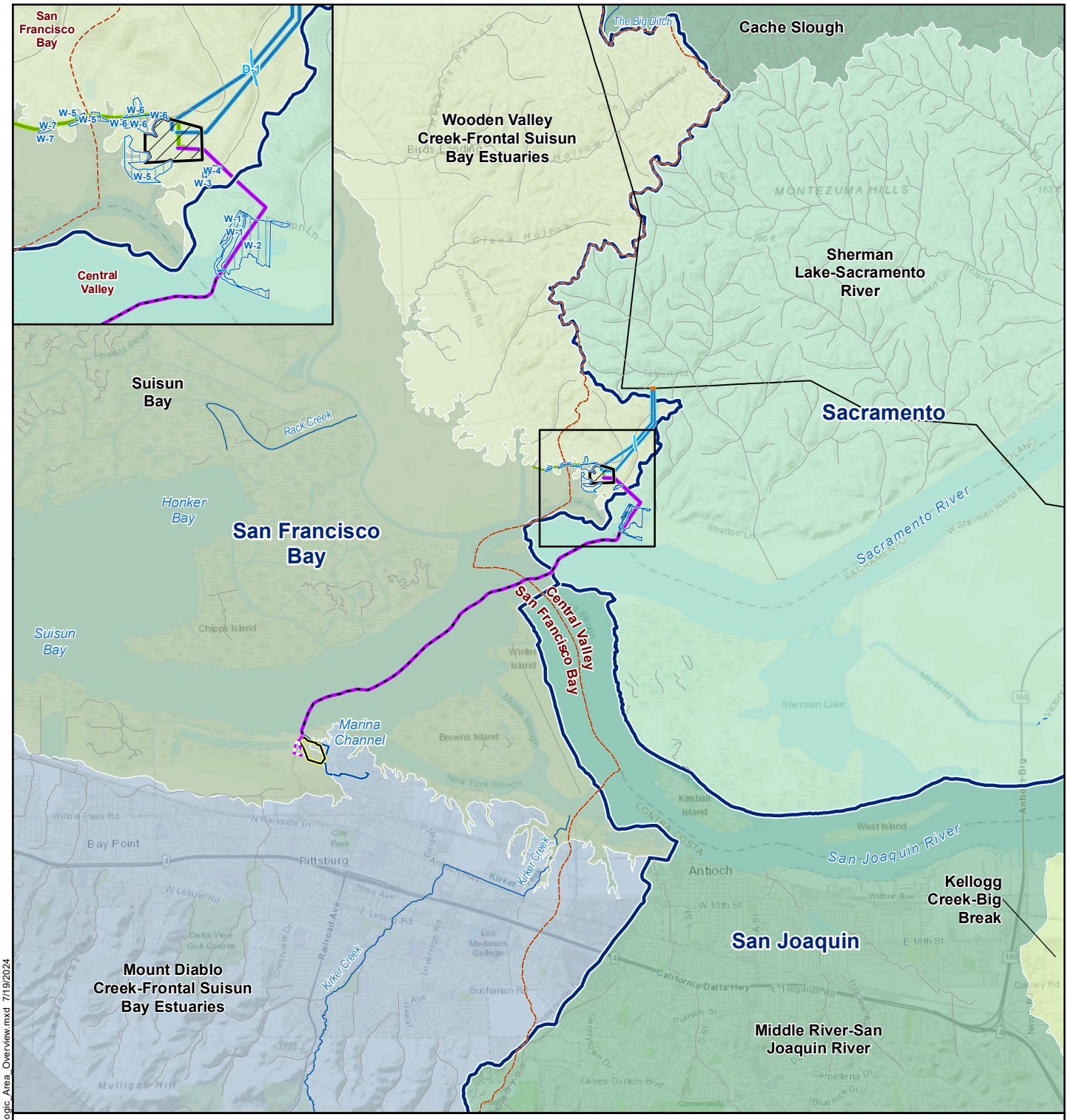

Figure 5.10-1: Hydrologic Features in the Proposed Project Area

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line

HUC 10 Watershed

- Cache Slough
- Kellogg Creek-Big Break
- Middle River-San Joaquin River
- Mount Diablo Creek-Frontal Suisun Bay Estuaries
- Sherman Lake-Sacramento River
- Suisun Bay
- Wooden Valley Creek-Frontal Suisun Bay Estuaries

- Named Stream
- Unnamed Stream
- Regional Water Quality Control Board Boundary
- HUC 4 Watershed
- Potential Wetland
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site

1:100,000

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Table 5.10-2: Potentially Jurisdictional Linear Water Features Crossed by Proposed Project Component

ID	Feature Type	Proposed Project Component Crossing Linear Feature	Average Measurements (feet)					Approximate Jurisdictional Area (acres)		
			Length	OHWM Width	OHWM Depth	TOB Width	TOB Depth	USACE	RWQCB	CDFW
D-1	Ephemeral	Proposed PG&E 500 kV Interconnection	926.1	3.0	0.1	4.9	2.2	0[1]	0.06	0.10
D-2[2]	River Delta	Proposed LSPGC 230 kV Submarine Segment	--	--	--	--	--	1,167	1,167	1,167

Source: National Archives 2024.

Notes: OHWM = ordinary high water mark; TOB = top of bank; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife

[1] The ephemeral stream identified as D-1 does not meet the current definition of waters of the U.S. per Title 40, Chapter I, Subchapter D, Part 120.2(b)(8) of the Code of Federal Regulations (CFR).

[2] The Delta, identified as D-2, was surveyed as part of Attachment 5.4-B: Aquatic Resources Technical Report for the Proposed Project. Due to limitations in measuring the length, width, and depth of the river, only the approximate acreage is listed.

Table 5.10-3: Waterbodies and Key Pollutants

Waterbody	Location Relative to the Proposed Project	Key Pollutants
Delta	Crossed by the proposed LSPGC 230 kV Submarine Segment	Chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, dioxin compounds (2,3,7,8), furan compounds, invasive species, mercury, polychlorinated biphenyls (PCBs), and selenium
Suisun Bay	Crossed by the proposed LSPGC 230 kV Submarine Segment	Chlordane, DDT, dieldrin, dioxin compounds (2,3,7,8), furan compounds, invasive species, mercury, PCBs, and selenium
Suisun Marsh Wetlands	Approximately 1 mile west of the proposed LSPGC Collinsville Substation	Mercury, nutrients, organic enrichment/low dissolved oxygen, and salinity/total dissolved solids/chlorides

Source: SWRCB 2022

5.10.1.5 Groundwater Management

The DWR ranks basins as either very low, low, medium, or high priority based on the results from the statewide prioritization evaluation process of 515 basins/subbasins, using consistent data and methodology. These four rankings provide an indicator of the overall relative importance of groundwater in relation to the components identified in the established California Water Code for each of the state's basins or subbasins. Based on an online review of the DWR's Groundwater Prioritization Dashboard, the Sacramento Valley Groundwater Basin is currently designated as medium priority and is managed by the Solano Collaborative. The Solano Collaborative is comprised of five separate entities working in coordination: the Solano Subbasin Groundwater Sustainability Agency (GSA), Solano Irrigation District GSA, City of Vacaville GSA, Northern Delta GSA, and the Sacramento County GSA.

5.10.1.6 Floodplains

Based on a review of the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Maps, it was determined that the proposed LSPGC 230 kV Overhead Transmission Line and 230 kV Submarine Cable connection point at PG&E's existing Pittsburg Substation would be partially located within a 100-year flood zone, designated as Flood Hazard Zone AE.[1] Additionally, a portion of the proposed LSPGC Telecommunications Line located in Contra Costa County would be constructed within flood hazard zone AE (FEMA 2023). The proposed LSPGC Collinsville Substation would be located just outside of the Flood Hazard Zone AE.

5.10.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

[1] AE flood zones present a 1 percent chance of flooding annually and a 26 percent chance of flooding over a 30-year period.

5.10.2.1 Regulatory Setting

5.10.2.1.1 Federal

Clean Water Act

The CWA (33 U.S. Code [U.S.C.] § 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

Section 402

The National Pollutant Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 U.S.C. § 1342). The program originally focused on industrial-process wastewater and Publicly Owned Treatment Works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of storm water discharges, known as Phase I facilities, which include the following:

- Facilities already covered by an NPDES permit for storm water,
- Facilities that engage in industrial activities,
- Large municipal separate storm drain systems (MS4s) that serve more than 250,000 people,
- Medium MS4s that serve between 100,000 and 250,000 people, and
- Facilities that are considered significant contributors of pollutants to waters of the U.S.

The U.S. Environmental Protection Agency (EPA) issued a final rule for Phase II discharges in August 1995. Phase II storm water discharges include light industrial facilities, small construction sites (less than 5 acres), and small municipalities (less than 100,000 population).

In California, NPDES permitting authority is delegated to the SWRCB and administered by the nine RWQCBs. Further information regarding NPDES permitting requirements, including the Construction General Permit, is provided in Section 5.10.2.1.2 State.

Section 404

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material to waters of the U.S., including wetlands (33 U.S.C. § 1344). The USACE issues individual site-specific or general (i.e., Nationwide) permits for such discharges.

Section 401

Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a Water Quality Certification (WQC) that the discharge will comply with the applicable CWA provisions or a waiver (33 U.S.C. § 1341). If a federal permit is required, such as a USACE permit for dredge and fill discharges, the project proponent must also obtain a WQC from the SWRCB.

Sections 303 and 304

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the U.S. (33 U.S.C. § 1313). Section 304(a) requires the U.S. EPA to publish water quality criteria that accurately reflects the latest scientific knowledge on the kind and extent of effects that pollutants in water may have on health and welfare (33 U.S.C. § 1314[a]). Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed when numerical standards cannot be established or when they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which the U.S. EPA has published water quality criteria and that could reasonably be expected to interfere with designated uses in a waterbody.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of waterbodies with poor water quality. The waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water segments on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality.

Rivers and Harbors Appropriation Act of 1899

Section 10

The USACE regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires USACE approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

Section 408

The sole authority to grant permission for temporary or permanent alterations or use of any USACE) Civil Works project is contained in Section 14 of the Rivers and Harbors Appropriation Act of 1899 and codified in Title 33, Section 408 of the U.S.C. An alteration refers to any action by any entity other than the USACE that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness or the structural or ecological integrity of a USACE project. Section 408 permission requires a determination that the requested alteration is not injurious to the public interest and will not impair the usefulness of the project. This means USACE has the authority to review, evaluate, and approve all alterations to federally authorized Civil Works projects to make sure they are not harmful to the public and still meet the project's intended

purposes mandated by congressional authorization. Section 408 includes the following policy highlights:

- USACE Jurisdictional Reach: Section 408 permissions are only required for alterations proposed within the lands and real property interests identified and acquired for the USACE project and to lands available for USACE projects under the navigation servitude. Routine O&M does not require Section 408 permissions.

- Requester Requirements: Section 408 requests must come from or have written concurrence of the non-federal sponsor including acceptance of new O&M requirements. All Section 408 projects must meet current USACE design and construction standards. Requesters must provide transparency and standardize the contents of 408 review packages.

- Decision Level Criteria: Provides clear criteria to determine whether a permit can be approved locally or at headquarters level.

National Flood Insurance Act of 1968

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies, and also for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows non-residential development in floodplains; however, construction activities are restricted within flood hazard areas depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the CFR, enabling FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

5.10.2.1.2 State

State Lands Act of 1938

The State Lands Act, established in 1938, created the California State Lands Commission (CSLC). The CSLC has sovereign ownership, jurisdiction, and management authority over all tidelands, submerged lands, and beds of navigable lakes and waterways (CSLC 2024). The CSLC, "in its capacity as a landowner, protects and enhances these lands and natural resources by issuing leases for use, development, and environmental preservation, championing public access, and resolving boundaries between public and private lands." (CLSC 2024). The Proposed Project must receive a lease agreement from the CLSC to perform construction and O&M activities in the Delta.

Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974

The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 directed the San Francisco Bay Conservation and Development Commission (BCDC) and the CDFW to develop the Suisun Marsh Protection Plan (1976). The Suisun Marsh Preservation Act of 1977 declared that the Suisun Marsh Protection Plan contains a series of recommendations that require implementation by the Legislature (Public Resources Code [PRC] § 29004[b]). The objectives of the Suisun

Marsh Protection Plan are to preserve and enhance the quality and diversity of the Suisun Marsh aquatic and wildlife habitats and to ensure retention of upland area adjacent to the marsh in uses compatible with its protection (BCDC 2024). The Suisun Marsh Protection Plan identifies a Primary Management Area and Secondary Management Area. The Primary Management Area is overseen by the BCDC, which administers a Marsh Development Permit (covered as a Major Permit) for any work occurring in the Primary Management Area. The Suisun Marsh Protection Plan assigns primary responsibility for carrying out the plan in the Secondary Management Area to local governments, and they must develop a protection program in accordance with the plan and receive certification from the BCDC. Therefore, Solano County developed and received certification for its Suisun Marsh Local Protection Program (LPP), which is discussed in Section 5.11 Land Use and Planning. The following policies from the Suisun Marsh Protection Plan are relevant to the Proposed Project:

- The diversity of habitats in the Suisun Marsh and surrounding upland areas should be preserved and enhanced wherever possible to maintain the unique wildlife resource.

- Existing uses should continue in the upland grasslands and cultivated areas surrounding the critical habitats of the Suisun Marsh in order to protect the marsh and preserve valuable marsh-related wildlife habitats. Where feasible, the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife should be enhanced.

- In the Suisun Marsh and upland areas necessary to protect the marsh, improvements to public utility facilities should follow these planning guidelines:

  – New electric power transmission utility corridors should be located at least 0.5 mile from the edge of the marsh. New transmission lines, whether adjacent to the marsh or within existing utility corridors, should be constructed so that all wires are at least 6 feet apart.

  – Urban utilities and public services (e.g. natural gas lines, electric lines for local power distribution, domestic water mains, and sewers) should be allowed to extend into the Suisun Marsh and the adjacent upland area necessary to protect the marsh, only to serve existing uses and other uses consistent with protection of the marsh, such as agriculture. However, utilities in the secondary management area that are necessary for the operation of a water-related industry within the area designated for such use in the Suisun Marsh Protection Plan at Collinsville would be permissible.

  – Within the marsh, new electric lines for local distribution should be installed underground unless undergrounding would have a greater adverse environmental effect on the marsh than above-ground construction, or the cost of underground installation would be so expensive as to preclude service. Any distribution line necessary to be constructed above ground should have all wires at least 6 feet apart.

- All plans for construction within the marsh should be reviewed by the CDFW to further ensure that construction methods and timing will have a minimal impact on marsh flora and fauna.

- Agricultural uses consistent with protection of the marsh, such as grazing and grain production, should be maintained in the secondary management area. In the event that such uses become infeasible, other uses compatible with protection of the marsh should be permitted. The value of the upland grassland and cultivated lands as habitats for marsh-related wildlife should be maintained and enhanced where possible by planting or encouraging valuable wildlife food or cover plant species.

The proposed LSPGC 230 kV Submarine Segment would be within the Primary Management Area and would be required to receive a Marsh Development Permit from the BCDC. The proposed LSPGC Collinsville Substation and portions of the proposed PG&E 12 kV Distribution Line would be located in the Secondary Management Area and would be subject to the Suisun Marsh LPP discussed in Section 5.11 Land Use and Planning.

CALFED Bay-Delta Program Record of Decision

In 2000, the CALFED Bay-Delta Program Record of Decision was signed, which included the Ecosystem Restoration Program calling for the restoration of 5,000 to 7,000 acres of tidal wetlands and the enhancement of 40,000 to 50,000 acres of managed wetlands. Therefore, the Suisun Principal Agencies adopted the Suisun Marsh Plan (SMP) in 2013, which includes the key elements of restoring between 5,000 and 7,000 acres of tidal marsh, enhancing more than 40,000 of managed wetlands, maintaining the heritage of waterfowl hunting, improving water quality for fish and wildlife habitat, and providing other recreational opportunities (U.S. Bureau of Reclamation 2013). The proposed LSPGC 230 kV Submarine Segment would be within the SMP planning area. The following objective from the SMP is relevant to the Proposed Project:

- Water Quality. Protect and, where possible, improve water quality for beneficial uses in Suisun Marsh, including estuarine, spawning, and migrating habitat uses for fish species as well as recreational uses and associated wildlife habitat.

Sacramento-San Joaquin Delta Reform Act of 2009

The Sacramento-San Joaquin Delta Reform Act of 2009 created the Delta Stewardship Council (DSC), which develops and enforces the Delta Plan. The Delta Plan aims to improve statewide water supply reliability and protect and restore a vibrant and healthy Delta ecosystem, all in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta (DSC 2024). The Delta Plan includes 14 enforceable regulatory policies, and the following policy is relevant to the Proposed Project:

- Policy ER P3. Protect Opportunities to Restore Habitat (23 CCR Section 5007)
  - Within the priority habitat restoration areas depicted in Appendix 5, significant adverse impacts to the opportunity to restore habitat as described in section 5006, must be avoided or mitigated.
  - Impacts referenced in subsection (a) will be deemed to be avoided or mitigated if the project is designed and implemented so that it will not preclude or otherwise interfere with the ability to restore habitat as described in section 5006.

- Impacts referenced in subsection (a) shall be mitigated to a point where the impacts have no significant effect on the opportunity to restore habitat as described in section 5006. Mitigation shall be determined, in consultation with the California Department of Fish and Wildlife, considering the size of the area impacted by the covered action and the type and value of habitat that could be restored on that area, taking into account existing and proposed restoration plans, landscape attributes, the elevation map shown in Appendix 4, and other relevant information about habitat restoration opportunities of the area.

Delta Protection Act of 1992

The Delta Protection Act of 1992 declared "that the Delta is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and that it is the policy of the State to recognize, preserve, and protect those resources of the Delta for the use and enjoyment of current and future generations, in a manner that protects and enhances the unique values of the Delta as an evolving place" (DPC 2024). The act created the Delta Protection Commission (DPC), which develops and oversees the Land Use and Resource Management Plan for the Primary Zone of the Delta. The act also defines the principal jurisdiction of the DPC in a Primary Zone. Approximately 3.4 miles of the proposed LSPGC 230 kV Submarine Segment are within the Primary Zone. The following Utilities and Infrastructure policy is relevant to the Proposed Project:

- Policy P-1. Impacts associated with construction of transmission lines and utilities can be mitigated by locating new construction in existing utility or transportation corridors, or along property lines, and by minimizing construction impacts. Before new transmission lines are constructed, the utility should determine if an existing line has available capacity. To minimize impacts on agricultural practices, utility lines shall follow edges of fields. Pipelines in utility corridors or existing rights-of-way shall be buried to avoid adverse impacts to terrestrial wildlife. Pipelines crossing agricultural areas shall be buried deep enough to avoid conflicts with normal agricultural or construction activities. Utilities shall be designed and constructed to minimize any detrimental effect on levee integrity or maintenance, agricultural uses and wildlife within the Delta. Utilities shall consult with communities early in the planning process for the purpose of creating an appropriate buffer from residences, schools, churches, public facilities and inhabited marinas.

McAteer-Petris Act of 1965

The McAteer-Petris Act of 1965 established the BCDC to "exercise its authority to issue or deny permit applications for placing fill, extracting material, or changing use of any land, water or structure within the Commission's jurisdiction in conformity with the provisions and policies of both the McAteer-Petris Act and the Bay Plan" (BCDC 2023). The BCDC's San Francisco Bay Plan outlines policies intended to protect and restore tidal marshes and wetlands, improve water quality, and conserve the fish and wildlife of San Francisco Bay. The San Francisco Bay Plan's

Other Uses of the Bay and Shoreline section includes the following policies that are relevant to the Proposed Project:

- Policy 5. High voltage transmission lines should be placed in the Bay only when there is no reasonable alternative. Whenever high voltage transmission lines must be placed in the Bay or in shoreline areas:

  a. New routes should avoid interfering with scenic views and with wildlife, to the greatest extent possible; and

  b. The most pleasing tower and pole design possible should be used. High voltage transmission lines should be placed underground as soon as this is technically and economically feasible.

California Code of Regulations Title 23

Title 23 of the California Code of Regulations grants the Central Valley Flood Protection Board (CVFPB) authority over development activities in the Central Valley that would potentially impact flooding in the region. The CVFPB ensures that construction and maintenance activities adhere to established standards intended to reduce the devastating effects of flooding. The CVFPB issues encroachment permits for activities located in its jurisdiction (CVFPB 2024).

California Fish and Game Code Sections 1600 to 1617

Sections 1601 through 1606 of the California Fish and Game Code require an agreement between the CDFW and an entity proposing to substantially divert or obstruct the natural flow or affect changes to the bed, channel, or bank of any river, stream, or lake. The agreement is designed to protect the fish and wildlife values of a river, lake, or stream.

Porter Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) provides guidance for the protection of water quality and beneficial uses of water throughout the state and, along with the CWA, provides the overarching legislation governing the SWRCB and RWQCBs. Waters of the state are defined as any surface water or groundwater, including saline waters, which are within the boundaries of the state (PRC § 71200). This differs from the CWA definition of waters of the U.S. by its inclusion of groundwater and waters outside the OHWM in its jurisdiction.

The Porter-Cologne Water Quality Control Act requires that each RWQCB adopt a basin plan for the region. Pursuant to the Porter-Cologne Water Quality Control Act, these basin plans become part of the California Water Plan, when such plans have been reported to the legislature (California Water Code § 13141). Individual basin plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. NPDES permits, waste discharge requirements, and waivers are mechanisms used by the RWQCBs to control discharges and protect water quality.

The Proposed Project is located within the jurisdiction of the Central Valley RWQCB (Region 5) and San Francisco Bay RWQCB (Region 2), and it is subject to water quality standards

described in each corresponding basin plan. These two RWQCBs are responsible for protecting the beneficial uses of surface water and groundwater resources in the Central Valley and San Francisco Bay basins.

State Water Resources Control Board Construction General Permit

On September 8, 2022, the SWRCB adopted Order No. 2022-0057-DWQ (Construction General Permit), which reissued the Order 2009-0009-DWQ and previous Order 99-08-DWQ for projects disturbing 1 or more acre of land, or that are part of a common plan of development or sale that disturbs more than 1 acre of land. The new permit became effective on September 1, 2023, and all new dischargers are required to obtain coverage under the new permit by submitting Permit Registration Documents.

The Construction General Permit requires the implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must be prepared before construction begins and kept on site throughout the construction process. In accordance with the Construction General Permit, the SWPPP must include the following:

- Identification of pollutant sources and non-storm water discharges associated with construction activities;
- Specifications for best management practices (BMPs) that will be implemented during project construction to minimize the potential for accidental releases and runoff from the construction areas, including temporary construction yards, pull sites, and other temporary work areas;
- Calculations and design details, as well as BMP controls for site run-on;
- BMPs used to eliminate or reduce pollutants after construction is complete; and
- Certification from a Qualified SWPPP Developer (QSD).

Suisun Marsh Protection Act

In 1974, the California Legislature passed the Suisun Marsh Protection Act, designed to preserve the Suisun Marsh from residential, commercial, and industrial development. The act directs the BCDC to work with the CDFW to prepare a protection plan for Suisun Marsh "to preserve the integrity and assure continued wildlife use" of the marsh. The objectives of the protection plan are to preserve and enhance the quality and diversity of the Suisun Marsh's aquatic and wildlife habitats and to ensure retention of upland areas adjacent to the marsh in uses compatible with its protection. Under the Suisun Marsh Protection Act, Solano County and other agencies with jurisdiction in the Suisun Marsh were required to bring their policies, regulations, programs, and operating procedures into conformity with the provision of the Suisun Marsh Protection Act and the Suisun Marsh Protection Plan through the preparation of an LPP. Solano County's component of the LPP includes general plan and other policies, as well as programs and regulations to preserve and enhance the wildlife habitat of the Suisun Marsh and to ensure retention of upland areas adjacent to the marsh in uses compatible with its protection.

Delta Vision and Strategic Plan

Delta Vision is a state-sponsored process that intends to identify a strategy for managing the Delta as a sustainable ecosystem that would continue to support the environmental and economic functions critical to the people of California.

The Delta Strategic Plan contains implementation recommendations of the Delta Vision Committee, including changes in the use of land and water resources, services to be provided within the Delta, governance, funding mechanisms, and ecosystem management practices.

5.10.2.1.3 Local

Because the California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. This section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Resources Element in the Solano County General Plan addresses water and other natural resources and provides policies and programs to protect or improve water quality; preserve wetlands, including jurisdictional wetlands and saltwater and freshwater marshes, consistent with federal and state requirements; protect and develop watershed and aquifer recharge areas; and implement water conservation programs. The Resources Element contains the following relevant goals and policies:

- Goal RS-G-1: Manage and preserve the diverse land, water, and air resources of the county for the use and enrichment of the lives of present and future generations
- Goal RS-G-2: Ensure continued presence and viability of the county's natural resources.
- Goal RS-G-9: Protect, monitor, restore and enhance the quality of surface and groundwater resources to meet the needs of all beneficial uses.
- Policy RS.P-8: Protect marsh waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland and grasslands because they are critical habitats for marsh-related wildlife and are essential to the integrity of the marshes.

- Policy RS.P-11: The County shall protect its marsh waterways, managed and natural wetlands, tidal marshes, seasonal marshes and lowland grasslands which are critical habitats for marsh-related wildlife.

- Policy RS.P-17: The County shall preserve the riparian vegetation along significant County waterways in order to maintain water quality and wildlife habitat values.

- Policy RS.P-23: Ensure that extension of new utilities and infrastructure facilities, including those that support uses and development outside the Delta is consistent with the Land Use and Resource Management Plan for the Primary Zone of the Delta. Where construction of new utility and infrastructure facilities is appropriate, the effects of such new construction on the integrity of levees, wildlife, and agriculture activities shall be minimized to the extent feasible.

- Policy RS.P-28: Protect long-term water quality in the Delta in coordination with water agencies at local, state, and federal levels for designated beneficial uses, including agriculture, municipal, water-dependent industrial, water-contact recreation, boating and fish and wildlife habitat.

- Policy RS.P-67: Protect existing open spaces, natural habitat, floodplains and wetland areas that serve as groundwater recharge areas

- Policy RS.P-69: Preserve and maintain watershed areas characterized by slope instability, undevelopable steep slopes, high soil erosion potential, and extreme fire hazards in agricultural use. Watershed areas lacking water and public services should also be kept in agricultural use.

- Policy RS.P-70: Protect land surrounding valuable water sources, evaluate watersheds, and preserve open space lands to protect and improve groundwater quality, reduce polluted surface runoff, and minimize erosion.

Sacramento General Plan

The Conservation Element in the Sacramento County General Plan aims for the preservation of the county's environmental resources and maintenance of their quality for the benefits of the community and the welfare of future generations. The Water Resources section of the element is used to guide development and infrastructure practices to ensure protection of surface water and groundwater quality from runoff and pollution. The Conservation Element contains the following relevant objectives and policies:

- Objective: Manage water supply to protect valuable water-supported ecosystems.

- Policy CO-21: Support protection and restoration of the Sacramento River Delta.

- Policy CO-23: Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

Contra Costa County General Plan

The Conservation Element in the Contra Costa County General Plan outlines issues regarding the identification, preservation, and management of natural resources in the unincorporated county. The Conservation Element aims to promote the protection, maintenance, and use of natural resources, and it contains the following relevant goals and policies:

- Goal 8-T: To conserve, enhance and manage water resources, protect their quality, and assure an adequate long-term supply of water for domestic, fishing, industrial and agricultural use.

- Goal 8-U: To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosion and danger to life and property.

- Policy 8-75: Preserve and enhance the quality of surface and groundwater resources.

- Policy 8-78: Where feasible, existing natural waterways shall be protected and preserved in their natural state, and channels which already are modified shall be restored. A natural waterway is defined as a waterway which can support its own environment of vegetation, fowl, fish and reptiles, and which appears natural.

- Policy 8-84: Riparian resources in the Delta and along the shoreline shall be protected and enhanced.

5.10.3 Impact Questions

5.10.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For hydrology and water quality, the CEQA Environmental Checklist asks if the Proposed Project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

  – result in a substantial erosion or siltation on- or off-site;

  – substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

  - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

  - impede or redirect flood flows?

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

5.10.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for hydrology and water quality.

5.10.4 Impact Analysis

5.10.4.1 Hydrology and Water Quality Impact Analysis

5.10.4.1.1 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

LSPGC Collinsville Substation

Less-than-Significant Impact. The Proposed Project is not expected to violate any water quality standards or waste discharge requirements. Construction would require ground-disturbing activities that could increase soil erosion rates which, if not properly managed, could potentially result in a violation of water quality standards and impacts to beneficial uses in adjacent or downstream waterbodies. Because ground disturbance associated with the Proposed Project is anticipated to exceed 1 acre, LSPGC would apply for coverage under the Construction General Permit. The Construction General Permit requires submittal of a Notice of Intent; preparation of a Proposed Project-specific SWPPP; and implementation of site-specific BMPs to address materials management, non-storm water discharges, sediment discharges, and erosion controls to meet water quality standards. As part of the SWPPP development process, LSPGC would assess the Proposed Project's risk to water quality—based on site-specific soil characteristics, slope, and the construction schedule—and would implement appropriate BMPs to ensure protection of water quality. The SWPPP would specify measures for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, non-storm water discharge, and the presence of other pollutants. Additionally, applicant-proposed measure (APM) GEO-1, described in Section 5.10.6.2 Cross-Referenced Applicant-Proposed Measures, would ensure soil disturbance is reduced to the extent practicable. Implementation of the SWPPP would be monitored throughout the Proposed Project by a QSD and Qualified SWPPP Practitioner. As a result, impacts to water quality standards or waste discharge requirements would be less than significant.

The proposed LSPGC Collinsville Substation pad would be graded in such a manner to direct runoff into an on-site stormwater detention basin following construction, thereby preventing discharge of runoff to the ephemeral stream near Straton Lane, as well as the downstream Delta.

Materials used during construction (e.g., diesel fuel, hydraulic fluid, oils, grease, and concrete) have the potential to be transported by storm water runoff and threaten aquatic life or groundwater quality in the event of spills or leaching. These materials could violate water quality standards if they contact storm water discharges and/or are transported to nearby water resources or an MS4. All construction personnel would receive environmental awareness training related to this topic, which is required by APM BIO-3 for this Proposed Project and described in Section 5.10.6.2 Cross-Referenced Applicant-Proposed Measures. The general handling, storage, and disposal of potentially hazardous materials are discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety; and specific measures to manage hazardous materials would be addressed in the Proposed Project SWPPP. Further, a Hazardous Materials Management Plan (HMMP) (which includes applicable state and federal regulatory permit information and requires the safe handling, transportation, and storage of any hazardous material on the construction site) would be implemented during construction to avoid and/or minimize impacts to all federal and state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area.

Adhering to the Construction General Permit, SWPPP requirements, and the HMMP, as well as designing site grading to direct runoff to an on-site stormwater detention basin, would ensure compliance with water quality objectives and waste discharge requirements and reduce the likelihood of pollutants discharging to receiving waters as a result of construction of the proposed LSPGC Collinsville Substation. Therefore, impacts would be less than significant.

LSPGC 230 kV Overhead Segment

Less-than-Significant Impact. As presented in Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components and Figure 5.10-1: Hydrologic Features in the Proposed Project Area, W-1 and W-2 would be crossed by the proposed LSPGC 230 kV Overhead Segment. Installation of the transmission line segment would result in temporary disturbance to wetlands, as well as the permanent loss of wetlands. The Proposed Project would result in approximately 2.6 acres of temporary disturbance from work areas and access within wetlands. Topsoil would be removed, salvaged, and replaced in accordance with APM GEO-1; and the wetland areas would be restored in accordance with APM GEO-1. The permanent loss of wetlands from the installation of transmission structures would be less than 0.1 acre. The Proposed Project's SWPPP and HMMP, as well as APM GEO-1 and APM BIO-3, would be implemented to prevent sediment and hazardous materials associated with construction from entering wetlands outside of the areas of temporary disturbance, including Suisun Marsh. Due to the small area of permanent wetland loss and with the adherence to permit conditions, impacts would be less than significant.

LSPGC would secure the following permits for the installation of the proposed LSPGC 230 kV Overhead Segment:

- USACE Section 404 Permit for the discharge or placement of fill within waters of the U.S.

- SWRCB Section 401 WQC for activities that require a federal authorization and may result in impacts to waters of the U.S.
- NPDES Construction General Permit for projects disturbing 1 acre or more of land.

The USACE Section 404 Permit requires the applicant to take steps to minimize and avoid impacts to wetlands (e.g., Suisun Marsh), and provide compensation for the permanent loss of wetlands. The SWRCB Section 401 WQC regulates discharges of dredged or fill material to Waters of the State and requires the applicant to adhere to the Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures). The Procedures include, but are not limited to, providing the location and identification number of the specific wetlands and/or waterbodies that may be impacted, their associated beneficial uses, the quantity of potential impacts, the preparation of an alternative analysis, and potential compensation mitigation for impacts. The NPDES Construction General Permit requires project owners to implement BMPs that are designed to minimize the potential for sediment erosion and discharge to wetlands and other waterbodies. BMPs may include, but are not limited to construction activity scheduling, use of silt fences, gravel bag check dams, spill containment and management, wind erosion prevention, and material stockpile management.

The permits described previously would include conditions that would be implemented to avoid and minimize impacts to water quality. Therefore, with the adherence to permit conditions, impacts would be less than significant.

Construction activities would be conducted, and all necessary permits would be secured, in accordance with the Delta Protection Act of 1992, the Delta Plan under the Sacramento-San Joaquin Delta Reform Act of 2009, CDFW Code Sections 1601 through 1617, and the applicable RWQCB basin plans.

LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. Construction of the proposed LSPGC 230 kV Submarine Segment would cross the Delta from the bank of the Montezuma Hills region in the north, and run along the river floor across the confluence of the Sacramento and San Joaquin rivers to the shoreline near PG&E's existing Pittsburg Substation in the City of Pittsburg, as presented in Figure 5.10-1: Hydrologic Features in the Proposed Project Area. A hydroplow and water-jetting equipment would be used to bury the cable 6 to 15 feet below the sediment surface, or as directed by regulatory requirements. This construction process would fluidize the sediment within the furrow generated by the hydroplow to achieve the necessary burial depth. Approximately 75 percent of sediments would remain in the furrow, thereby reducing the amount of turbidity in the water column. It is anticipated that no additional materials would be discharged to the river during construction of the proposed LSPGC 230 kV Submarine Segment. Impacts would be limited to the benthic community and would be temporary during construction.

The in-river transition structure that would transition the proposed LSPGC 230 kV Overhead Segment to the Submarine Segment would be installed within the Sacramento River, approximately 110 feet from its northern bank. The structure would include the installation of approximately eight to twelve 18- to 30-inch-diameter piles driven into the river floor and extending above the high tide mark. An approximately 18 to 48 inches thick concrete cap, measuring approximately 40 feet wide by 130 feet long, would then be constructed on top of the

piles. This cap would support the transition structure. Pile installation would cause approximately 59 square feet in permanent impacts to the Delta floor, as well as a temporary increase in turbidity in the immediate area around their installation. Turbidity from pile driving activities would likely be limited to a small area (i.e., within 150 to 200 feet of the pile) and would typically dissipate within 1 hour or would be swept away and diluted by tidal exchange (USFWS 2013). Thus, impacts to water quality from pile-driving activities would be less than significant. Further, LSPGC would secure the following permits and agreements for the installation of the proposed LSPGC 230 kV Submarine Segment and in-river transition structure:

- USACE Section 10 Permit for construction within navigable waters of the U.S.
- CDFW Section 1600 Lake and Streambed Alteration Agreement (LSAA).
- BCDC Major Permit for work occurring within the Primary Management Area of the Suisun Marsh.
- SWRCB Section 401 WQC for activities that require a federal authorization and may result in impacts to waters of the U.S.
- USACE Section 404 Permit for the discharge or placement of fill within waters of the U.S.
- USACE Section 408 Approval for alterations or use of the dredged channel, which is a USACE civil works project.

As previously described in Section 5.10.2.1 Regulatory Setting, the USACE Section 10 Permit applies only to the main navigable water (i.e., the Delta) and not the associated tributaries, and it requires project review and authorization from the USACE. The CDFW Section 1600 LSAA requires the applicant to submit the location of the project; identification of the lake, river, or stream that may be affected; a detailed project description with construction drawings; a copy of any other pertinent local, state, or federal permits; and measures to protect threatened or endangered species.

As discussed previously in Section 5.10.2.1 Regulatory Setting, the proposed LSPGC 230 kV Submarine Segment would be located within the Primary Management Area of the Suisun Marsh Protection Plan and would require a Major Permit from the BCDC. Additionally, construction activities would be conducted in accordance with the Delta Protection Act of 1992 and the applicable RWQCB basin plans. These permits would require additional measures to avoid and minimize potential impacts to water quality.

Thus, due to the relatively small area of disturbance of the riverbed and with the adherence to all permit conditions, impacts would be less than significant.

As described in Chapter 3 – Project Description, the hydroplow method of construction would be utilized to the extent feasible. The open-cut trenching method of construction would be used to complete the submarine cable installation from the shore to the proposed utility vault.

Excavation would likely begin by grading back the shoreline for the jet sled to be pulled up onto the shore. Approximately 100 feet from the shoreline, a trench would be excavated that is approximately 155 feet wide, 90 feet long, and 11 feet deep. This trench may encroach to a small degree upon the shoreline and disturb soil within the river. Should excavation occur within the marine environment, it is expected to contribute to an increase in localized water turbidity from

mobilization of substrate during trenching and cable installation. Within the Delta, turbidity is generally between 20 and 40 nephelometric turbidity units (NTUs) and can increase to as high as 250 to 500 NTUs during high flows or during summers when winds stir light sediments (DWR 2013). Studies of turbidity in San Francisco Bay showed that turbidity associated with dredging (an activity which causes similar levels of disturbance to benthic environments as hydroplows or excavators for the dredging process) typically diminish to background levels within a radius of approximately 600 feet within one tidal cycle for singular events (USACE 2015).

The actual distance that construction-related suspended sediment would move is dependent on multiple factors (i.e., tide, river outflows, and wind conditions); however, it is anticipated that the area affected and the duration of turbidity increases resulting from cable installation would be similar to turbidity increases resulting from dredging. Elevated turbidity due to in-water work may create temporary conditions that are unsuitable for some fish species in the immediate vicinity of the work area. These conditions are anticipated to be temporary and would resolve to background conditions shortly after the conclusion of trenching. As noted previously, turbidity in the waters within and surrounding the Proposed Project area can vary substantially under natural conditions as a result of the dynamic hydrological conditions in San Francisco Bay and the Delta. Turbidity can vary with incoming and outgoing tides, as a result of windy conditions, storm flows, and passing boats under existing conditions.

The in-river trenching is anticipated to take approximately 140 days to complete. To reduce potential water quality impacts, metal sheeting would be driven into the substrate parallel to the submarine cable near the southern shore of the Delta. In addition, APM HYD-1 would require the use of an in-water sediment control BMP in the immediate area of trenching during construction to reduce the amount of sediment disturbance and discharge in the marine environment. Additionally, APM BIO-22 and APM BIO-23 would be implemented to ensure no hazardous or toxic materials are used in the process, and the sediments would be tested prior to excavation to ensure contaminated sediment is not released into the water column. With the implementation of these APMs, impacts would be less than significant.

LSPGC 230 kV Underground Cable

Less-than-Significant Impact. The proposed LSPGC 230 kV Submarine Segment would transition to the proposed LSPGC 230 kV Underground Segment at an onshore underground utility vault. Underground duct banks would carry the transmission cables from the utility vault to approximately two new riser poles adjacent to PG&E's existing Pittsburg Substation. The duct banks would be constructed using the open-cut method of construction. All appropriate shoring and construction methods would be utilized to ensure the prevention of erosion and sedimentation, in accordance with the Proposed Project's SWPPP and the Construction General Permit. If shallow groundwater is encountered during trenching in the terrestrial environment, dewatering may occur. Dewatering would be conducted and managed in accordance with all applicable local and state permit requirements. Therefore, impacts to water quality objectives and waste discharge requirements would be less than significant.

LSPGC Telecommunications Line

Less-than-Significant Impact. The proposed LSPGC Telecommunications Line would be installed using horizontal directional drilling (HDD) methods along the route depicted in

Attachment 3-A: Detailed Route Map. No wetlands or linear water features are located along the proposed route. It would be possible for a frac-out to occur during the HDD process, resulting in the potential for drilling mud to discharge to the local MS4; however, limited drilling fluid would be required for this type of HDD and appropriate BMPs associated with the Proposed Project's SWPPP would be applied in the vicinity of this work. As a result, impacts would be less than significant.

PG&E 500 kV Interconnection

No Impact. As presented in Table 5.10-2: Potentially Jurisdictional Linear Water Features Crossed by Proposed Project Component, one ephemeral stream would be spanned by the proposed PG&E 500 kV Interconnection; however, no temporary or permanent impacts are anticipated within or adjacent to the stream, as shown in Section 5.4 Biological Resources, Figure 5.4-1: Vegetation Communities and Land Cover Types. Erosion and sedimentation impacts would also be prevented by adhering to the PG&E Proposed Project SWPPP, as discussed in Section 5.10.7 PG&E Construction Measures. Therefore, no impact would occur.

PG&E 12 kV Distribution Line

Less-than-Significant Impact. As presented in Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components and Figure 5.10-1: Hydrologic Features in the Proposed Project Area, W-5, W-6, and W-7 would potentially be crossed by the proposed PG&E 12 kV Distribution Line. Temporary and permanent wetland impacts would occur from the installation of approximately 21 new wood pole structures; however, impacts would be limited to the relatively small diameter of the poles (approximately 1.5 feet). The Proposed Project would result in approximately 0.2 acre of temporary disturbance from work areas within wetlands. Permanent wetland impacts from pole installation would be approximately 0.1 acre. PG&E's Construction Measure (CM) HYD-1, which would require micro-siting the poles to avoid wetland features to the extent possible, would reduce the potential wetland impacts. Further, impacts associated with the distribution line would be permitted by the USACE, RWQCB, and CDFW, where applicable; and all permit requirements (including measures to protect water quality) would be followed. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Components

Less-than-Significant Impact. O&M activities may include use of materials that have the potential to contribute new pollutant sources, including, but not limited to oils, paints, and solvents. O&M activities for the LSPGC and PG&E Proposed Project components would be similar in nature to those occurring presently in the area and would not be anticipated to result in substantial water quality degradation. All materials would be applied, stored, and disposed of with appropriate containment in a manner consistent with manufacturer recommendations by licensed professionals, if necessary, and in accordance with applicable regulations. No additional ground disturbance is anticipated during O&M, and the LSPGC and PG&E Proposed Project components would not include any planned or routine discharges of potential water pollutants. Thus, operation of the LSPGC and PG&E Proposed Project components would not violate any water quality standards or waste discharge requirements, nor would it otherwise substantially degrade surface water or groundwater quality. Therefore, impacts would be less than significant.

5.10.4.1.2 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction

LSPGC and PG&E Components

Less-than-Significant Impact. Water required for construction is expected to be pumped from a nearby well, which has sufficient supplies to meet the demand of the LSPGC and PG&E Proposed Project components, purchased from private sources, and/or trucked on site from local water districts. It is estimated that approximately 6 million gallons, or approximately 18 acre-feet, of water would be used for construction purposes during the approximately 24-month construction process as described in Chapter 3 – Project Description. The amount of water required for the Proposed Project would represent approximately 0.008 percent of the approximately 230,000 acre-feet of groundwater pumped from the Solano Subbasin for agricultural purposes in Water Year 2022 (Solano Collaborative 2023); as a result, this amount is not expected to have a significant impact on water resources. Water required for construction in the City of Pittsburg would be sourced from Delta Diablo and the Contra Costa Water District, both of which have capacity to provide water services in their areas for the next 50 years, including provisions for industrial projects. As a result, impacts would be less than significant.

The LSPGC and PG&E Proposed Project components would increase impervious surface cover due to construction of the proposed LSPGC Collinsville Substation and new structures along the proposed transmission line and interconnection. The proposed LSPGC Collinsville Substation would be designed to meet all state and local design requirements for storm water retention to minimize the potential for discharges from the site impacting surface or groundwater quality in the Proposed Project area. Most of the proposed LSPGC Collinsville Substation site would be covered by gravel, which would allow percolation of water into the ground. Only the foundations, buildings, and improved driveways would reduce the surface area for groundwater recharge; and these areas total approximately 11 acres.

A stormwater detention basin is planned for the proposed LSPGC Collinsville Substation that would be approximately 350 feet wide by 85 feet long, and 6 feet deep, for a total of approximately 174,800 cubic feet. The proposed LSPGC Collinsville Substation pad would be sloped to allow for sheet-flow from north to south to facilitate drainage to a proposed stormwater detention basin on the southern side of the substation. The size of each transmission structure would be relatively small and would not be anticipated to have an appreciable effect on the groundwater recharge in the area. Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC Components

No Impact. In general, quarterly inspections would be performed on the proposed LSPGC Collinsville Substation, and a small, specialized team would be utilized to perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment

would not require planned maintenance. When on-site O&M activities need to occur, personnel would be responsible for providing their own drinking water. O&M activities would not change the imperviousness of surface areas. As a result, no additional ground water supplies would be required and no impact would occur.

PG&E Components

No Impact. PG&E maintains existing transmission facilities in the Proposed Project vicinity. Maintenance activities would continue as they currently do and would not change. No additional groundwater supplies are anticipated to be required for the existing O&M procedures. Therefore, no impact would occur.

5.10.4.1.3 Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on-site or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?

Construction

LSPGC Components

Less-than-Significant Impact. Both temporary and permanent impacts would occur due to construction of the LSPGC Proposed Project components. As listed previously in Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components, four wetland features would be crossed by the proposed LSPGC 230 kV Overhead Segment. Additionally, the Delta would be crossed by the proposed LSPGC 230 kV Submarine Segment, including the in-river transition structure, as presented in Table 5.10-2: Potentially Jurisdictional Linear Water Features Crossed by Proposed Project Component. Structures associated with the proposed LSPGC 230 kV Overhead Segment would be installed within wetlands within the Proposed Project area. As previously discussed, these structures are not anticipated to alter flows or contribute to water quality degradation as their footprint of impervious surface would be limited to less than 0.1 acre. Similarly, the proposed in-river transition structure would have permanent impacts to the marine environment. However, these impacts would be limited to the total area of the approximately eight to 12 piles installed within the river floor (approximately 59 square feet, or less than 0.01 acre), and flows would not be impeded by the structure.

As described previously, the storm water drainage systems on the proposed LSPGC Collinsville Substation site would be designed to direct sheet flow to a stormwater detention basin where they would be allowed to percolate into the ground. Vegetation removal would be required at the proposed substation site and areas along the access roads and transmission structure sites. Any cut-and-fill slopes would be stabilized during construction with BMPs as outlined in the Proposed Project SWPPP. With appropriate grading of the Proposed Project sites and the implementation of the SWPPP, substantial erosion is not anticipated to occur. Likewise, the

Proposed Project would not impede flood flows because the LSPGC Proposed Project components would be designed to allow flow through or around the components. As a result, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. Both temporary and permanent impacts would occur due to construction of the PG&E Proposed Project components. As identified previously in Table 5.10-1: Potentially Jurisdictional Wetland Features Crossed by Proposed Project Components, three wetland features would be crossed by the proposed PG&E 12 kV Distribution Line. Additionally, one ephemeral stream would be crossed by the proposed PG&E 500 kV Interconnection as presented in Table 5.10-2: Potentially Jurisdictional Linear Water Features Crossed by Proposed Project Component. Structures associated with the proposed PG&E 12 kV Overhead Line would be installed within wetlands in the Proposed Project area. As previously discussed, CM HYD-1 would be implemented to limit the extent of permanent impacts to the wetlands. Further, these structures are not anticipated to alter flows or contribute to water quality degradation as their footprint of impervious surface would be limited to less than 0.1 acre. Additionally, the Proposed Project would not impede flood flows because the PG&E Proposed Project components would be designed to allow flow through or around the components. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. O&M of the LSPGC and PG&E Proposed Project components would be similar in nature to O&M of existing nearby PG&E utility infrastructure and would not involve any activities that would require the alteration of drainage patterns or the increase of impervious surfaces. Maintenance would be performed by small crews traveling on established access roads and would typically involve conductor washing and general structure maintenance. Therefore, no impact would occur.

5.10.4.1.4 Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As previously discussed in Section 5.10.1.6 Floodplains, the proposed LSPGC Collinsville Substation would be located just outside of a flood hazard zone; however, the proposed LSPGC 230 kV Overhead Segment would be partially located within flood hazard zone AE (FEMA 2023). Given that only the overhead transmission lines would potentially be inundated by a flood, and all components containing hazardous materials within the proposed LSPGC Collinsville Substation would be located outside of the flood hazard zone, the likelihood that pollutants would be released due to inundation during Proposed Project construction or O&M activities is low. Additionally, a portion of the proposed LSPGC Telecommunications Line located within Contra Costa County would be constructed within flood hazard zone AE (FEMA 2023); however, these facilities would be located underground

and do not pose a substantial risk of releasing pollutants due to inundation. As a result, impacts would be less than significant.

PG&E Components

No Impact. The PG&E Proposed Project components would not be located within a flood hazard zone, any identified tsunami inundation or run-up area, or a basin subject to seiche (FEMA 2023). Therefore, no impact would occur from construction or O&M of the Proposed Project.

5.10.4.1.5 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would not conflict with or obstruct implementation of the Central Valley RWQCB or San Francisco Bay RWQCB Basin Plans nor any sustainable groundwater management plan. Groundwater may be encountered and/or utilized during construction of the LSPGC and PG&E Proposed Project components; however, use of or discharge of groundwater would be in coordination with the Solano Collective, and sufficient groundwater supply exists to accommodate use during construction, as described further in Section 5.10.1.5 Groundwater Management and Section 5.19 Utilities and Service Systems. The LSPGC and PG&E Proposed Project components would not require the construction or relocation of water infrastructure. Water used during construction in Solano County would be supplied from an existing well, purchased from private sources, and/or trucked on site from local water districts. The LSPGC and PG&E Proposed Project components within Solano County would be located within the Sacramento Valley Groundwater Basin, an underground water source estimated to have a storage capacity of approximately 74 billion gallons. Water used for construction of the proposed LSPGC Proposed Project components in the City of Pittsburg would be purchased from Delta Diablo and the Contra Costa Water District and trucked on site. Construction activities planned in Sacramento County would occur within the Sacramento River and would not require additional water to be brought on site. O&M of the LSPGC and PG&E Proposed Project components would not require significant supplies of water as the proposed substation would be unmanned and remotely operated. Routine maintenance of the LSPGC and PG&E Proposed Project components could include washing equipment, but water used for washing would be minimal and would not have a substantial impact on the water supply. Therefore, no impact would occur.

5.10.4.2 Hydrostatic Testing

Hydrostatic testing would not occur as part of the Proposed Project.

5.10.4.3 Water Quality Impacts

Potential water quality impacts associated with the Proposed Project are addressed in Section 5.10.4.1 Hydrology and Water Quality Impact Analysis.

5.10.4.4 Impermeable Surfaces

Impacts related to impermeable surfaces associated with the Proposed Project are addressed in Section 5.10.4.1 Hydrology and Water Quality Impact Analysis.

5.10.4.5 Waterbody Crossings

The Proposed Project crosses the Delta, which is a CWA Section 303(d)-listed impaired waterbody for chlordane, DDT, dieldrin, dioxin compounds (2,3,7,8), furan compounds, invasive species, mercury, PCBs, and selenium (SWRCB 2022). Potential impacts associated with this waterbody crossing are addressed in the impact analysis in Section 5.10.4.1 Hydrology and Water Quality Impact Analysis.

5.10.4.6 Groundwater Impacts

The Sacramento Valley Groundwater Basin is currently designated as medium priority and is managed by the Solano Collective, as previously described in Section 5.10.1.5 Groundwater Management. The Solano Collective has adopted the Solano Subbasin Groundwater Sustainability Plan (GSP). Implementation of the GSP involves regular monitoring and reporting on conditions in the subbasin and performing management actions indicated in the GSP. Implementing the GSP ensures impacts from construction projects within the Sacramento Valley Groundwater Basin are mitigated and the groundwater in the region remains a sustainable resource. Additionally, water would not be required for operation of the Proposed Project, and water needs for maintenance activities would be minimal and limited to equipment washing and conductor washing that would not be anticipated to have a significant impact on groundwater supplies, as these activities would be similar to the current maintenance performed by PG&E in this area. As described previously, construction water demand would not result in the depletion of groundwater supplies or interfere with sustainable groundwater management of any of the underlying groundwater basins.

5.10.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for hydrology and water quality.

5.10.6 Applicant-Proposed Measures

5.10.6.1 Hydrology and Water Quality Applicant-Proposed Measures

The following APM would be implemented to reduce hydrology and water quality impacts associated with the LSPGC Proposed Project components:

- **APM HYD-1: Utilize In-Water Sediment Containment during Open Trenching in Marine Environments.** In-water sediment control BMPs (e.g. sediment curtains, silt barriers, turbidity curtains, or similar technologies) would be utilized when open trenching would occur in marine environments to reduce the amount of disturbed sediment discharged to the surrounding area and to reduce potential short-term impacts from mobilized sediment on surrounding benthic environments.

5.10.6.2 Cross-Referenced Applicant-Proposed Measures

The following cross-referenced APMs would be implemented to reduce hydrology and water quality impacts associated with the LSPGC Proposed Project components:

- **APM BIO-3: Worker's Environmental Awareness Program.** All workers on the Proposed Project site would be required to attend a Worker's Environmental Awareness Program (WEAP) training. The training would inform all construction personnel of the resource protection and avoidance measures, as well as procedures to be followed upon the discovery of environmental resources. Additionally, the WEAP would train all construction personnel on hazardous materials management, hazardous wastes and stained or odiferous soils identification, and applicable regulations. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations:

  – Environmentally sensitive area boundaries,
  – Housekeeping (i.e., trash and equipment cleaning),
  – Safety,
  – Work stoppage,
  – Communication Protocol, and
  – Consequences of non-compliance.

- **APM BIO-22: Aquatic Sediment Screening and Testing.** Prior to installation of cables, screening of the cable alignment based on available background resources (e.g., EnviroStor) would be conducted to determine if there have been any known spills or other hazardous materials releases that potentially intersect with the alignment. If any known spills or other hazardous materials releases are discovered, an aquatic sediment screening and testing program would be developed to evaluate the risk of exposing hazardous sediments to the marine environment. The program would entail the following:

  – Representative aquatic sediment samples would be collected at a minimum of three locations placed evenly along the alignment. The depth of the samples would be consistent with the depth of trenching at each sample location.

  – Sediment samples would be tested according to methods prescribed in the Guidelines for Implementation of the Inland Testing Manual in San Francisco Bay or updated similar manual approved by the San Francisco Bay Dredge Material Management Office (DMMO) (DMMO 2001). The results of this test would be compared to concentrations allowed for in-bay disposal by the San Francisco Bay DMMO to determine if sediments are clean or require special handling.

  – Aquatic sediments that exceed San Francisco Bay DMMO testing standards would:

    - Be avoided by the cable installation route, or
    - Be removed through dredging and disposed of at an appropriate facility approved by the RWQCB, or

  - Be controlled via use of a silt curtain or other appropriate BMP approved by the RWQCB.
  - Cable installation and hydroplow use would be limited to the specified areas and the minimum length necessary.

- **APM BIO-23: Aquatic Spill Prevention and Control.** A spill prevention and control plan would be developed and implemented for the Proposed Project throughout all phases of construction. This plan at a minimum would include the following parameters to reduce potential effects from spills:

  – Procedures to ensure any equipment used in water (e.g., hydroplow or excavators) are cleaned of excess lubricants and fuels.
  – Identification of any hazardous materials used by the Proposed Project.
  – Storage locations and procedures for such materials.
  – Spill prevention practices, as well as BMPs, employed for various activities.
  – Requirements to inspect equipment daily to ensure it is maintained to be free of leaks.
  – Spill kit location, cleanup, and notification procedures.

- **APM GEO-1: Geological Hazards and Disturbance to Soils.** The following measures would be implemented during construction to minimize impacts from geological hazards and disturbance to soils:

  – Keep vehicles and construction equipment within the limits of the Proposed Project and in approved construction work areas to reduce disturbance to topsoil.

  – Salvage any disturbed topsoil during temporary grading activities to a maximum depth of 6 inches or to the actual depth if shallower (as identified in a site-specific geotechnical engineering report) to avoid the mixing of soil horizons.

  – Avoid construction in areas with saturated soils where topsoil salvage has not occurred whenever practical to reduce impacts to soil structure and allow safe access. Similarly, avoid topsoil salvage in saturated soils to maintain soil structure.

  – Keep topsoil material on site in the immediate vicinity of the temporary disturbance or at a nearby approved work area to be used in restoration of temporarily disturbed areas. Recontour temporarily disturbed areas following construction to match pre-construction grades. Site and manage on-site material storage in accordance with all required permits and approvals.

  – Keep vegetation removal and soil disturbance to a minimum and limited to only the areas needed for construction and to provide adequate vegetation removal to meet electrical clearance and wildfire prevention requirements. Dispose of removed vegetation off site at an appropriate licensed facility, or it can be chipped on site to be used as mulch during restoration.

5.10.7 PG&E Construction Measures

5.10.7.1 Hydrology and Water Quality PG&E Construction Measures

The following CMs would be implemented to reduce hydrology and water quality impacts associated with the PG&E Proposed Project components:

- **CM HYD-1: Micro-Site Distribution Poles.** The distribution poles associated with the proposed PG&E 12 kV Distribution Line would be micro-sited in a manner that minimizes permanent impacts to sensitive wetland resources located along the alignment as a result of pole siting to the extent feasible. In the event that it is not possible to site poles in a manner that avoids impacts to wetlands, all appropriate permits would be obtained and any associated permit conditions would be implemented.

- **CM HYD-2: Prepare and Implement a Stormwater Pollution Prevention Plan.** PG&E would prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP would include a list of BMPs to be implemented in areas with potential to drain to any water body. BMPs to be part of the Proposed Project-specific SWPPP may include, but are not limited to, the following control measures:

  – Implementing temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) to control erosion from disturbed areas.

  – Protecting drainage facilities in downstream off-site areas from sediment using appropriate BMPs.

  – Protecting the quality of surface water from non-stormwater discharges such as equipment leaks, hazardous materials spills, and discharge of groundwater from dewatering operations.

  – Restoring disturbed areas, after Proposed Project construction is completed, unless otherwise requested by the landowner in agricultural land use areas.

5.10.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to hydrology and water quality associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not alter any surface water features or increase flood risk within the Proposed Project area. Additionally, the modification area would not conflict with local hydrology and water quality plans. As such, the potential modification would not result in impacts due to conflicts with hydrology and water quality policies or regulations, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.11 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Physically divide an established community?				✓
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			✓	

This section describes the land uses in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.11.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.11.1.1 Land Use

5.11.1.1.1 Proposed LSPGC Collinsville Substation

The proposed LSPGC Collinsville Substation would be located on privately owned land in the unincorporated community of Collinsville, which is in southeastern Solano County. The surrounding land uses include natural resource land areas (e.g., the Suisun Marsh and the Delta), utility operations, residences, wind farms, and agricultural lands (Solano County 2008). Section 5.2 Agriculture and Forestry Resources details the agricultural resources in the Proposed Project area. Residential homes are located in the southern Collinsville area along Collinsville Road, approximately 0.7 mile southeast of the proposed LSPGC Collinsville Substation. A commercial

and residential area is located approximately 4 miles northeast of the proposed LSPGC Collinsville Substation site at the Collinsville Road and Birds Landing Road intersection.

The proposed LSPGC Collinsville Substation would be within the Collinsville-Montezuma Hills Wind Resource Area (WRA) in Solano County (Sacramento Municipal Utilities District [SMUD] 2023). Numerous operating wind energy facilities are in the Collinsville-Montezuma Hills WRA, including Shiloh I, II, III, and IV; EDF Renewable V; Labrisa; High Winds; Montezuma I and II; and Solano Wind Project Phases 1, 2, and 3 (SMUD 2019). The proposed LSPGC Collinsville Substation would not be located on a parcel with any existing wind turbine or wind energy facilities.

5.11.1.1.2 Transmission Lines

Proposed LSPGC 230 kV Overhead Segment

The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over agricultural lands, Stratton Lane, and marsh lands for approximately 0.4 mile before reaching the proposed in-water transition structure at the northern edge of the Sacramento River.

Proposed LSPGC 230 kV Submarine Segment

The proposed LSPGC 230 kV Submarine Segment would begin at the in-water transition structure and travel through the Delta waterways for approximately 4.5 miles before reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg, approximately 0.1 mile northwest of PG&E's existing Pittsburg Substation.

Proposed LSPGC 230 kV Underground Segment

A proposed onshore underground utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend approximately 0.3 mile and terminate at PG&E's existing Pittsburg Substation. The proposed LSPGC 230 kV Underground Segment would be in an industrial area approximately 0.8 mile west of the Pittsburg Marina. Undeveloped lands are located approximately 0.2 mile west and southwest, and residential areas are located approximately 0.4 mile to the east and southeast.

Proposed PG&E 500 kV Interconnection

The proposed PG&E 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line for approximately 1.5 miles and interconnect to the proposed LSPGC Collinsville Substation.

The proposed PG&E 500 kV Interconnection would be in the same area as the proposed LSPGC Collinsville Substation, and consequently would have the same surrounding land uses described in Section 5.11.1.1.1 Proposed LSPGC Collinsville Substation. The PG&E 500 kV Interconnection would be located entirely on agricultural land and within the Collinsville-Montezuma Hills WRA. The closest wind turbine would be approximately 0.2 mile west of the proposed PG&E 500 kV Interconnection.

5.11.1.1.3 Proposed LSPGC Telecommunications Line

The proposed LSPGC Telecommunications Line would travel through residential and industrial areas of the City of Pittsburg. The proposed LSPGC Telecommunications Line would travel from an existing fiber optic cable adjacent to the Marina Community Center through a residential neighborhood along Marina Boulevard and Halsey Way for approximately 0.4 mile before turning and extending through Halsey Court. As the proposed LSPGC Telecommunications Line travels along Halsey Way, a segment of it would extend to an existing fiber optic cable adjacent to St. Peter Martyr School. At the end of Halsey Court, the proposed LSPGC Telecommunications Line would turn and enter the industrial area where PG&E's existing Pittsburg Substation is located. The proposed LSPGC Telecommunication Line would travel adjacent to PG&E's existing Pittsburg Substation until terminating at the proposed fiber hub north of PG&E's existing Pittsburg Substation. Residential homes, recreational parks, commercial areas, educational facilities, and industrial facilities are within 0.5 mile of the proposed LSPGC Telecommunications Line.

5.11.1.1.4 Proposed PG&E 12 kV Distribution Line

The proposed PG&E 12 kV Distribution Line would extend from the proposed LSPGC Collinsville Substation along Stratton Lane. The proposed PG&E 12 kV Distribution Line would be in the same area as the proposed LSPGC Collinsville Substation, and consequently would have the same surrounding land uses described in Section 5.11.1.1.1 Proposed LSPGC Collinsville Substation.

5.11.1.1.5 PG&E Pittsburg Substation

PG&E's existing Pittsburg Substation is located in an industrial area of the City of Pittsburg surrounded primarily by industrial activities, undeveloped lands to the west and southwest, and residential neighborhoods to the east and southeast. The substation is located in the vicinity of the proposed LSPGC 230 kV Underground Segment, and consequently has the same setting described in the Proposed LSPGC 230 kV Underground Segment section.

5.11.1.2 Zoning and General Plan Land Use Designations

This section describes the general plan land use and zoning designations crossed by the Proposed Project. Although the discussion includes land use and zoning designations assigned by Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg, local agencies do not have jurisdiction over the Proposed Project, as the California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project pursuant to CPUC General Order (GO) 131-D, Section XIV.B. Therefore, local land use and zoning designations are provided for informational purposes only.

Figure 5.11-1: General Plan Land Use Designations within 1 Mile of the Proposed Project portrays the land use designations within 1 mile of the Proposed Project, and Table 5.11-1: General Plan Land Use Designations Crossed by the Proposed Project summarizes the general plan land use designations crossed by the Proposed Project as defined by each county or city in its current general plan. Table 5.11-2: Zoning Designations Crossed by the Proposed Project summarizes the zoning designations crossed by the Proposed Project as defined by each county

or city. Figure 5.11-2: Zoning Designations within 1 Mile of the Proposed Project depicts the zoning designations within 1 mile of the Proposed Project.

Proposed LSPGC Collinsville Substation

The proposed LSPGC Collinsville Substation would be located on land designated as Agriculture by the Solano County General Plan and zoned as Suisun Marsh Agriculture (ASM-160) (Solano County 2008, 2023b). Lands designated as Agriculture provide areas where agriculture is the primary use and allow for secondary uses that support the economic viability of agriculture. ASM-160 Districts are intended to preserve lands best suited for permanent agricultural use and conserve the upland and lowland grasslands adjacent to the Suisun Marsh by ensuring developments are compatible with the Suisun Marsh's protection (Solano County 2008).

Proposed LSPGC 230 kV Overhead Segment

The proposed LSPGC 230 kV Overhead Segment would be on lands designated as Agriculture and zoned as A-160 and ASM-160. The A-160 District preserves agriculture in Solano County by allowing agricultural-related support uses, excluding incompatible uses, and protecting the viability of family farms (Solano County 2023a). Descriptions of the Agriculture land use and ASM-160 zoning designations are provided previously in the Proposed LSPGC Collinsville Substation section.

Proposed LSPGC 230 kV Submarine Segment

The proposed LSPGC 230 kV Submarine Segment would enter the Sacramento River with approximately 0.1 mile of the cable in Solano County waters designated as Water Bodies and Courses and zoned for A-160 (Solano County 2023b). The proposed LSPGC 230 kV Submarine Segment would continue through Sacramento County waters designated for Recreation and zoned as Delta Waterways (DW) for approximately 1.3 miles (Sacramento County 2017, 2023). The proposed LSPGC 230 kV Submarine Segment would cross Contra Costa County waters designated as Water and zoned as an Unrestricted District (U) for approximately 1.0 mile (Contra Costa County 2000, 2023a). Allowable uses in Contra Costa County's Water designation include transport facilities associated with adjacent heavy industrial plants (e.g., ports and wharves) and water-oriented recreation (e.g., boating and fishing) (Contra Costa County 2000). The proposed LSPGC 230 kV Submarine Segment would re-enter Solano County waters designated as Water Bodies and Courses and zoned as Marsh Preservation (MP) for approximately 1.7 miles. The MP District preserves the quality and diversity of marsh habitats by promoting marsh-oriented uses and discouraging uses that may conflict with the long-term preservation and protection of marsh areas (Solano County 2023b). The proposed LSPGC 230 kV Submarine Segment would travel through City of Pittsburg waters with no land use or zoning designation for approximately 0.4 mile before reaching a proposed utility vault located on the southern edge of the Sacramento River in the City of Pittsburg.

Table 5.11-1: General Plan Land Use Designations Crossed by the Proposed Project

County/City	Land Use Designation	Proposed Project Component	Approximate Distance Crossed/Area Covered by the Proposed Project (miles/acres)
Solano County	Agriculture	PG&E 500 kV Interconnection	1.5 miles
		LSPGC 230 kV Overhead Segment	0.8 mile
		LSPGC Collinsville Substation	8.0 acres
		PG&E 12 kV Distribution Line	0.3 mile
	Water Bodies and Courses	LSPGC 230 kV Submarine Segment	1.8 miles
	Marsh	PG&E 12 kV Distribution Line	0.7 mile
	Neighborhood Commercial	PG&E 12 kV Distribution Line	<0.1 mile
Sacramento County	Recreation	LSPGC 230 kV Submarine Segment	1.3 miles
Contra Costa County	Water	LSPGC 230 kV Submarine Segment	1.0 mile
City of Pittsburg	Industrial	LSPGC 230 kV Underground Segment, LSPGC Telecommunications Line, PG&E's Existing Pittsburg Substation	0.9 mile/10.0 acres
	Public/Institutional	LSPGC Telecommunications Line	0.1 mile
	Residential	LSPGC Telecommunications Line	0.5 mile
	Utility/ROW	LSPGC Telecommunications Line	0.2 mile

Sources: Solano County 2008, Sacramento County 2017, Contra Costa County 2000, City of Pittsburg 2001

Table 5.11-2: Zoning Designations Crossed by the Proposed Project

County/City	Zoning Designation	Proposed Project Component	Approximate Distance Crossed/Area Covered by the Proposed Project (miles/acres)
Solano County	A-160	PG&E 500 kV Interconnection	1.5 miles
		LSPGC 230 kV Overhead Segment	0.7 mile
		LSPGC 230 kV Submarine Segment	0.1 mile
		PG&E 12 kV Distribution Line	0.8 mile
	ASM-160	LSPGC Collinsville Substation	11.0 acres
		PG&E 12 kV Distribution Line	0.1 mile
		LSPGC 230 kV Overhead Segment	<0.1 mile
		PG&E 500 kV Interconnection	<0.1 mile
	MP	LSPGC 230 kV Submarine Segment	1.7 miles
Sacramento County	DW	LSPGC 230 kV Submarine Segment	1.3 miles
Contra Costa County	U	LSPGC 230 kV Submarine Segment	1.0 mile
City of Pittsburg	Pedestrian Commercial (CP)	LSPGC Telecommunications Line	<0.1 mile
	Governmental and Quasipublic (GQ)	LSPGC Telecommunications Line	0.1 mile
	Industrial General (I-G)	LSPGC 230 kV Underground Segment, LSPGC Telecommunications Line, PG&E's Existing Pittsburg Substation	0.9 mile/10.0 acres
	Planned Development (PD)	LSPGC Telecommunications Line	0.5 mile

Sources: Solano County 2023b, Sacramento County 2023, Contra Costa County 2023a, City of Pittsburg 2023a

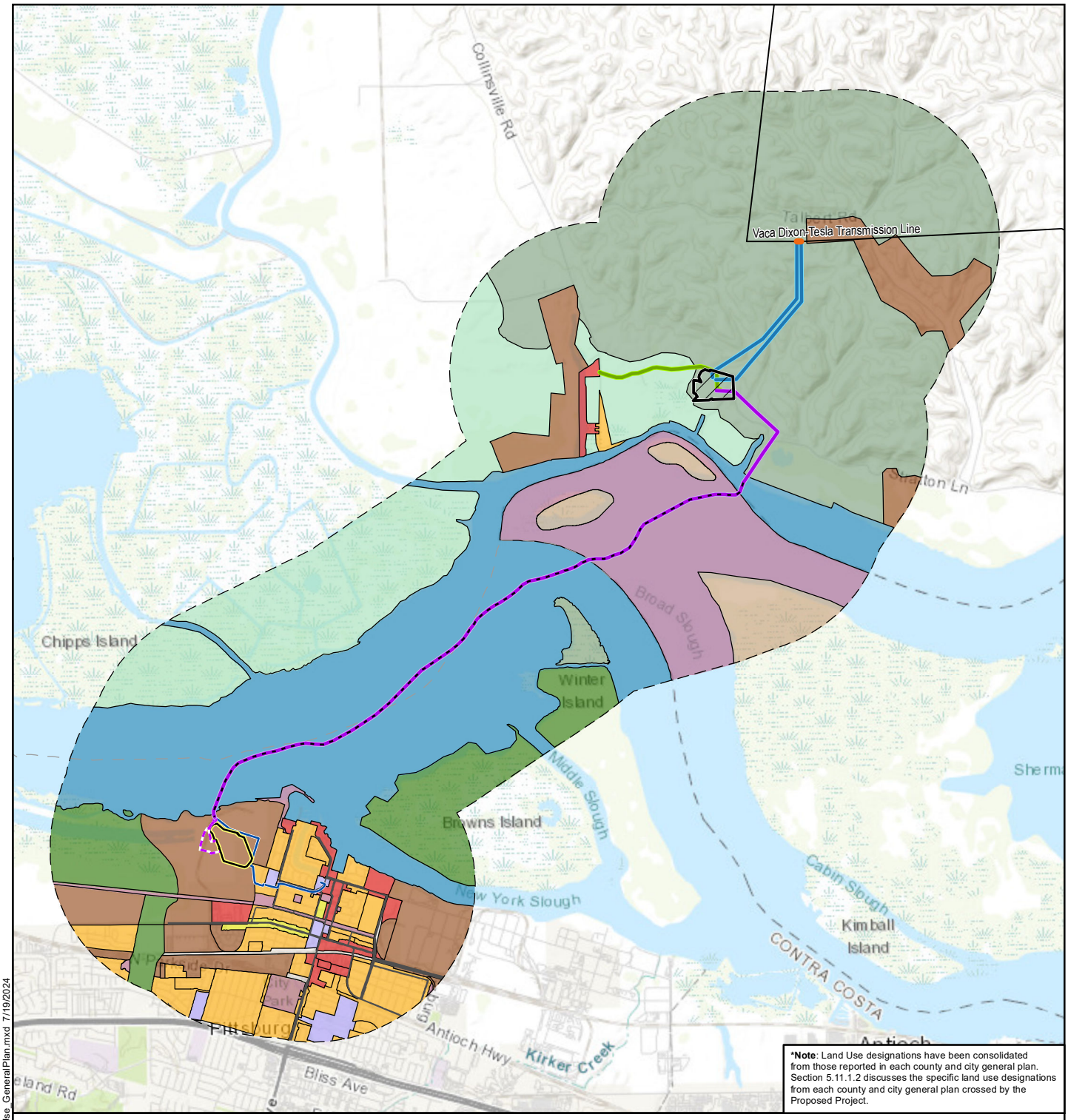

Figure 5.11-1: General Plan Land Use Designations within 1 Mile of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Marsh
- Agriculture
- Open Space
- Industrial
- Natural Preserve
- Public/Institutional
- Recreation
- Water
- Commercial
- Residential
- Mixed Use
- Utility/ROW
- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- 1-Mile Buffer
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation

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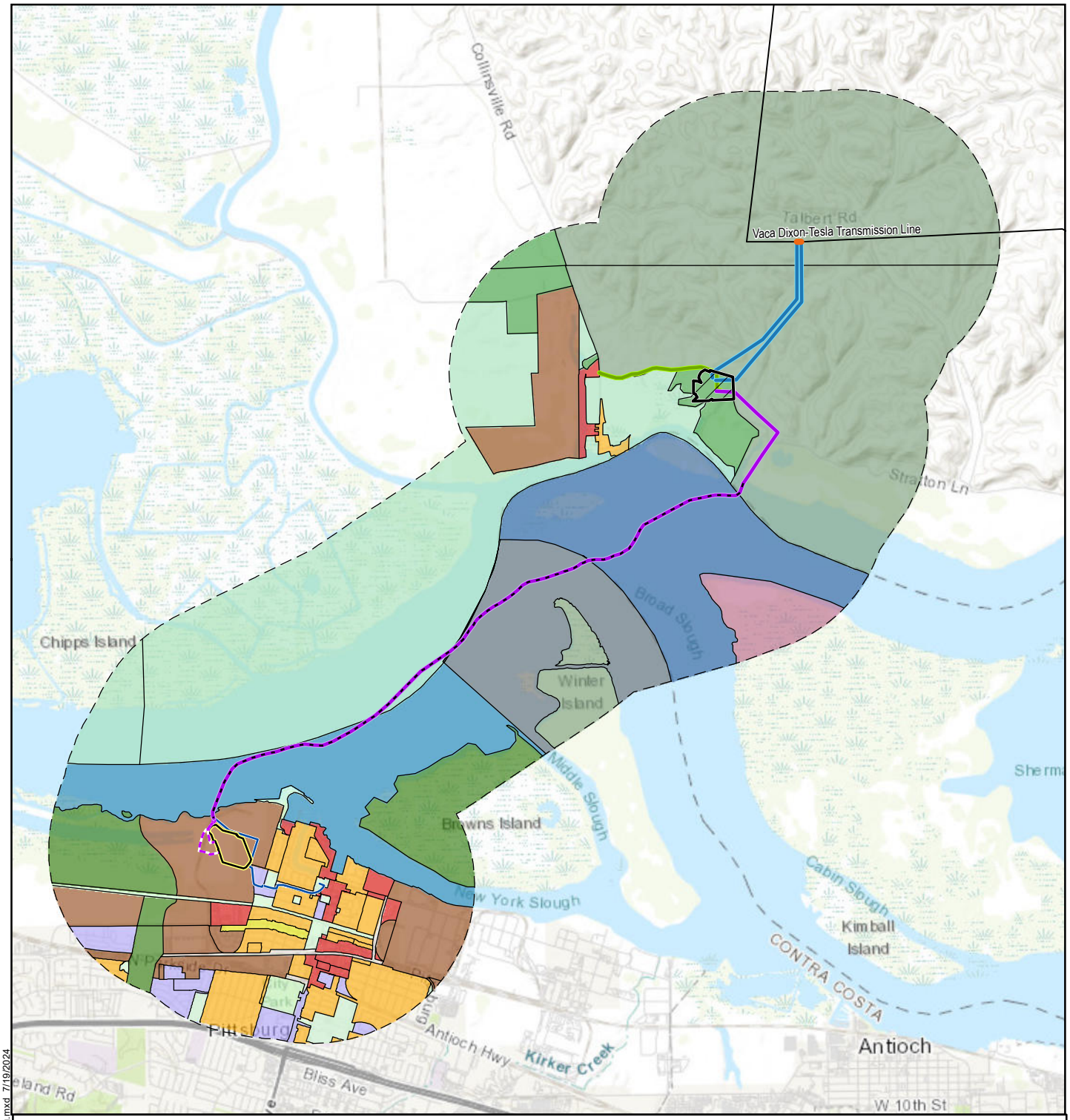

Figure 5.11-2: Zoning Designations within 1 Mile of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Governmental and Quasipublic
- Marsh Preservation
- Agriculture
- Suisun Marsh Agriculture
- Open Space District
- Industrial
- Recreation
- Planned Development
- Water
- Delta Waterways
- Commercial
- Residential
- Mixed Use
- Unrestricted
- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

*Note: Zoning designations have been consolidated from those reported by each county and city. Section 5.11.1.2 discusses the specific zoning designations from each county and city crossed by the Proposed Project.

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Proposed LSPGC 230 kV Underground Segment and PG&E Pittsburg Substation

The proposed LSPGC 230 kV Underground Segment would be within the City of Pittsburg jurisdiction on land designated as Industrial and zoned I-G (City of Pittsburg 2001, 2023a). Additionally, PG&E's existing Pittsburg Substation is on lands designated as Industrial and zoned I-G. The uses permitted in the I-G zone include manufacturing, wholesale, warehousing and distribution, commercial and business services, research and development, storage, and agricultural, food and drug, and industrial processing (City of Pittsburg 2023a).

Proposed LSPGC Telecommunications Line

Starting at an existing fiber optic cable near the Marina Community Center, approximately 0.03 mile of the proposed LSPGC Telecommunications Line would cross land under the jurisdiction of the City of Pittsburg designated as Public/Institutional and zoned for GQ. Lands designated as Public/Institutional and zoned for GQ are intended to provide for schools, government offices, transit sites, public utilities, and other facilities that have a unique public character. The proposed LSPGC Telecommunications Line would then travel along Marina Boulevard and Herb White Way, which is designated as Utility/ROW in the City of Pittsburg's General Plan Land Use Element, for approximately 0.4 mile. Lands designated as Utility/ROW are dedicated to utilities, infrastructure, or road ROW. As the proposed LSPGC Telecommunications Line travels along Marina Boulevard and Herb White Way, it crosses approximately 0.02 mile of lands zoned by the City of Pittsburg as CP, approximately 0.1 mile zoned as GQ, and approximately 0.5 mile zoned as PD. Approximately 0.2 mile of the proposed LSPGC Telecommunication Line would travel along a portion of Marina Boulevard with no zoning designation. The CP zoning designation provides opportunities for pedestrian-oriented retail, entertainment, restaurants, and galleries along the primary ground-floor corridor. Areas zoned as PD are intended to encourage variety in large developments by allowing greater freedom in selecting the means to provide access, light, open space and amenity. Approximately 0.5 mile of the proposed LSPGC Telecommunications Line would travel through Halsey Way on land designated as Downtown Medium Density Residential and zoned for PD. Downtown Medium Density Residential lands are intended to support residential developments, including attached or detached single family townhouses, garden apartments, and other forms of multi-family housing. After exiting Halsey Court, the proposed LSPGC Telecommunications Line would cross lands designated as Industrial and zoned I-G for approximately 0.5 mile before terminating at the proposed fiber hub north of PG&E's existing Pittsburg Substation (City of Pittsburg 2001, 2023a).

Proposed PG&E 500 kV Interconnection

The proposed PG&E 500 kV Interconnection would be on lands designated as Agriculture by the Solano County General Plan and zoned for A-160 and ASM-160. Descriptions of these designations are provided previously in the Proposed LSPGC Collinsville Substation and Proposed LSPGC 230 kV Overhead Segment sections.

Proposed PG&E 12 kV Distribution Line

The proposed PG&E 12 kV Distribution Line would be on Solano County lands designated as Agriculture, Marsh, and Neighborhood Commercial, and zoned A-160 and ASM-160 (Solano County 2008, 2023b). Lands designated as Marsh provide areas for aquatic and wildlife habitat,

marsh-oriented recreational uses, agricultural activities compatible with the marsh environment and marsh habitat, educational and scientific research, educational facilities supportive of and compatible with marsh functions, and restoration of historic tidal wetlands (Solano County 2008). The Neighborhood Commercial designation provides basic daily services for surrounding rural communities, such as the unincorporated community of Collinsville (Solano County 2008).

5.11.1.3 Special Land Uses

5.11.1.3.1 Lands Administered by Federal, State, or Local Agencies, or Private Conservation Organizations

This section discusses the lands administered by federal, state, or local agencies, or private conservation organizations in the Proposed Project area and within 1 mile of the Proposed Project. The proposed LSPGC Collinsville Substation would fall within the Collinsville Special Study Area (CSSA) and the Delta Stewardship Council (DSC) designated Delta lands, Suisun Marsh, and Suisun Marsh Priority Habitat Restoration Area. The proposed PG&E 500 kV Interconnection would fall within the CSSA. The proposed LSPGC 230 kV Overhead Segment would be within the CSSA and the DSC designated Delta lands. The proposed LSPGC 230 kV Submarine Segment would be located within the Delta waterways and Suisun Marsh. The Proposed Project would not cross the Lower Sherman Island Wildlife Area (LSIWA) or Browns Island; however, these areas are within 1 mile of the Proposed Project. Figure 5.11-3: Special Land Uses in the Proposed Project Vicinity depicts the special land uses crossed by the Proposed Project and within 1 mile of the Proposed Project.

Collinsville Special Study Area

The Land Use Element of the Solano County General Plan contains Special Study Areas, which are areas within the county that face unique planning issues (Solano County 2008). The CSSA covers the unincorporated community of Collinsville and has an associated Collinsville Land Use Plan. The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection are located within the CSSA. The objective of the Collinsville Land Use Plan is to maintain the residential character of Collinsville and Birds Landing, retain the possibility for future industrial development outside of the existing community, and protect the condition of Suisun Marsh and other natural resource areas (Solano County 2008).

Delta

The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Submarine Segment, and PG&E 12 kV Distribution Line would be located within the Legal Delta, defined in the DSC's Delta Plan as an area that covers approximately 731,425 acres of land and water and includes parts of Solano County, Sacramento County, Yolo County, San Joaquin County, and Alameda County. The Delta Plan established the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. As described in the Delta Protection Act of 1992, the Delta contains significant natural, cultural, recreational, and agricultural resources that must be enhanced and protected to ensure the use and enjoyment of current and future generations (Public Resources Code [PRC] Section 19.5 2010). The DSC's Delta Plan and the Delta Protection Commission's (DPC's) Land Use and Resource Management Plan for the Primary Zone of the Delta serve as the Delta's

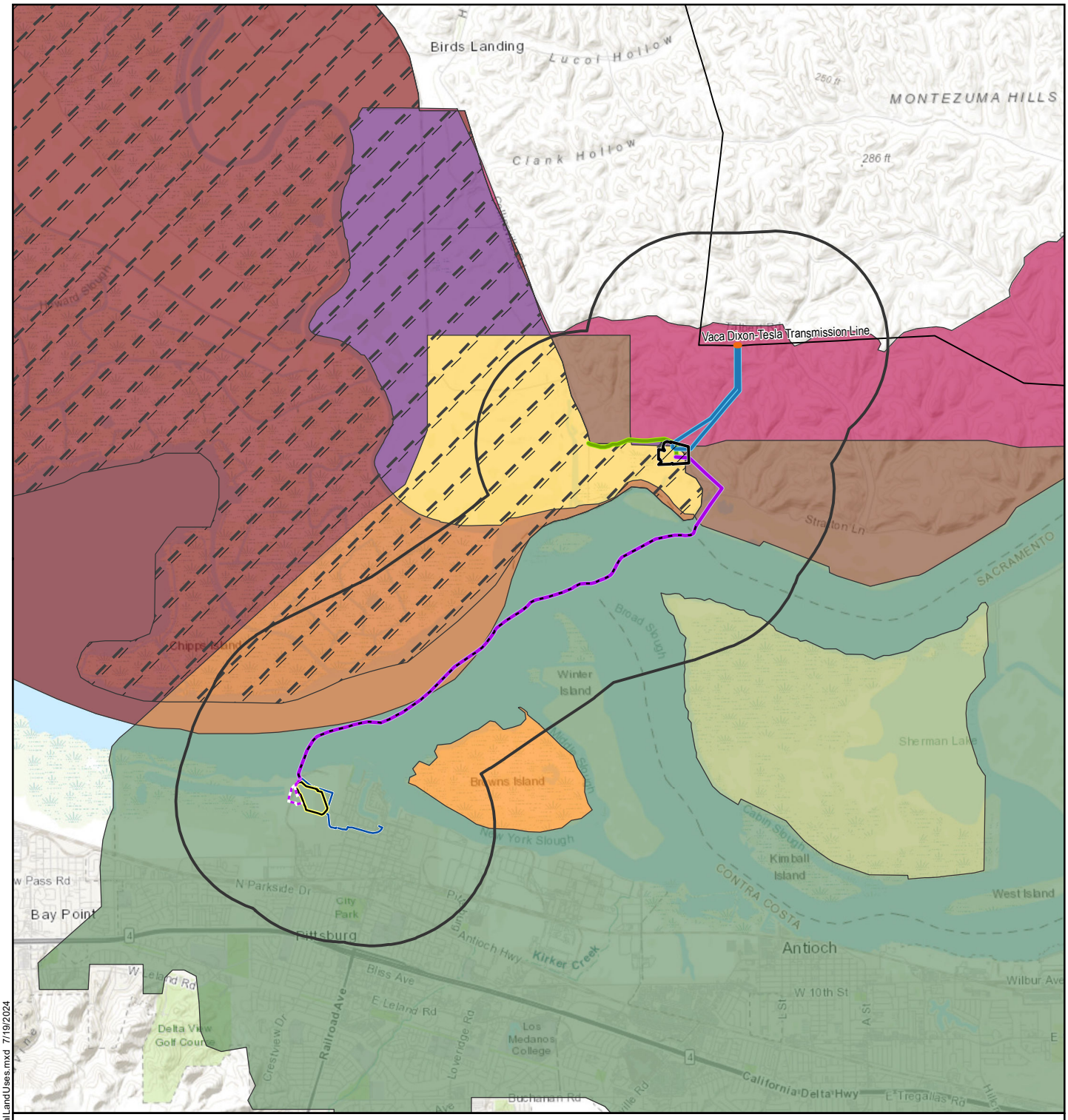

Figure 5.11-3: Special Land Uses in the Proposed Project Vicinity

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- Priority Habitat Restoration Area
- 1-Mile Buffer
- Lower Sherman Wildlife Area
- Delta
- Browns Island
- Collinsville Special Study Area (CSSA)
- Suisun Marsh (SM)
- SM/CSSA
- Delta/CSSA
- SM/Delta
- SM/CSSA/Delta

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guiding management documents. The navigable waterways in the Delta and Suisun Marsh are available for public access and support recreational activities, including powerboating, sailing, kayaking, and canoeing (DSC 2013). Table 5.11-3: Agencies with Responsibilities in the Delta in the Proposed Project Area summarizes the federal, state, and local agencies with jurisdiction in the portions of the Delta within the Proposed Project area and their roles.

Suisun Marsh

The Suisun Marsh covers approximately 85,000 acres of tidal marsh, managed wetlands, and waterways in southern Solano County (San Francisco Bay Conservation and Development Commission [BCDC] 1976). The Suisun Marsh lands are both publicly and privately owned. The public agencies that oversee the Suisun Marsh are known as the Suisun Principal Agencies and include the United States (U.S.) Fish and Wildlife Service (USFWS), Bureau of Reclamation, California Department of Fish and Wildlife (CDFW), California Department of Water Resources, National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), Suisun Resource Conservation District, and the DSC (Suisun Principal Agencies 2014). To ensure the wetlands are protected and preserved, the Suisun Marsh's development and use are guided by the San Francisco Bay Conservation and Development Commission's (BCDC's) Suisun Marsh Protection Plan; the CDFW's Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP); and the DSC's Delta Plan. The proposed LSPGC Collinsville Substation, LSPGC 230 kV Submarine Segment, and segments of the proposed PG&E 12 kV Distribution Line would fall within the Suisun Marsh boundaries identified by the DSC's Delta Plan and the management areas identified in the BCDC's Suisun Marsh Protection Plan.

Suisun Marsh Priority Habitat Restoration Area

The DSC's Delta Plan assigns areas in the Delta as priority habitat restoration areas, which are large areas where specific sites may be identified for habitat restoration based on assessments of land use and other issues addressed through further feasibility analysis (DSC 2013). The Delta Plan identifies five priority habitat restoration areas: the Suisun Marsh, Cache Slough, Yolo Bypass, Consumnes/Mokelumne Confluence, and Lower San Joaquin River Floodplain. The proposed LSPGC Collinsville Substation and PG&E 12 kV Distribution Line would be located within the Suisun Marsh priority habitat restoration area and would be subject to regulatory policies identified in the Delta Plan and discussed Section 5.11.2.1.2 State.

Lower Sherman Island Wildlife Area

The CDFW oversees the LSIWA, which covers approximately 3,100 acres of riparian marshland located in the Delta in Sacramento County (CDFW 2007). The proposed LSPGC 230 kV Submarine Segment would be located approximately 0.4 mile west of the LSIWA. The CDFW-administered LSIWA Land Management Plan (LMP) outlines land use goals, including the maintenance and restoration of the Lower Sherman Island ecosystems, preservation of cultural resources, and improvements to public recreational opportunities (CDFW 2007). Recreational activities in the LSIWA include wildlife viewing and hunting.

Table 5.11-3: Agencies with Responsibilities in the Delta in the Proposed Project Area

Agency	Role
Federal	
USFWS	Develops plans for the conservation and recovery of fish and wildlife resources and addresses the variable needs of fish and wildlife pursuant to the Endangered Species Act (ESA).
U.S. Army Corps of Engineers (USACE)	Involved with both federal and non-federal partners in assessing channel navigation, ecosystem, and flood risk management projects in the Delta. Works cooperatively with its non-federal partners regarding the regulation, maintenance, and improvement of project levees in the Delta.
NOAA Fisheries	Develops plans for the conservation and recovery of salmonids in the Delta pursuant to the ESA.
U.S. Environmental Protection Agency	Responsible for the protection and restoration of water quality in the Delta, pursuant to the Clean Water Act, which regulates the discharge of pollutants into waterways and sets standards for water quality. Oversees implementation of Clean Water Act programs and policies delegated to states.
State	
DSC	Established in 2009 by the Delta Reform Act to further the achievement of the coequal goals through the development and implementation of a legally enforceable Delta Plan.
CDFW	Provides fish and wildlife protection and management, including management of wildlife areas and ecological reserves, public access, conservation planning, permitting, and implementation of the Ecosystem Restoration Program.
DPC	Prepares a comprehensive long-term resource management plan for land uses within the approximately 500,000-acre Primary Zone. Local government plans must be consistent.
Sacramento-San Joaquin Delta Conservancy	A primary state agency to implement ecosystem restoration in the Delta and also to assist/protect the region's agricultural, cultural, economic, and historical value.
BCDC	Issues or denies permit applications for placing fill, extracting material, or changing use of any land, water, or structure within the BCDC's jurisdiction in the Delta.
State Water Resources Control Board	Required to develop non-regulatory flow criteria in 2010 for the Delta ecosystem necessary to protect public trust uses to inform planning proceedings for the Delta Plan and Bay Delta Conservation Plan. Responsible for developing and implementing the Bay-Delta Water Quality Control Plan to establish water quality objectives, including flow objectives, to ensure reasonable protection of beneficial uses in the Bay-Delta. Responsible for establishing, implementing, and enforcing water right requirements to ensure the proper allocation and efficient use of water in and out of the Delta, including the role of the Delta Watermaster and implementation of the Bay-Delta Water Quality Control Plan. With regional boards, responsible for developing and implementing other water quality standards and control plans consistent with state and federal laws to reasonably protect aquatic beneficial uses.
Central Valley Flood Protection Board (CVFPB)	Plans flood control along the Sacramento and San Joaquin rivers and their tributaries in cooperation with the USACE.

Agency	Role
Local	
Solano County	Assigns general plan land use and zoning designations to areas within their jurisdictions in the Delta.
Sacramento County	
Contra Costa County	
City of Pittsburg	

Sources: DSC 2013, BCDC 2023a

Browns Island

The East Bay Regional Park District manages the approximately 595-acre Browns Island, located off the City of Pittsburg's northern coast in the Delta. The proposed LSPGC 230 kV Submarine Segment would be approximately 0.6 mile west of Browns Island. Recreational activities available on Browns Island include fishing and wildlife and plant viewing; however, access to the island is restricted and must be arranged with the East Bay Regional Park District. There are no recreational facilities on the island, and it is only accessible by boat (East Bay Regional Park District 2023). The East Bay Regional Park District's 2013 Master Plan contains policies and programs that guide the development of recreational use areas while conserving natural resources in Alameda and Contra Costa counties (East Bay Regional Park District 2013).

5.11.1.3.2 Designated Coastal Zone Management Areas

No portion of the Proposed Project would be located in a designated coastal zone management area.

5.11.1.3.3 Designated or Proposed Candidate National or State Wild and Scenic Rivers

No portion of the Proposed Project would cross or be proximate to a designated or proposed candidate national or state wild and scenic river.

5.11.1.3.4 National Landmarks

No national landmarks are located in the Proposed Project vicinity.

5.11.1.4 Habitat Conservation Plan

The following subsections discuss the Habitat Conservation Plans (HCPs) in the Proposed Project area. Copies of these HCPs are provided in Attachment 5.11-A: HCPs in the Proposed Project Area.

5.11.1.4.1 Solano County Water Agency Solano Multispecies Habitat Conservation Plan

In October 2012, the Solano County Water Agency (SCWA) published a draft of the Solano Multispecies HCP (SCWA 2012), but the HCP has not yet been adopted. The draft HCP establishes a framework for complying with federal and state endangered species regulations while accommodating future urban growth, infrastructure development, and ongoing O&M for flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the plan participants in Solano County over the next 30 years (SCWA 2012). A total of 36 species are proposed to be covered under the HCP. Because the Solano Multispecies HCP has not yet been adopted, it is not included in Attachment 5.11-A: HCPs in the Proposed Project Area.

5.11.1.4.2 East Contra Costa County Habitat and Natural Community Conservation Plan

The East Contra Costa County Habitat Conservancy [formerly East Contra Costa County Habitat Conservation Plan Association] intends to use the East Contra Costa County HCP/Natural

Community Conservation Plan (NCCP) to protect natural resources in eastern Contra Costa County while improving environmental permitting processes for impacts to endangered species and contributing to their recovery. The East Contra Costa County HCP/NCCP covers the cities of Clayton, Pittsburg, Antioch, Oakley, and Brentwood, as well as the unincorporated areas between those cities, and provides take authorization for 28 listed and non-listed species. The proposed LSPGC 230 kV Underground Segment and PG&E's existing Pittsburg Substation are within the East Contra Costa County HCP/NCCP covered area. The East Contra Costa County HCP/NCCP addresses comprehensive species, wetlands, and ecosystem conservation. Agencies involved with approving permits for endangered species within the county submit a request to the USFWS and CDFW to have authorized 30-year take permits for species covered under the federal ESA and the Natural Community Conservation Planning Act.

5.11.1.4.3 PG&E Bay Area Operations and Maintenance Habitat Conservation Plan

PG&E's Bay Area O&M HCP is intended to avoid, minimize, and mitigate temporary and permanent impacts on threatened and endangered species resulting from PG&E's O&M and minor new construction activities in Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco, and Marin counties. Additionally, the HCP provides the basis for incidental take authorization pursuant to the ESA for PG&E's current and future O&M activities and minor new construction in the HCP area.

5.11.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.11.2.1 Regulatory Setting

5.11.2.1.1 Federal

Section 14 of the Rivers and Harbors Appropriation Act of 1899

Under Section 14 of the Rivers and Harbors Appropriation Act of 1899 (Section 408), the Secretary of the Army may grant permission for the permanent or temporary alteration or use of any USACE Civil Works project when the alteration or use will not be injurious to the public interest and will not impair the usefulness of the Civil Works project (USACE 2023). The LSPGC 230 kV Submarine Segment would cross the New York Slough, a USACE navigation channel with an annual dredge cycle. The New York Slough is a USACE Civil Works project; therefore, the Proposed Project must receive authorization under Section 14.

5.11.2.1.2 State

General Order 131-D

Pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in California. Under the California Environmental Quality Act (CEQA), the CPUC is the lead agency with respect to such Proposed Project elements within California.

State Lands Act of 1938

The State Lands Act, established in 1938, created the California State Lands Commission (CSLC). The CSLC has sovereign ownership, jurisdiction, and management authority over all tidelands, submerged lands, and beds of navigable lakes and waterways (CSLC 2017). The CSLC "holds these lands in trust for the benefit of all people of the State for statewide Public Trust purposes including waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space, among others" (CLSC 2017). The Proposed Project must receive a lease agreement from the CLSC to perform construction and O&M activities in the Delta.

Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974

The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 directed the BCDC and the CDFW to develop the Suisun Marsh Protection Plan (1976). The Suisun Marsh Preservation Act of 1977 declared that the Suisun Marsh Protection Plan contains a series of recommendations that require implementation by the Legislature (PRC Section 29004[b]). The objectives of the Suisun Marsh Protection Plan are to preserve and enhance the quality and diversity of the Suisun Marsh aquatic and wildlife habitats and to ensure retention of upland area adjacent to the marsh in uses compatible with its protection (BCDC 1976). The Suisun Marsh Protection Plan identifies a Primary Management Area and Secondary Management Area. The Primary Management Area is overseen by the BCDC, which administers a Marsh Development Permit (covered as a Major Permit) for any work occurring in the Primary Management Area. The Suisun Marsh Protection Plan assigns primary responsibility for carrying out the plan in the Secondary Management Area to local governments, and they must develop a protection program in accordance with the plan and receive certification from the BCDC. Therefore, Solano County developed and received certification for its Suisun Marsh Local Protection Program (LPP), which is discussed in Section 5.11.2.1.3 Local. The following policies from the Suisun Marsh Protection Plan are relevant to the Proposed Project:

- The diversity of habitats in the Suisun Marsh and surrounding upland areas should be preserved and enhanced wherever possible to maintain the unique wildlife resource.

- Existing uses should continue in the upland grasslands and cultivated areas surrounding the critical habitats of the Suisun Marsh in order to protect the Marsh and preserve valuable marsh-related wildlife habitats. Where feasible, the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife should be enhanced.

- In the Suisun Marsh and upland areas necessary to protect the Marsh, improvements to public utility facilities should follow these planning guidelines:

  – New electric power transmission utility corridors should be located at least one-half mile from the edge of the Marsh. New transmission lines, whether adjacent to the Marsh or within existing utility corridors, should be constructed so that all wires are at least six feet apart.

  – Urban utilities and public services (e.g. natural gas lines, electric lines for local power distribution, domestic water mains, and sewers) should be allowed to extend into the

Suisun Marsh and the adjacent upland area necessary to protect the Marsh, only to serve existing uses and other uses consistent with protection of the Marsh, such as agriculture. However, utilities in the secondary management area necessary for the operation of water-related industry within the area designated for such use in the Suisun Marsh Protection Plan at Collinsville would be permissible.

  - Within the Marsh, new electric lines for local distribution should be installed underground unless undergrounding would have a greater adverse environmental affect on the Marsh than above-ground construction, or the cost of underground installation would be so expensive as to preclude service. Any distribution line necessary to be constructed above ground should have all wires at least six feet apart.

- All plans for construction within the Marsh should be reviewed by CDFW [formerly Fish and Game] to further assure that construction methods and timing will have a minimal impact on Marsh flora and fauna.

- Agricultural uses consistent with protection of the Marsh, such as grazing and grain production, should be maintained in the secondary management area. In the event such uses become infeasible, other uses compatible with protection of the Marsh should be permitted. The value of the upland grassland and cultivated lands as habitats for Marsh-related wildlife should be maintained and enhanced where possible by planting or encouraging valuable wildlife food or cover plant species.

Approximately 1.7 miles of the proposed LSPGC 230 kV Submarine Segment would be within the Primary Management Area and would be required to receive a Marsh Development Permit from BCDC. The proposed LSPGC Collinsville Substation and portions of the proposed PG&E 12 kV Distribution Line would be located in the Secondary Management Area, which is subject to Solano County's Suisun Marsh LPP, as discussed in Section 5.11.2.1.3 Local.

CALFED Bay-Delta Program Record of Decision

In 2000, the CALFED Bay-Delta Program Record of Decision was signed, which included the Ecosystem Restoration Program calling for the restoration of 5,000 to 7,000 acres of tidal wetlands and the enhancement of 40,000 to 50,000 acres of managed wetlands. Therefore, the Suisun Principal Agencies adopted the SMP in 2013, which includes the key elements of restoring between 5,000 and 7,000 acres of tidal marsh, enhancing more than 40,000 of managed wetlands, maintaining the heritage of waterfowl hunting, improving water quality for fish and wildlife habitat, and providing other recreational opportunities (Bureau of Reclamation, USFWS, & CDFW 2013). The proposed LSPGC 230 kV Submarine Segment would be within the SMP planning area. The following objective from the SMP is relevant to the Proposed Project:

- Water Quality. Protect and, where possible, improve water quality for beneficial uses in Suisun Marsh, including estuarine, spawning, and migrating habitat uses for fish species as well as recreational uses and associated wildlife habitat.

Sacramento-San Joaquin Delta Reform Act of 2009

The Sacramento-San Joaquin Delta Reform Act of 2009 created the DSC, which develops and enforces the Delta Plan. The Delta Plan aims to improve statewide water supply reliability, and protect and restore a vibrant and healthy Delta ecosystem, all in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta (DSC 2013). The Delta Plan includes 14 enforceable regulatory policies. The following regulatory policies are relevant to the Proposed Project:

- ER P3. Protect Opportunities to Restore Habitat (23 California Code of Regulations [CCR] Section 5007)
  - Within the priority habitat restoration areas depicted in Appendix 5, significant adverse impacts to the opportunity to restore habitat as described in section 5006, must be avoided or mitigated.
  - Impacts referenced in subsection (a) will be deemed to be avoided or mitigated if the project is designed and implemented so that it will not preclude or otherwise interfere with the ability to restore habitat as described in section 5006.
  - Impacts referenced in subsection (a) shall be mitigated to a point where the impacts have no significant effect on the opportunity to restore habitat as described in section 5006. Mitigation shall be determined, in consultation with the California Department of Fish and Wildlife, considering the size of the area impacted by the covered action and the type and value of habitat that could be restored on that area, taking into account existing and proposed restoration plans, landscape attributes, the elevation map shown in Appendix 4, and other relevant information about habitat restoration opportunities of the area.

Delta Protection Act of 1992

The Delta Protection Act of 1992 declared "that the Sacramento-San Joaquin Delta is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and it is the policy of the state to recognize, preserve, and protect those resources of the delta for the use and enjoyment of current and future generations" (California Legislative Information 2010). The act created the DPC, which develops and oversees the Land Use and Resource Management Plan for the Primary Zone of the Delta. The act also defines the principal jurisdiction of the DPC in a Primary Zone. Approximately 3.4 miles of the proposed LSPGC 230 kV Submarine Segment would be within the Primary Zone. The Land Use and Resource Management Plan for the Primary Zone of the Delta outlines policies for utilities and infrastructure in the Primary Zone. The following Utilities and Infrastructure policy is relevant to the Proposed Project:

- P-1. Impacts associated with construction of transmission lines and utilities can be mitigated by locating new construction in existing utility or transportation corridors, or along property lines, and by minimizing construction impacts. Before new transmission lines are constructed, the utility should determine if an existing line has available capacity. To minimize impacts on agricultural practices, utility lines shall follow edges of

fields. Pipelines in utility corridors or existing rights-of-way shall be buried to avoid adverse impacts to terrestrial wildlife. Pipelines crossing agricultural areas shall be buried deep enough to avoid conflicts with normal agricultural or construction activities. Utilities shall be designed and constructed to minimize any detrimental effect on levee integrity or maintenance, agricultural uses and wildlife within the Delta. Utilities shall consult with communities early in the planning process for the purpose of creating an appropriate buffer from residences, schools, churches, public facilities and inhabited marinas.

McAteer-Petris Act of 1965

The McAteer-Petris Act of 1965 established the BCDC to "exercise its authority to issue or deny permit applications for placing fill, extracting material, or changing use of any land, water or structure within the Commission's jurisdiction in conformity with the provisions and policies of both the McAteer-Petris Act and the Bay Plan" (BCDC 2023a). The BCDC's San Francisco Bay Plan outlines policies intended to protect and restore tidal marshes and wetlands, improve water quality, and conserve the fish and wildlife of San Francisco Bay. The San Francisco Bay Plan's Other Uses of the Bay and Shoreline section includes the following policies that are relevant to the Proposed Project:

- Policy 5. High voltage transmission lines should be placed in the Bay only when there is no reasonable alternative. Whenever high voltage transmission lines must be placed in the Bay or in shoreline areas:

    a. New routes should avoid interfering with scenic views and with wildlife, to the greatest extent possible; and

    b. The most pleasing tower and pole design possible should be used. High voltage transmission lines should be placed underground as soon as this is technically and economically feasible.

California Code of Regulations, Title 23

Title 23 of the CCR grants the CVFPB authority over development activities in the Central Valley that would potentially impact flooding in the region. The CVFPB ensures that construction and maintenance activities adhere to established standards intended to reduce the devastating effects of flooding. The CVFPB issues encroachment permits for activities located in their jurisdiction (CVFPB 2023).

Senate Bill 1065

The CDFW-administered LSIWA was originally designated as a wildlife area and established as a public hunting and fishing area in 1976 by the California Fish and Game Commission. In 1986, the Delta Flood Protection Act went into effect to provide flood control improvement projects for islands in the Delta, including the LSIWA. In 1991, Senate Bill 1065 was issued to ensure flood control improvement projects would not result in the loss of habitat (CDFW 2023). In 2007, the CDFW adopted the LSIWA LMP, which is a guiding document that ensures public uses and O&M activities in the LSIWA are compatible with the conservation of species and habitats. While the Proposed Project would be in the vicinity of the LSIWA, no portion of the Proposed

Project would cross lands or waters within the boundaries of the LSIWA. Therefore, the LMP does not include any land use policies relevant to the Proposed Project.

5.11.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County

Solano County General Plan

The Land Use chapter of the Solano County General Plan provides an overview of land use designations and describes the goals, policies, and implementation programs that provide the framework for development (Solano County 2008). The proposed LPSGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line are within the CSSA, which has an associated Collinsville Land Use Plan. The following policy from the Collinsville Land Use Plan is relevant to the Proposed Project:

- SS.P-21. Preserve the residential character of the Collinsville town site; ensure that any future nonresidential uses are compatible with the residential character and that an adequate buffer is established between residential and nonresidential uses.

In addition, the Public Facilities and Services Element of the Solano County General Plan outlines policies and implementation programs that guide the development of utilities with the intention of avoiding disruptions to natural areas. The following policies from the Public Facilities and Services Element are relevant to the Proposed Project:

- PF.P-49: Use parallel or existing rights-of-way for gas, electric, and telephone utility alignments in a manner that avoids heavily developed areas.

- PF.P-50. Locate, design, and construct transmission lines in a manner that minimizes disruption of natural vegetation, agricultural activities, scenic areas, and avoids unnecessary scarring of hill areas.

- PF.P-51. Encourage undergrounding of local utility distribution lines where feasible.

Solano County Zoning Code

Article II of the Solano County Zoning Code details the allowable uses on the lands crossed by the Proposed Project, including the following (Solano County 2023b):

- 28.21.20 Agricultural District Land Uses and Permit Requirements: A utility facility or infrastructure outside of a right-of-way (ROW) requires a use permit.
- 28.22.20 Suisun Marsh Agricultural District Land Uses and Permit Requirements: A utility facility or infrastructure outside of a ROW requires a use permit.
- 28.52.20 Marsh Preservation District Land Uses and Permit Requirements: A utility facility or infrastructure outside of a ROW requires a use permit.

Solano County Suisun Marsh Local Protection Plan

The Suisun Marsh Preservation Act of 1977 required Solano County to bring its general and specific plans, ordinances and zoning maps, land use regulations, and other related standards and controls into conformity with the provisions of the Suisun Marsh Preservation Act and the Suisun Marsh Protection Plan (Solano County 2018), discussed previously in Section 5.11.2.1.2 State. Therefore, Solano County developed the Suisun Marsh LPP (amended in 2018), which details the aspects of the county's General Plan and Zoning Code that were updated in compliance with the Suisun Marsh Protection Plan. The LPP is intended to conserve the Suisun Marsh's natural resources; protect the agricultural lands adjacent to the Suisun Marsh; establish erosion, sediment, and run-off controls; and ensure future developments are compatible with existing uses. The LPP changed the Limited Agriculture (AL) District to the Suisun Marsh Agricultural (A-SM) District, where the proposed LSPGC Collinsville Substation would be located. Details on the A-SM District are provided in the Solano County Zoning Code section.

Sacramento County

Sacramento County General Plan

The Public Facilities Element of the Sacramento County General Plan presents goals, policies, and implementation measures to guide the efficient and safe development of energy facilities throughout Sacramento County (Sacramento County 2022). The Public Facilities Element contains the following land use policies relevant to the Proposed Project:

- PF-86. Proposals to locate all new bulk substations and all other large scale energy transmission facilities equal to or greater than 100kV shall be submitted to Planning for review and comment in the form of a General Plan Conformity request.

- PF-90. Transmission rights-of-way should avoid bisecting parcels wherever possible.

- PF-92. Transmission lines should avoid to the greatest extent possible, cultural resources and biological resources such as wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands. When routed through such areas, transmission lines should have maximum line spans and cross at the narrowest points which involve minimal cutting and cropping of vegetation, maintaining the drainage regime of wetland basins. Additionally, when feasible, such routes should be maintained to serve as biological dispersion corridors between areas of high biodiversity.

- PF-94. Avoid routing transmission lines through areas currently used or projected to be used for subsurface mining operations. Preferred routing should follow mining setbacks to adjacent roadways.

- PF-95. Transmission lines should avoid paralleling recreation areas, historic areas, rural scenic highways, landscaped corridors, drainage basins, wetland mitigation, tree planting, and designated federal or state wild and scenic river systems, although these areas may be considered as options if facilities already exist there.

Sacramento County Zoning Code

Chapter 4 of the Sacramento County Zoning Code details the uses permitted in the zones crossed by the Proposed Project (Sacramento County 2015). The Proposed Project crosses the DW zoning district. No language in the existing Sacramento County Zoning Code details permitted or prohibited uses pertaining to the Proposed Project (i.e., submarine utility cables).

Contra Costa County

Contra Costa County General Plan

The Land Use Element of the Contra Costa County General Plan outlines the existing land use designations, discusses areas of planned development, and highlights Contra Costa County's land use goals, policies, and implementation measures (Contra Costa County 2000). The following policy from the Land Use Element is relevant to the Proposed Project:

- 3-20. Where new electrical transmission lines are proposed, they should be developed parallel to existing transmission lines to the extent feasible. Mitigation of the environmental impact of building these facilities should be in close proximity to the area of impact.

Contra Costa County Ordinance Code

Chapter 84 of the Contra Costa County Ordinance Code details the uses permitted in the zones that would be traversed by the Proposed Project (Contra Costa County 2023b) and includes the following:

- Unrestricted District (U) Chapter 84-64: All land within a U unrestricted district may be used for any lawful use, but the board of supervisors may hereafter amend this division to place land now placed in an unrestricted district into another district, or by proper amendment of this division may provide regulations for the use of land now in any unrestricted district.

East Bay Regional Park District

The East Bay Regional Park District's 2013 Master Plan contains policies and programs that guide the development of recreational use areas while conserving natural resources in Alameda and Contra Costa counties. The Master Plan identifies Browns Island as a Regional Preserve with outstanding natural or cultural features that are protected for their intrinsic value, as well as for the enjoyment and education of the public (East Bay Regional Park District 2013). While the Proposed Project would be in the vicinity of Browns Island, no portion of the Proposed Project

would cross Browns Island. Therefore, the Master Plan does not contain any land use policies relevant to the Proposed Project.

City of Pittsburg

City of Pittsburg General Plan

The Land Use Element of the City of Pittsburg General Plan highlights the city's past development patterns and discusses goals and policies that guide sustainable growth. The Proposed Project would be in the Northwest River Planning Subarea. The Land Use Element does not contain any policies relevant to the Proposed Project (City of Pittsburg 2001).

City of Pittsburg Zoning Code

Chapter 18 of the City of Pittsburg Zoning Code details the uses permitted in the zones that would be crossed by the Proposed Project. Major utilities require a use permit, and telecommunication facilities are permitted in the I-G zone. Telecommunication facilities are permitted in the CP and GQ zones. As discussed in Chapter 18.62 Planned Development (PD) District, no use other than an existing use is permitted in a PD district except in accordance with a PD plan or specific plan.

5.11.3 Impact Questions

5.11.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For land use and planning, the CEQA Environmental Checklist asks if the Proposed Project would:

- Physically divide an established community?
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

5.11.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for land use and planning.

5.11.4 Impact Analysis

5.11.4.1 Land Use and Planning Impact Analysis

5.11.4.1.1 Would the project physically divide an established community?

Construction, Operations and Maintenance

LPSGC and PG&E Proposed Project Components

No Impact. The LSPGC and PG&E Proposed Project components would not divide any established communities. The proposed LSPGC Collinsville Substation would be located approximately 0.75 mile northeast of the unincorporated community of Collinsville. No portion of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E

500 kV Interconnection, and PG&E 12 kV Distribution Line would cross the residential community or primary access roads to the community. Therefore, these LSPGC and PG&E Proposed Project components would not physically divide an established community.

The proposed LSPGC 230 kV Submarine Segment would not divide an established community because its construction would occur within the Delta waters where no communities are located. Therefore, the proposed LSPGC 230 kV Submarine Segment would not physically divide an established community.

The proposed LSPGC 230 kV Underground Segment would be constructed in an industrial zone. The closest residential community would be approximately 0.4 mile to the southeast; however, no portion of the proposed LSPGC 230 kV Underground Segment would cross the residential community or access roads to the community. Therefore, the proposed LSPGC 230 kV Underground Segment would not physically divide an established community.

The proposed LSPGC Telecommunications Line would be constructed within the streets of a residential neighborhood; however, it would be installed entirely underground and would not physically divide an established community. As a result, no impact would occur.

5.11.4.1.2 Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As discussed previously, the CPUC has sole and exclusive state jurisdiction over the siting and design of the LSPGC and PG&E Proposed Project components pursuant to CPUC GO 131-D, Section XIV.B. Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the LSPGC and PG&E Proposed Project components. Although the county and city regulations are not applicable, Attachment 5.11-B: Land Use Plans and Policies Consistency Analysis includes an analysis of the Proposed Project's consistency with county and city land use plans.

Specifically, Attachment 5.11-B: Land Use Plans and Policies Consistency Analysis provides an analysis of the Proposed Project's consistency with the BCDC's Suisun Marsh Protection Plan, the Suisun Principal Agencies' SMP, the DSC's Delta Plan, the DPC's Land Use and Resource Management Plan for the Primary Zone of the Delta, and BCDC's San Francisco Bay Plan. The LSPGC and PG&E Proposed Project components would be consistent with the Suisun Principal Agencies' SMP, DSC's Delta Plan, DPC's Land Use and Resource Management Plan for the Primary Zone of the Delta, and the BCDC's San Francisco Bay Plan. The only plan identified in Section 5.11.2 Regulatory Setting that the LSPGC and PG&E Proposed Project components would potentially be inconsistent with is the Suisun Marsh Protection Plan.

Approximately 1.7 miles of the proposed LSPGC 230 kV Submarine Segment would be within the Primary Management Area of the Suisun Marsh Protection Plan and would be required to

receive a Marsh Development Permit from BCDC, as the BCDC is responsible for regulating activities within the Primary Management Area. This component of the Proposed Project would be inconsistent with the policy that requires that utility corridors be located 0.5 mile from the marsh, as presented in Attachment 5.11-B: Land Use Plans and Policies Consistency Analysis. This policy consistency would be addressed through the BCDC permitting process.

The Suisun Marsh Protection Plan assigns primary responsibility for carrying out the plan in the Secondary Management Area to local governments, and they must develop a protection program in accordance with the plan and receive certification from the BCDC. Solano County developed and received certification for its Suisun Marsh LPP. The proposed LSPGC Collinsville Substation and portions of the proposed PG&E 500 kV Interconnection, 230 kV Overhead Segment, and PG&E 12 kV Distribution Line would be located between 0.05 and 0.25 mile away from the Primary Management Area and within the Secondary Management Area. Proposed Project components in the Secondary Management Area are subject to Solano County's Suisun Marsh LPP. As described in Attachment 5.11-B: Land Use Plans and Policies Consistency Analysis, the Proposed Project would not be completely consistent with the Suisun Marsh Protection Plan as the proposed LSPGC 230 kV Transmission Line and proposed PG&E 500 kV Interconnection would be located within 0.5 mile of the marsh; however, the Proposed Project would be consistent with Solano County's Suisun Marsh LPP. The Solano County General Plan's Land Use Element and Suisun Marsh LPP allows for utility facilities and infrastructure within the Secondary Management Area if a Marsh Development Permit is obtained. However, the CPUC has sole and exclusive state jurisdiction over the siting and design of the LSPGC and PG&E Proposed Project components pursuant to CPUC GO 131-D, Section XIV.B. Thus, local permitting is pre-empted by the state. Consequently, public utilities are directed to consider the Suisun Marsh LPP, but the regulations are not applicable. As a result, impacts would be less than significant.

5.11.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for land use and planning.

5.11.6 Applicant-Proposed Measures

5.11.6.1 Land Use and Planning Applicant Proposed Measures

No applicant-proposed measures (APMs) are proposed for land use and planning because impacts would be less than significant.

5.11.7 PG&E Construction Measures

5.11.7.1 Land Use and Planning PG&E Construction Measures

No Construction Measures are proposed for land use and planning because impacts would be less than significant.

5.11.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable

energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to land use and planning associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not physically divide an established community. The proposed LSPGC Collinsville Substation would be constructed with sufficient space to accommodate the potential future incremental modification. Therefore, the modification would not create any new conflicts with land use plans as all conflicts would be addressed during the initial buildout. As such, the potential modification would not result in impacts due to conflicts with land use policies or regulations, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.12 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?			✓	
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				✓

This section describes the mineral resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.12.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

Mineral resources mined or produced in Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur. Solano County falls within mineral resources zones (MRZs) described in California Surface Mining and Reclamation Act Mineral Land Classification Reports SR 146 Parts I and III, and SR 156. MRZs are intended to prevent development of incompatible land uses in areas determined to have substantial mineral resource deposits. The Proposed Project would not be located within an MRZ, nor are any located in the greater project area (Solano County 2008).

The proposed LSPGC 230 kV Submarine Segment would cross Lind Marine, Martin Marietta Marine Operations, LLC, and Suisan Associates (Lind Marine's) active dredging operation in the Suisun Bay. Lind Marine conducts sand mining operations through intentional dredging of sand and fine to medium gravel to be later used and sold for commercial purposes. Their operation utilizes a tugboat and barge pair for sand mining. Sand mining does not occur uniformly within the lease areas but is typically clustered within specific areas where sand deposits have a low percentage of fine materials (silts, clay, and mud). The actual locations where sand mining occurs in the Central Bay are regulated and/or influenced by a number of factors, which include California State Land Commission- (CLSC-) designated lease areas, navigation restrictions, areas having suitable water depths for mining, areas where sand is known from historical observations to accumulate, and areas having moderately high-water velocities resulting in frequent sand movement replenishment, and scour of fines from sand deposits. No other mines are located within 5 miles of the Proposed Project.

5.12.2 Regulatory Setting

5.12.2.1 Regulatory Setting

Federal, state, and local laws or regulations were reviewed for relevancy to the Proposed Project.

5.12.2.1.1 Federal

No federal regulations apply to the Proposed Project with respect to mineral resources.

5.12.2.1.2 State

Surface Mining and Reclamation Act of 1975

Mineral resource zones are designated by the CGS where access to important mineral resources may be threatened, according to provisions of the California Surface Mining and Reclamation Act of 1975 (SMARA). The SMARA requires that all jurisdictions incorporate mapped mineral resources designations approved by the State Mining and Geology Board into their general plans. The Department of Conservation's Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) are jointly charged with ensuring proper administration of the Act's requirements. The SMGB promulgates regulations to clarify and interpret the Act's provisions, and also serves as a policy and appeals board. The OMR provides an ongoing technical assistance program for lead agencies and operators, maintains a database of mine locations and operational information statewide, and is responsible for compliance-related matters (OMR, 2006).

5.12.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order (G.O.) 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan (2008) includes goals, policies, and implementation measures related to mineral resources to facilitate the extraction of known mineral deposits, prevent the encroachment of incompatible uses adjacent to such deposits, and require mines to conduct their operations in a manner compatible with the health, safety, and welfare of county residents and surrounding land uses. Mineral resources are addressed in the Solano County General Plan Resources chapter, which is discussed under the subheading that follows.

Resources Chapter

The Resources Chapter of the Solano County General Plan includes the following policies and implementation program that are relevant to the Proposed Project:

- Policy RS.P-33: The County shall preserve, for future use, areas with significant mineral resources by preventing residential, commercial, and industrial development that would be incompatible with proper mining practices.

- Policy RS.P-34: The County shall ensure that mineral extraction operations are performed in a manner that is compatible with surrounding land uses; does not adversely affect the environment; and, at the end of such operations, restores the site to a use compatible with surrounding land uses.

Sacramento County General Plan

The Sacramento County General Plan (2017) includes goals, objectives, policies, and implementation measures related to mineral resources that identifies key resources within the county, facilitate resource protection and urban growth, and designating and protecting areas for future mining. Mineral resources are addressed in the Sacramento County General Plan Conservation Element, which is discussed under the subheading that follows:

- Goal: Mineral resources protected for economic extraction with minimal adverse impacts.

- Policy CO-45: To the maximum extent possible, all base material utilized in County and private road construction shall be composed of recycled asphalt concrete and roadway base material.

Contra Costa County General Plan

The Contra Costa County General Plan (2005) includes goals, policies, and implementation measures related to mineral resources to facilitate developments, while ensuring that adverse environmental effects resulting from surface mining are minimized. Mineral resources are addressed in the Contra Costa County General Plan Conservation chapter, which is discussed under the subheading that follows:

- Goal 8-M: To ensure the continued viability of mineral extraction operations which are important to the County's economy.
- Goal 8-N: To protect areas of identified valuable mineral resources from incompatible nearby land uses through zoning and other land use regulations.
- Policy 8-56: Incompatible land uses shall not be permitted within the mineral resource impact areas identified as containing significant sand and gravel deposits.
- Policy 8-58: Future development in the vicinity of valuable mineral resource zones shall be planned and designed to minimize disturbance to residential areas or other sensitive land uses and to permit the safe passage of quarry trucks.

5.12.3 Impact Questions

5.12.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For Mineral Resources, the CEQA Checklist asks if the Proposed Project would:

- Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Pursuant to the California Public Utilities Commission’s (CPUC’s) Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent’s Environmental Assessments, there are no additional CEQA Impact Questions required for Mineral Resources.

5.12.3.2 Additional CEQA Questions

Pursuant to the CPUC’s Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent’s Environmental Assessments, there are no additional CEQA impact questions required for mineral resources.

5.12.4 Impact Analysis

5.12.4.1 Mineral Resources Impact Analysis

5.12.4.1.1 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Construction

LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. The proposed LSPGC 230 kV Submarine Segment would cross Lind Marine's sand and gravel dredging operation. As a result, Proposed Project construction may temporarily interfere with the dredging operation while the submarine cables are being installed. To reduce the potential impacts associated with construction, LSPGC has designed the submarine cable to minimize the crossing length within the mine and would be required to obtain a lease agreement and a lease encumbrance permit/agreement from the CLSC for encumbering on the existing mining lease. Through these permit processes, additional avoidance and minimization measures may be identified to further reduce the potential impacts. The proposed LSPGC 230 kV Submarine Segment is anticipated to require a 450-foot-wide right-of-way along the approximately 1,200-foot-long crossing, resulting in the loss of availability of approximately 12.4 acres within the 367-acre authorized for dredging. As a result, the planned construction activities would be coordinated with the CSLC and the current mining lease owner and the loss of availability of sand and gravel would be less than significant.

LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line

No Impact. The Lind Marine mine is situated within 5 miles of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line; however, none of these LSPGC Proposed Project components would intersect with the mine. Therefore, these LSPGC Proposed Project components would not impact the mine's operations. Consequently, the construction of these LSPGC Proposed Project components would not lead to the depletion of any known mineral resources. As a result, no impact would occur.

PG&E Components

No Impact. The Lind Marine mine is situated within 5 miles of the PG&E Proposed Project components; however, neither of these components would intersect with the mine. Consequently, the construction of these PG&E Proposed Project components would not lead to the depletion of any known mineral resources, and no impact would occur.

Operations and Maintenance

LSPGC 230 kV Submarine Segment

No Impact. Following construction, the proposed LSPGC 230 kV Submarine Segment would not require any planned maintenance activities. Thus, O&M activities would not affect the mining operation outside of LSPGC's easement, and no impact would occur.

LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line

No Impact. As described previously, the Lind Marine mine is situated within 5 miles of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line; however, none of these LSPGC Proposed Project components would intersect with the mine, so mine operations would not be affected. Consequently, O&M of these LSPGC Proposed Project components would not lead to the depletion of any known mineral resources, and no impact would occur.

PG&E Components

No Impact. As described previously, the Lind Marine mine is situated within 5 miles of the PG&E Proposed Project components; however, the PG&E Proposed Project components would not intersect with the mine. Consequently, O&M of these PG&E Proposed Project components would not lead to the depletion of any known mineral resources, and no impact would occur.

5.12.4.1.2 Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would not be located on, or in proximity to, any mineral resource recovery sites identified in the Solano, Sacramento, or Contra Costa county general plans or any other applicable land use plans. Therefore, there would be no impact.

5.12.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures suggested for Mineral Resources.

5.12.6 Applicant-Proposed Measures

5.12.6.1 Mineral Resources Applicant Proposed Measures

No applicant-proposed measures (APMs) are proposed for mineral resources because impacts would be less than significant.

5.12.7 PG&E Construction Measures

5.12.7.1 Mineral Resources PG&E Construction Measures

No Construction Measures are proposed for mineral resources because no impacts would occur.

5.12.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable

energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to mineral resources associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not be located within any areas containing mineral resources; therefore, it would not result in the loss of availability of any mineral resources. No additional Mitigation Measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.13 NOISE

Would the project result in:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

This section describes the noise environment in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.13.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Cable, which would extend and terminate on the west side of PG&E's existing Pittsburg Substation.

5.13.1.1 Noise Sensitive Land Uses

Noise-sensitive land uses, or noise-sensitive receivers, are those land uses that are sensitive to loud or intrusive noise levels. Noise-sensitive receivers are associated with various land uses, including residences, hospitals, places of worship, libraries and schools, nature and wildlife preserves, and parks. These land uses that contain noise-sensitive receivers are known as noise-sensitive land uses. The Proposed Project is located within a region predominantly occupied by agricultural land uses. Existing noise in the Proposed Project area includes contributions from wind turbines, agricultural activities, wind, local traffic, marine traffic, industrial sources near PG&E's existing Pittsburg Substation, and transformers at substations north of Montezuma Hills Road.

As shown in Figure 5.13-1: Noise-Sensitive Receptor Locations, five sensitive receptors are located in proximity to the Proposed Project. The nearest sensitive receptors to the proposed LSPGC Collinsville Substation are one cultural resource site (R1), two groups of residences (R2 and R3), and one cemetery (R4). R1 is approximately 1,790 feet southeast, R2 is approximately 4,175 feet southwest, and R3 is approximately 4,280 feet west-southwest of the proposed LSPGC Collinsville Substation site. R4 is the St. Charles Borromeo Catholic Cemetery along Abruzzini Hill Road, and it is approximately 4,700 feet west-northwest of the proposed LSPGC Collinsville Substation site. The nearest residence (R1) to the proposed 230 kV Overhead Segment and the proposed PG&E 500 kV Interconnection is approximately 555 feet south and 1,950 feet south, respectively. The nearest receptor to the proposed LSPGC 230 kV Underground Segment and PG&E's existing Pittsburg Substation is a residential area (R5) on Halsey Court that is composed of single-family residences, approximately 2,100 feet southeast. Multiple residences, a private school, and a community center are located within approximately 20 feet of the proposed LSPGC Telecommunications Line.

5.13.1.2 Noise Setting

5.13.1.2.1 Noise Fundamentals

The terms "sound" and "noise" tend to be used interchangeably, but noise can be defined as unwanted sound, whereas sound is a normal and desirable part of life. However, when noise is imposed on people, it can lead to disturbance, annoyance, and other undesirable effects. Sound is physically characterized by amplitude and frequency. The amplitude of sound is measured in decibels (dB) as the logarithmic ratio of a sound pressure to a reference sound pressure (20 micro-Pascals). The reference sound pressure corresponds to the typical threshold of human hearing. To the average listener, a 3-dB change in a continuous broadband sound is considered "just barely perceptible," a 5-dB change is considered "clearly noticeable," and a 10-dB change is considered a doubling (or halving if the sound is decreasing) of the apparent loudness and can cause an adverse response. Sound waves can occur at different frequencies, which correspond to the sound's wavelength. Frequency is measured in Hertz (Hz), which is the number of wave cycles per second that occur. The typical human ear can hear frequencies ranging from approximately 20 to 20,000 Hz. Normally, the human ear is most sensitive to sounds in the middle frequencies (1,000 to 8,000 Hz) and is less sensitive to sounds in the lower and higher frequencies. As such, the A-weighting scale was developed to simulate the frequency response of the human ear to sounds at typical environmental levels. The A-weighting scale emphasizes sounds in the middle frequencies and de-emphasizes sounds in the low and high frequencies.

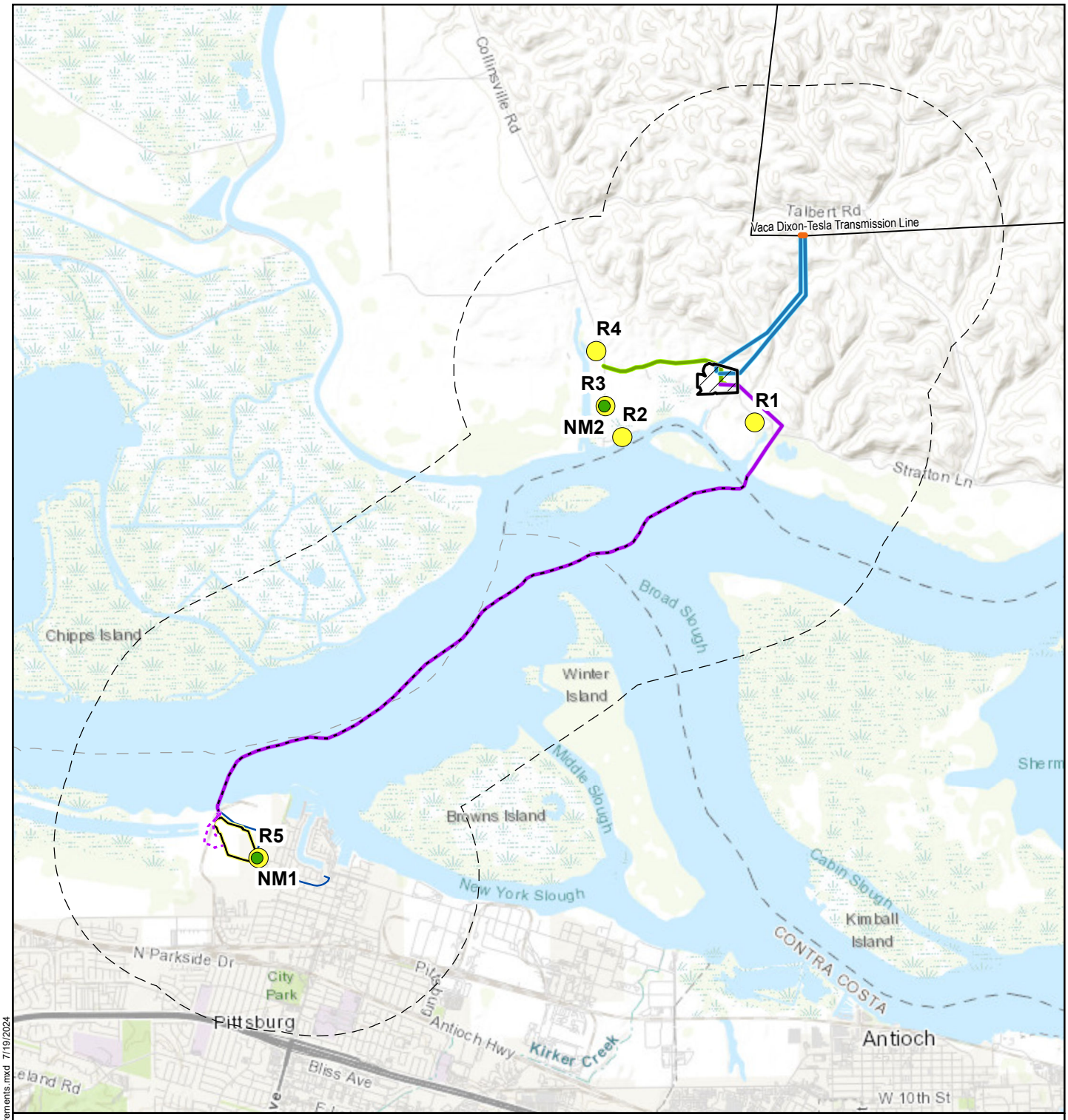

Figure 5.13-1: Noise-Sensitive Receptor Locations **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer
- Noise Measurement Location
- Sensitive Noise Receptor

1:60,000
0 0.5 1 Mile

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Any sound level to which the A-weighting scale has been applied is expressed in A-weighted decibels, or dBA. Sound can be characterized in terms of sound power level and sound pressure level. The sound power level is a measure of the total power radiated by a source. The sound power level is a fundamental property of the source and is independent of the surrounding environment. The sound pressure level is the level of sound pressure, as measured at a distance by a standard sound level meter with a microphone. This differs from the sound power level in that it is the received sound as opposed to the sound intensity at the source. A given level of noise may be more or less tolerable depending on the sound level, duration of exposure, character of the noise sources, time of day during which the noise is experienced, and activity affected by the noise. For example, noise that occurs at night tends to be more disturbing than that which occurs during the day because sleep could potentially be disturbed.

Because sound in the environment often varies over time, statistical noise descriptors have been developed to quantify fluctuating environmental sound levels. The most commonly used indices for measuring community noise levels include the following:

- L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

- L_{dn} or DNL: The day-night noise level or the energy average of the A-weighted sound levels occurring during a 24-hour period, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to consider the greater annoyance of nighttime noises.

- CNEL: The Community Noise Equivalent Level, which is similar to the L_{dn}, adds a 5-dBA penalty for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to the 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.[1]

- L_x: The sound level that is equaled or exceeded x percent of a specified time period. The L_{50} represents the median sound level (i.e., the noise level exceeded 50 percent of the time, or 30 minutes out of an hour).

- L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

5.13.1.2.2 Vibration Fundamentals

Vibration is defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation, such as forces, moments, or pressure fields. Vibration is transmitted through solid material, such as the ground by wave motion, giving rise to the terminology of "groundborne" vibration. Groundborne vibration propagates from sources, such as railways and impact-pile driving, through the ground into nearby structures and

[1] For typical community noise environments, the CNEL and L_{dn} levels are nearly always within 1 dB of each other and, therefore, are commonly used interchangeably.

buildings. Soil properties affect the propagation of groundborne vibration. The vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. When groundborne vibration interacts with a building, a ground-to-foundation coupling loss usually occurs, but the vibration can also be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as the rattling of windows or items on shelves or the motion of building surfaces. Vibration of building surfaces can also be radiated as sound and heard as a low-frequency rumbling noise, known as groundborne noise.

Groundborne vibrations transmitted from site activities to the neighborhood can cause anxiety as well as annoyance, and can disturb sleep, work, or leisure activities. Groundborne vibration can be expressed in terms of the peak particle velocity (PPV) of the soil particles resulting from a disturbance in inches per second. Agencies, such as the California Department of Transportation (Caltrans), use the PPV descriptor because it correlates well with damage and complaints due to vibration.

5.13.1.2.3 Existing Ambient Noise Environment and Vibration Conditions

The Proposed Project is located in a predominately rural area. The existing noise environment at the Proposed Project site includes contributions from wind turbines, agricultural activities, wind, local traffic, marine traffic, industrial sources near PG&E's existing Pittsburg Substation, and transformers at substations north of Montezuma Hills Road. In November 2023, Arcadis conducted a Noise and Vibration Impact Assessment within the Proposed Project area. Long-term noise measurements were conducted for 24 hours (starting at 8:00 a.m. on Monday, September 25 and ending at 8:00 a.m. on Tuesday, September 26) along Collinsville Road approximately 4,300 feet west-southwest of the proposed LSPGC Collinsville Substation site. Short-term measurements were conducted for 1 hour during the day (10:57 a.m. to 11:57 a.m. on Monday, September 25) and 1 hour at night (11:04 p.m. to 12:04 a.m. on Monday, September 25 and Tuesday, September 26) on Halsey Court and approximately 2,200 feet southeast of the southern edge of the Delta, near PG&E's existing Pittsburg Substation.[2] The data collected is represented in Figure 5.13-1: Noise-Sensitive Receptor Locations. The ambient noise recorded at both measurement locations is expected to be representative of the existing ambient noise levels at the nearest sensitive receptors to the proposed LSPGC Collinsville Substation site, along the proposed LSPGC 230 kV Overhead Segment, and along the LSPGC Telecommunications Line.[3] The Proposed Project is approximately 35 miles from Travis Air Force Base, and outside of the base's 60 CNEL contour (line of equal sound level). The nearest municipal air strip is the Rio Vista Municipal Airport in the City of Rio Vista, approximately 25 miles northeast of the Proposed Project.

A summary of the 24-hour L_{eq} noise levels measured near the proposed LSPGC Collinsville Substation site and the 1-hour L_{eq} noise levels measured near the proposed LSPGC 230 kV Overhead Segment are presented in Table 5.13-1: Long-Term Noise Measurement Results Near

[2] To prevent the potential theft of noise monitoring equipment, Arcadis staff members were present throughout the duration of the shortened measurement period.

[3] Wind turbine construction was active at the time of the long-term noise measurements; however, the noise monitoring equipment was positioned a sufficient distance from construction activities. As a result, the measured noise levels were not affected by construction and represent existing ambient conditions.

Proposed LSPGC Collinsville Substation Site and 230 kV Overhead Segment and Table 5.13-2: Short-Term Noise Measurement Results Near PG&E's Existing Pittsburg Substation and Along the LSPGC Telecommunications , respectively. Table 5.13-3: Summary of Measured Ambient Daytime and Nighttime Noise Levels and Calculated Day-Night Ambient Noise Levels summarizes the measured daytime ambient sound levels (L_{eq}[day]) and nighttime ambient sound levels (L_{eq}[night]) for the two measurement locations, along with the calculated day-night sound levels (L_{dn}).

As defined in Section 5.13.1.2 Noise Setting, the L_{dn} is the A-weighted equivalent noise level for a 24-hour period with a 10-dB adjustment added to sound levels occurring during nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.). The L_{dn} is calculated using the following formula:

$$L_{dn} = 10\log_{10}\left(\frac{15}{24}10^{L_{eq(day)}/10} + \frac{9}{24}10^{(L_{eq(night)}+10)/10}\right)$$

Currently, no ground- or air-vibrating sources or activities (e.g., mine blasting, pile driving, locomotives) are present in the Proposed Project vicinity. In addition, rubber-tired vehicles, such as those on nearby public roads and highways, do not generate any significant amount of groundborne vibration (Federal Transit Administration [FTA] 2018). Like noise emissions, ground and air vibration effects diminish with distance from the source, so baseline levels of vibration in the Proposed Project vicinity are expected to be negligible.

5.13.2 Regulatory Setting

Federal, state, and local regulations were reviewed for relevancy to the Proposed Project.

5.13.2.1 Regulatory Setting

5.13.2.1.1 Federal

United States Environmental Protection Agency

No federal noise standards that directly regulate noise from the operation of electrical transmission lines and substation facilities exist. However, in 1974, the United States Environmental Protection Agency (USEPA) established guidelines for noise levels, which were defined to protect public health and welfare with an adequate margin of safety. The USEPA established criteria for protecting public health and wellbeing. The USEPA guideline recommends a L_{dn} of 55 dBA to protect the public from the effect of broadband environmental noise outdoors in residential areas, farms, other outdoor areas where people spend widely varying amounts of time, and other places in which quiet is a basis for use (USEPA 1974). However, these criteria do not constitute enforceable federal regulations or standards. Administrators of the USEPA determined in 1981 that subjective issues, such as noise, would be better addressed at lower levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. The USEPA has since delegated regulatory authority to local entities.

Table 5.13-1: Long-Term Noise Measurement Results Near Proposed LSPGC Collinsville Substation Site and 230 kV Overhead Segment

Measurement Date	Measurement Time	Measured Noise Levels, 1-Hour L_{eq} (dBA)
Monday, September 25, 2023	8:00 a.m. – 9:00 a.m.	41
	9:00 a.m. – 10:00 a.m.	47
	10:00 a.m. – 11:00 a.m.	43
	11:00 a.m. – 12:00 p.m.	47
	12:00 p.m. – 1:00 p.m.	40
	1:00 p.m. – 2:00 p.m.	51
	2:00 p.m. – 3:00 p.m.	54
	3:00 p.m. – 4:00 p.m.	44
	4:00 p.m. – 5:00 p.m.	47
	5:00 p.m. – 6:00 p.m.	49
	6:00 p.m. – 7:00 p.m.	42
	7:00 p.m. – 8:00 p.m.	49
	8:00 p.m. – 9:00 p.m.	51
	9:00 p.m. – 10:00 p.m.	49
	10:00 p.m. – 11:00 p.m.	37
	11:00 p.m. – 12:00 a.m.	41
Tuesday, September 26, 2023	12:00 a.m. – 1:00 a.m.	41
	1:00 a.m. – 2:00 a.m.	40
	2:00 a.m. – 3:00 a.m.	44
	3:00 a.m. – 4:00 a.m.	45
	4:00 a.m. – 5:00 a.m.	44
	5:00 a.m. – 6:00 a.m.	40
	6:00 a.m. – 7:00 a.m.	38
	7:00 a.m. – 8:00 a.m.	45

Notes:
L_{eq} = average equivalent sound level; dBA = A-weighted sound level

Table 5.13-2: Short-Term Noise Measurement Results Near PG&E's Existing Pittsburg Substation and Along the LSPGC Telecommunications Line

Measurement Date	Measurement Time	Measured Noise Levels, One- Hour L_{eq} (dBA)
Monday, September 25, 2023, to Tuesday, September 26, 2023	10:57 p.m. – 11:57 p.m.	46
	11:04 p.m. – 12:04 p.m.	40

Source: Arcadis 2024
Notes: L_{eq} = average equivalent sound level; dBA = A-weighted decibel

Table 5.13-3: Summary of Measured Ambient Daytime and Nighttime Noise Levels and Calculated Day-Night Ambient Noise Levels

Noise Measurement Location ID	Measurement Location Description	Measured Ambient L_{eq} (day) (dBA)	Measured Ambient L_{eq} (night) (dBA)	Calculated Ambient L_{dn} (dBA)
NM1	Short-term noise measurement location near residential receptor R5 on Halsey Court and approximately 2,200 feet southeast of the southern edge of the Delta	46	40	48
NM2	Long-term measurement location near residential receptor R3 and approximately 4,300 feet west-southwest of the proposed LSPGC Collinsville Substation site	48	42	50

Source: Arcadis 2024
Notes: L_{eq}(day) = average equivalent sound level during daytime (7:00 a.m. to 10:00 p.m.); L_{eq}(night) = average equivalent sound level during nighttime (10:00 p.m. to 7:00 a.m.); L_{dn} = A-weighted equivalent sound level for a 24-hour period with a 10-dB adjustment added to sound levels occurring during nighttime; dBA = A-weighted decibel; ID = Identification

5.13.2.1.2 State

California Government Code Section 65302

California Government Code Section 65302 encourages counties and cities to implement a noise element as part of the general plan. In addition, the California Governor's Office of Planning and Research has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

California Department of Transportation and Construction-Induced Vibration Guidance

Caltrans provides practical guidance to engineers, planners, and consultants who must address vibration issues associated with the construction and O&M of Caltrans-related projects. The guideline vibration criteria in Caltrans' Transportation and Construction Vibration Guidance Manual (Caltrans 2020) have been used to assess the effects of vibration during the Proposed Project construction.

5.13.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan's Public Health & Safety Element outlines noise reduction and abatement strategies. Table 5.13-4: Solano County Noise Element – Non-Transportation Noise Standards establishes an acceptable outdoor area noise level of 55 dBA L_{eq} for day daytime hours (i.e., 7:00 a.m. to 10:00 p.m.) and 50 dBA L_{eq} for nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) for non-transportation noise sources.

Solano County Noise Ordinance

The Solano County Noise Ordinance, Chapter 28.1 of the County Code, provides a residential and agricultural zoning exterior noise level standard of 55 dBA L_{eq} for daytime hours (i.e., 7:00 a.m. to 7:00 p.m.) and an exterior noise level standard of 50 dBA L_{eq} for nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) (Arcadis 2024). According to Section 28.1-50(a) of the noise ordinance, construction and demolition activities within 500 feet of a residential district are allowed only between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturday between 8:00 a.m. and 5:00 p.m.; construction and demolition activities are not allowed on Sundays and federal holidays.

Sacramento County General Plan

Sacramento County's General Plan's Noise Element provides a basis for comprehensive local policies to control and abate environmental noise and to protect the community from excessive noise exposure. Table 5.13-5: Sacramento County Noise Element – Non-Transportation Noise Standards establishes an acceptable outdoor area noise level of 55 dBA L_{50} for daytime hours (i.e., 7:00 a.m. to 10:00 p.m.) and 50 dBA L_{50} for nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) for non-transportation noise sources. The following goals and policy are relevant to the Proposed Project:

- Goal 1: To protect the existing and future citizens of Sacramento County from the harmful effects of exposure to excessive noise. More specifically, to protect existing noise-sensitive land uses from new uses that would generate noise levels which are incompatible with those uses, and to discourage new noise sensitive land uses from being developed near sources of high noise levels.

Table 5.13-4: Solano County Noise Element – Non-Transportation Noise Standards

Receiving Land Use	Average/Maximum Outdoor Area[1] (Average dBA [L_{eq}]/ Maximum dBA [L_{max}])		Average/Maximum Interior[1,2] (Average dBA [L_{eq}]/ Maximum dBA [L_{max}])	Notes
	Daytime	Nighttime	Day & Night	
All Residential	55/75	50/70	35/55	--
Transient Lodging	55/75	--	35/55	3
Hospitals and Nursing Homes	55/75	--	35/55	4,5
Theaters and Auditoriums	--	--	30/50	5
Churches, Meeting Halls, Schools, Libraries, etc.	55/75	--	35/60	5
Office Buildings	60/75	--	45/65	5
Commercial Buildings	55/75	--	45/65	5
Playground, Parks, etc.	60/75	--	--[7]	5
Industry	60/80	--	50/70	5

Sources: Solano County 2015, Arcadis 2024

Key: L_{eq} = Equivalent or energy averaged sound level; L_{max} = Highest root-mean-square sound level measured over a given period of time.

Notes:

1. The noise standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the noise standards, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. The outdoor activity areas of these uses (if any) are not typically utilized during nighttime hours.

Table 5.13-5: Sacramento County Noise Element – Non-Transportation Noise Standards

Receiving Land Use	Average/Maximum Outdoor Area[1] (Median dBA [L_{50}]/ Maximum dBA [L_{max}])		Average/Maximum Interior[1,2] (Median dBA [L_{50}]/ Maximum dBA [L_{max}])	Notes
	Daytime	Nighttime	Day & Night	
All Residential	55/75	50/70	35/55	--
Transient Lodging	55/75	--	35/55	3
Hospitals and Nursing Homes	55/75	--	35/55	4,5
Theaters and Auditoriums	--	--	30/50	5
Churches, Meeting Halls, Schools, Libraries, etc.	55/75	--	35/60	5
Office Buildings	60/75	--	45/65	5
Commercial Buildings	--	--	45/65	5
Playground, Parks, etc.	60/75	--	--[7]	5
Industry	60/80	--	50/70	5

Sources: Sacramento County 2022, Arcadis 2024

Key: L_{50} = Median noise level or level exceeded 50 percent of time; L_{max} = Highest root-mean-square sound level measured over a given period of time.

Notes:

1. The noise standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the noise standards, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. The outdoor activity areas of these uses (if any) are not typically utilized during nighttime hours.

- Goal 4: To provide sufficient noise exposure information so that existing and potential future noise impacts may be effectively addressed in the land use planning and project review processes.

- NO-8: Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

Sacramento County Noise Ordinance

The Sacramento County Municipal Code, Section 6.68.070, provides a residential exterior noise level standard of 55 dBA L_{eq} for daytime hours (i.e., 7:00 a.m. to 10:00 p.m.) and an exterior noise level standard of 50 dBA L_{eq} for nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) (Arcadis 2024). According to Section 6.68.090 of the Code, noise sources associated with construction, repair, remodeling, demotion, paving, or grading of any real property are exempt provided said activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays, on Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday, on Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday, or on each Sunday after the hour of 8:00 p.m.

Contra Costa County General Plan

The Contra Costa General Plan's Noise Element addresses noise control goals and policies. The Noise Element analyzes and quantifies current and projected noise levels for various sources that contribute to the community noise environment. Noise from construction activities in Contra Costa County is exempt from applicable standards during daytime hours. The following policies are relevant to the Proposed Project (Contra Costa County 2010):

- Policy 11-1: New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility. These guidelines, along with the future noise levels shown in the future noise contours maps, should be used by the county as a guide for evaluating the compatibility of "noise sensitive" projects in potentially noisy areas.

- Policy 11-2: The standard for outdoor noise levels in residential areas is a DNL of 60 dB. However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints.

- Policy 11-6: If an area is currently below the maximum "normally acceptable" noise level, an increase in noise up to the maximum should not be allowed necessarily.

- Policy 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

- Policy 11-9: Noise impacts upon the natural environment, including impacts on wildlife, shall be evaluated and considered in review of development projects.

Contra Costa County Noise Ordinance

Contra Costa County does not have a noise ordinance.

City of Pittsburg General Plan

The following policies of the City of Pittsburg General Plan (City of Pittsburg 2001) are relevant to the Proposed Project:

- Policy 12-P-9 establishes that generation of loud noises on construction sites adjacent to existing development should be limited to normal business hours between 8:00 a.m. and 5:00 p.m.

- Policy 12-P-10 establishes that the impact of truck traffic noise on residential areas should be reduced by limiting such traffic to appropriate truck routes, and that consideration is given to restrict truck travel times in sensitive areas.

The General Plan Noise Element also generally describes the following ranges of changes in ambient (existing) noise levels and how these changes would be perceived by the community, such as a residential receptor, in terms of significance of impact:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived.
- A 3-dB change is considered a "just noticeable" difference.
- A 5-dB change is required before any noticeable change in community response would be expected. A 5-dB change is often considered a "significant impact."
- A 10-dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

City of Pittsburg Noise Ordinance

The City of Pittsburg's Municipal Code Noise Ordinance (Section 9.44.010) does not establish numerical noise-level limits related to construction noise but makes it unlawful for any person to make, continue or cause to be made, or continue any noise that either unreasonably annoys, disturbs, injures, or endangers the comfort, repose, health, peace, or safety of others, within the limits of the city. Unreasonable noise sources listed in the ordinance that are potentially relevant to the Proposed Project include unmuffled vehicle exhaust (9.44.010.H) and pile drivers, hammers, and similar equipment (9.44.010.J). The city's Municipal Code Building and Construction Ordinance (Section 15.88.060.A.5) prohibits grading noise, including warming up equipment motors, within 1,000 feet of a residence between the hours of 5:30 p.m. and 7:00 a.m. on weekdays, unless otherwise approved by the City Engineer.

5.13.3 Impact Questions

5.13.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For noise, the CEQA Checklist asks if the Project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive groundborne vibration or groundborne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

5.13.3.2 Additional CEQA Questions

Pursuant to the California Public Utilities Commission's (CPUC's) Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-Filing and Proponent's Environmental Assessments, there are no additional CEQA Impact Questions required for Noise.

5.13.4 Impact Analysis

5.13.4.1 Noise Impact Analysis

5.13.4.1.1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

LSPGC and PG&E Components

Less-than-Significant Impact. CEQA defines short-term noise level increases from construction activities as significant impacts if the activities would conflict with local policies or standards. As described in Section 5.13.2 Regulatory Setting, the local noise ordinances exempt the LSPGC and PG&E Proposed Project component construction activities from applicable standards when conducted during allowable daytime hours. Any construction activities taking place outside of the allowable daytime hours would be considered to result in a significant impact if resulting noise levels at the receptors would exceed the Sacramento County and Contra Costa County exterior nighttime noise standard of 50 dBA L_{eq}. The noise ordinances in Solano County and the City of Pittsburg do not establish numerical noise-level limits related to construction noise. Although no quantitative local noise level standards are applicable to Proposed Project construction, a quantitative analysis of its construction noise is included in this analysis for informational purposes.

Proposed Project construction would generate noise that would temporarily increase ambient noise levels from the operation of on-site construction equipment (e.g., water trucks, graders, loaders, excavators, drill rigs, pile-driving equipment, and helicopters) and on-road sources (e.g., vehicle trips transporting workers, equipment, and materials). The noise levels at receptors would depend on the type of construction activity, equipment being used, duration of the construction phase, distance between the noise source and receiver, the presence of intervening structures that enhance attenuation, and the existing ambient noise levels at the receptors. Construction noise levels generated by equipment would also vary depending on several factors, such as the type and age of equipment, specific equipment manufacture and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers.

As documented in Attachment 5.13-A: Noise and Vibration Impact Assessment Report, the predicted construction noise from each Proposed Project component was predicted. This analysis conservatively assumed that all construction equipment within each construction phase would operate simultaneously for the duration of that phase; but in reality, all construction equipment would not operate concurrently. The predicted noise levels at the nearest receptor, by land-based Proposed Project component are summarized in Table 5.13-6: Predicted Construction Noise Levels.

Table 5.13-6: Predicted Construction Noise Levels

Proposed Project Component	Noise Level at Nearest Sensitive Receptor (dBA)	Approximate Distance to Nearest Sensitive Receptor (feet)
LSPGC Collinsville Substation	43 to 63	1,790
LSPGC 230 kV Overhead Segment	64 to 80	555
LSPGC 230 kV Underground Segment	< 70	2,100
LSPGC Telecommunications Line	98	20
PG&E 500 kV Interconnection	58 to 80	1,950
PG&E 12 kV Distribution Line	< 70	1,370
Staging Yard	79	270

Source: Arcadis 2024

Construction activities at the LSPGC and PG&E Proposed Project components would generally be scheduled to occur during daylight hours 6 days per week (Monday through Saturday). Work on the proposed LSPGC 230 kV Submarine Segment would occur 24 hours per day, 7 days per week until construction is completed; however, this work would not be conducted in the vicinity of any sensitive noise receptors. Apart from the proposed in-water work, night work is not anticipated to be necessary.

In addition to noise generated by on-site construction equipment, construction-related vehicle trips (e.g., worker commute trips, haul trucks, and other on-road vehicles) would increase noise levels along roadways leading to the Proposed Project site. Peak workforce requirements are

anticipated to be approximately 160 workers per day, but the average workforce on site would be less. A maximum of approximately 216 vehicle round trips per day are expected during peak construction. On average, construction of the Proposed Project would generate approximately 89 round trips per day. This temporary increase in vehicle traffic would increase ambient traffic noise levels along roadways, but any increase would be minimal, as these trips would be spread out throughout the day.

Although Proposed Project construction would increase noise above existing ambient levels at the nearest receptors, the increases would be temporary, would be intermittent, and would typically occur during daylight hours when elevated noise is more tolerable. In addition, construction noise in the Proposed Project area would be exempt from numerical standards during daytime hours. Therefore, the Proposed Project construction noise would result in a less-than-significant impact.

Operations and Maintenance

LSPGC and PG&E Components

Less-than-Significant Impact. Long-term O&M noise impacts would be considered significant if the LSPGC and PG&E Proposed Project components-related noise would exceed the Solano, Sacramento, and Contra Costa County exterior noise standards of 55 dBA L_{eq} or L_{50} during daytime hours (i.e., 7:00 a.m. to 10:00 p.m.) or 50 dBA L_{eq} or L_{50} during nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.). For most common noise sources, L_{50} can be interpreted as close to the L_{eq} metric. Solano, Sacramento, and Contra Costa counties specify CNEL-based community noise exposure levels that consider the contributions of daytime and nighttime noise levels. The maximum allowable noise exposure level for residential land use would be 60 dBA CNEL. For typical community noise environments, the CNEL and L_{dn} levels are nearly always within 1 dB of each other and, therefore, are commonly used interchangeably. The City of Pittsburg considers a 3 dB increase in ambient noise to be just noticeable, a 5 dB increase as a significant impact, and a 10 dB increase to almost always cause an adverse community reaction.

The primary sources of noise associated with operation of the proposed LSPGC Collinsville Substation would be from the on-site transformers, climate control units, and series reactors. Attachment 5.13-A: Noise and Vibration Impact Assessment Report details the methods and assumptions used to predict the new substation's operational noise. The results of the modeled daytime, nighttime, and day-night noise levels from the operation of all substation equipment (excluding existing noise levels) at the nearest sensitive receptor, located approximately 1,790 feet away, was estimated to be 38.2 dBA L_{eq} (day), 38.2 dBA L_{eq} (night), and 44.6 dBA L_{dn} (or CNEL). These results indicate that predicted noise levels for the proposed LSPGC Collinsville Substation would be below Solano County's exterior noise standards of 55 dBA L_{50} (or L_{eq}) and 50 dBA L_{50} (or L_{eq}) during daytime and nighttime hours, respectively. These levels would also be below the Solano County General Plan's allowable noise exposure level of 60 dBA CNEL (or L_{dn}) for residential land uses. Therefore, noise associated with the proposed LSPGC Collinsville Substation operational equipment would result in a less-than-significant impact.

Corona-generated audible noise in fair and foul weather from the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection were predicted, as described in Attachment 5.13-A: Noise and Vibration Impact Assessment Report. The predicted noise levels

for these Proposed Project components in both fair and foul weather conditions directly under the line and at the edge of the right-of-way (ROW) are summarized in Table 5.13-7: Predicted Corona Noise Levels.

Table 5.13-7: Predicted Corona Noise Levels

Proposed Project Component	Scenario	Predicted Noise Level (dBA)	
		Under the Line	Edge of ROW
LSPGC 230 kV Overhead Segment	Fair Weather	11	9
	Foul Weather	36	34
PG&E 500 kV Interconnection	Fair Weather	41	38
	Foul Weather	66	63

Source: Arcadis 2024

The corona noise associated with the proposed LSPGC 230 kV Overhead Segment at the nearest receptor (approximately 555 feet away) would be approximately 0 dBA in fair weather and 25 dBA in foul weather. Both levels would be below the daytime and nighttime noise levels of 48 dBA and 42 dBA, respectively. For the proposed PG&E 500 kV Interconnection, audible noise levels would be much higher; however, no sensitive noise receptors are located within 0.25 mile of this Proposed Project component. In addition, the noise levels from foul weather (i.e., rainfall) would mask most of the audible noise from the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection. Therefore, noise from these Proposed Project components would not be audible at the nearest sensitive receptors and as such, no impact would result. Because corona noise levels decrease with operating voltage, the anticipated operational noise of the proposed PG&E 12 kV Distribution Line would be well below that associated with the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection and would not be audible at the nearest sensitive receptors. All other Proposed Project components would be located underwater or underground and would not generate audible noise. As a result, impacts from corona-related noise would be less than significant.

The proposed LSPGC Collinsville Substation would be unstaffed and operated remotely. System-wide assessments would be accomplished primarily through visual inspections, which would consist of quarterly observations of the substation and related equipment. LSPGC would regularly inspect, maintain, and repair the Proposed Project following construction. Typical O&M activities would involve routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service. The routine on-site inspection and maintenance activities would be conducted by small, specialized teams at the Proposed Project site. Such activities would result in a negligible number of vehicle trips per year (by light utility trucks) that would not be anticipated to have a substantive impact on traffic noise along roadways in the Proposed Project vicinity. PG&E would be responsible for maintaining and operating its respective portions of the Proposed Project. Therefore, on-site maintenance is not anticipated to result in a substantial increase in noise levels, and impacts would be less than significant.

5.13.4.1.2 Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction

LSPGC and PG&E Components

Less-than-Significant Impact. CEQA considers groundborne vibration or noise levels from construction activities to be considered significant if they would cause damage to structures or cause sleep disturbance at night near residential areas. No vibration-sensitive structures were identified in the Proposed Project's immediate vicinity. The nearest noise-sensitive receptors to the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection are approximately 1,790 feet, 555 feet, and 1,950 feet away, respectively. The nearest receptors to the proposed LSGPC 230 kV Underground Segment and LSPGC Telecommunications Line would be approximately 2,100 feet and 20 feet away, respectively. No vibration-sensitive receptors are located in the vicinity of the proposed LSGPC 230 kV Submarine Segment.

The five types of equipment most likely to create vibration during Proposed Project construction include a drill rig, large bulldozer, loaded truck, vibratory roller, and vibratory hammer/impact hammer. Details of the method and assumptions used to predict the Proposed Project construction vibration, including reference vibration levels at 25 feet for the five types of equipment as well as the distance where building damage and human annoyance would occur, are provided in Attachment 5.13-A: Noise and Vibration Impact Assessment Report.

As documented in Attachment 5.13-A: Noise and Vibration Impact Assessment Report, groundborne vibration would attenuate rapidly with distance and would not be perceptible beyond 107 feet from the construction work sites. The Caltrans vibration threshold for building damage (older residential structures) is 0.3 PPV inch per second; vibration from construction equipment would attenuate to below this level within 42 feet of the source and would not cause any cosmetic or structural damage to the nearest structure, which is approximately 555 feet away from all Proposed Project component locations, except for single-family residences located approximately 20 feet from the proposed LSPGC Telecommunications Line. At the proposed LSPGC Telecommunications Line, the piece of equipment most likely to create substantial vibration would be loaded trucks. As documented in Attachment 5.13-A: Noise and Vibration Impact Assessment Report, vibration levels from loaded trucks would attenuate to below the vibration damage criterion (0.3 PPV inch per second) within 10 feet of the source and would not cause any cosmetic or structural damage to the nearest structures located approximately 20 feet away. As a result, impacts to structures from groundborne vibration would be less than significant.

As documented in Attachment 5.13-A: Noise and Vibration Impact Assessment Report, the Caltrans threshold for human annoyance at residential uses is 0.01 inch per second. Vibration levels from construction equipment would attenuate to below this level within 405 feet of the source and would not be perceptible at the nearest sensitive receptor, which is approximately 555 feet away, except for the single-family residences located approximately 20 feet from the proposed LSPGC Telecommunications Line construction. For the proposed LSPGC Telecommunications Line, the pieces of equipment most likely to create substantial vibration would be loaded trucks. As documented in Attachment 5.13-A: Noise and Vibration Impact

Assessment Report, vibration from loaded trucks would attenuate to below the vibration annoyance criterion (0.01 PPV inch per second) within 97 feet of the source and could be strongly perceptible to people living in single-family residences 20 feet away. To minimize vibration annoyance impacts from loaded trucks, the work would be conducted during the daytime when most people are not in the area (e.g., at work). Consequently, the loaded trucks would not operate at night and as such, would not cause sleep disturbance near the residential area. In addition, these residences are located along existing city streets where existing vehicle traffic is present. Because of distance attenuation, proximity to existing roadway traffic, and prohibition of nighttime work, construction would not have the potential to generate significant short-term groundborne vibration or groundborne noise at the nearest sensitive receptors. Therefore, construction-related vibration and groundborne noise associated with the Proposed Project would result in a less-than-significant impact.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. LSPGC and PG&E O&M activities would not involve the use of any large rotating equipment or heavy machinery that would introduce any new sources of perceivable groundborne vibration. O&M at the proposed LSPGC Collinsville Substation would not introduce new sources of permanent vibration. Therefore, O&M activities have no potential to generate groundborne vibration levels greater than the significance criteria for structural damage to older residential structure (0.3 inch per second) or for human annoyance (0.01 inch per second), and there would be no impact.

5.13.4.1.3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would not be located within the vicinity of a private airstrip or within 2 miles of a public airport or public use airport. Therefore, the Proposed Project would not expose people residing or working at the site to excessive noise levels from aircraft. As a result, no impact would occur.

5.13.4.2 Noise Levels

Attachment 5.13-A: Noise and Vibration Impact Assessment Report provides details on the noise levels that would be produced during construction of the Proposed Project. Table 3-9: Proposed Construction Equipment and Workforce in Chapter 3 – Project Description identifies each construction phase and their durations.

5.13.5 CPUC Draft Environmental Measures

The CPUC does not recommend any Draft Environmental Measures for noise.

5.13.6 Applicant-Proposed Measures

5.13.6.1 Noise Applicant-Proposed Measures

No applicant-proposed measures (APMs) would be implemented for noise because impacts would be less than significant.

5.13.7 PG&E Construction Measures

5.13.7.1 Noise PG&E Construction Measures

No Construction Measures would be implemented for noise because impacts would be less than significant.

5.13.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be at least 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts from noise associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area is located in the same distance from sensitive receptors and would be constructed with the same construction methods. As such, the potential modification would result in less-than-significant impacts to noise, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.14 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

This section describes the population and housing in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.14.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.14.1.1 Population Estimates

Historical and projected future population data are presented in Table 5.14-1: Population Trends in the Proposed Project Vicinity. According to the United States (U.S.) Census Bureau, from 2010 to 2020, the Contra Costa County population grew by 12 percent, the Sacramento County population grew by 10.2 percent, the Solano County population grew by 8.4 percent, and the City of Pittsburg's population grew by 16.2 percent. The California Department of Finance projects that, from 2020 to 2030, the Contra Costa County population will grow by 2.1 percent,

the Sacramento County population will grow by 4.8 percent, and the Solano County population will grow by 1.5 percent. According to the City of Pittsburg 2015-2023 Housing Element, the population will grow by 13.4 percent from 2020 to 2030. The projected future population data emphasize that the populations in the Proposed Project vicinity will continue growing into 2040.

Table 5.14-1: Population Trends in the Proposed Project Vicinity

Year	Contra Costa County	Sacramento County	Solano County	City of Pittsburg
2000	948,816	1,223,499	394,542	56,820
2010	1,024,809	1,395,144	410,042	61,723
2020	1,147,788	1,537,948	444,538	71,723
2030	1,171,945	1,611,309	451,280	81,300
2040	1,274,708	1,708,461	476,163	91,600

Sources: U.S. Census Bureau 2020, 2022; California Department of Finance 2022; City of Pittsburg 2015

5.14.1.2 Housing Estimates

Housing data and vacancy rates are presented in Table 5.14-2: Housing Data in the Proposed Project Vicinity. According to the U.S. Census Bureau, vacancy rates in Contra Costa County, Sacramento County, Solano County, and the City of Pittsburg have all decreased from 2010 to 2020; a total of 46,440 vacant units were available across the counties in 2020.

Table 5.14-2: Housing Data in the Proposed Project Vicinity

Area	2010			2020		
	Total Units	Vacant Units	Vacancy Rate	Total Units	Vacant Units	Vacancy Rate
Contra Costa County	400,263	24,899	6.2%	423,342	16,313	3.9%
Sacramento County	555,932	41,987	7.6%	587,551	23,106	3.9%
Solano County	152,698	10,940	7.2%	162,237	6,313	3.9%
City of Pittsburg	21,126	1,599	7.6%	24,078	708	2.9%

Sources: U.S. Census Bureau 2020, 2022

The California Department of Housing and Community Development and local councils of government assign a Regional Housing Needs Allocation (RHNA) every 5 years to each local government in California. The RHNA determines the total number of new homes a local government must construct and how affordable each home must be to meet housing needs in that locality (Association of Bay Area Governments [ABAG] 2022). The local council of government for Contra Costa County, Solano County, and City of Pittsburg is ABAG; and the local council of government for Sacramento County is the Sacramento Area Council of Governments.

According to the Contra Costa County General Plan Housing Element, 1,841 housing units were approved for construction to meet the RHNA for January 2014 to October 2022 (Contra Costa County 2014). For 2021 to 2029, 522 housing units were approved for construction to meet Sacramento County's RHNA (Sacramento County 2022). Nine housing units were approved for construction to meet Solano County's RHNA for 2014 to 2022 (Solano County 2015). The City of Pittsburg approved 1,122 housing units to satisfy the 2014 to 2022 RHNA goal (City of Pittsburg 2015). Therefore, an increase in available housing in the Proposed Project vicinity is expected in the near term.

5.14.1.3 Approved Housing Developments

A review of the City of Pittsburg planning website identified a pending approval of the Bay Walk Mixed Use Project, Harbor View Project, East Street Estates, and Liberty Subdivision Phase II housing developments within 1 mile of the Proposed Project.

The Bay Walk Mixed Use Project would be constructed on a 1,046-acre project site adjacent to PG&E's existing Pittsburg Substation. The mixed-use development would include three project phases and the construction of 698 residential units during phase I, 445 residential units during phase II, and 561 residential units during phase III. A construction timeline has not been specified, and the project documents do not provide an estimated population increase (City of Pittsburg 2022). Contact information for the developer is provided in Attachment 5.14-A: Housing Developer Contact Information.

The Harbor View Project would construct approximately 227 residential units and commercial space approximately 0.4 mile east of the proposed LSGPC Telecommunications Line. The project could result in a population increase of 756 people (Raney Planning & Management, Inc. 2023). A developer and construction timeline has not been specified for the project.

East Street Estates would construct eight single-family dwellings in an existing subdivision located approximately 0.4 mile southeast of the proposed LSPGC Telecommunications Line. A construction timeline has not been specified for the project, and project documents do not provide an estimated population increase. Contact information for the developer is provided in Attachment 5.14-A: Housing Developer Contact Information.

Liberty Subdivision Phase II would construct approximately 16 single-family homes approximately 0.6 mile southeast of the proposed LSPGC Telecommunications Line. A construction timeline has not been specified for the project, and project documents do not provide an estimated population increase. Contact information for the developer is provided in Attachment 5.14-A: Housing Developer Contact Information.

No other approved or pending housing developments were identified within 1 mile of the Proposed Project based on a review of the Contra Costa County, Sacramento County, and Solano County planning websites.

5.14.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.14.2.1 Regulatory Setting

5.14.2.1.1 Federal

No federal policies or regulations related to population and housing are relevant to the Proposed Project.

5.14.2.1.2 State

No state policies or regulations related to population and housing are relevant to the Proposed Project.

5.14.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Contra Costa County, Sacramento County, Solano County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Contra Costa County General Plan

The Housing Element of the Contra Costa County General Plan contains goals, policies, plans, and programs that guide housing development to meet the needs of residents in unincorporated Contra Costa County. The Housing Element provides background on the existing community profile and evaluates the current and future housing needs, potential development opportunities, housing constraints, and potential resources to meet housing goals. The Housing Element does not contain any population or housing policies relevant to the Proposed Project.

Sacramento County General Plan

The 2021-2029 Housing Element of the Sacramento County General Plan contains goals, policies, and programs that guide housing development to meet the needs of residents in unincorporated Sacramento County. The 2021-2029 Housing Element reviews the existing and projected population, current housing characteristics, projected housing needs, constraints on housing development, and potential financial resources available to achieve housing goals. The

Housing Element does not contain any population or housing policies relevant to the Proposed Project.

Solano County General Plan

The 2015-2023 Housing Element of the Solano County General Plan contains goals, objectives, policies, and programs that guide housing development to meet the needs of residents in unincorporated Solano County. The 2015-2023 Housing Element presents a housing needs assessment based on the community's population and household characteristics and discusses the resources available to assist the county in meeting housing needs. The 2015-2023 Housing Element does not contain any population or housing policies relevant to the Proposed Project.

City of Pittsburg General Plan

The 2015-2023 Housing Element of the City of Pittsburg General Plan contains an analysis of local housing needs by examining project population growth, household characteristics, demographic factors, housing constraints, and more. The 2015-2023 Housing Element identifies available housing sites and proposes goals, policies, and programs to meet the housing needs of the community. The 2015-2023 Housing Element does not contain any population or housing policies relevant to the Proposed Project.

5.14.3 Impact Questions

5.14.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For population and housing, the CEQA Environmental Checklist asks if the Project would:

- Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

5.14.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for population and housing.

5.14.4 Impact Analysis

5.14.4.1 Population and Housing Impact Analysis

5.14.4.1.1 Would the project induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes or business)

or indirectly (e.g., through extension of roads or other infrastructure)?

Construction

LSPGC and PG&E Components

No Impact. Construction of the LSPGC and PG&E Proposed Project components would neither directly nor indirectly induce substantial population growth in the area. Peak employment would be approximately 160 workers per day during construction, but the workforce on site would be less on average. The temporary labor demands of the LSPGC and PG&E Proposed Project components would be met by existing employees, by hiring specialty construction and electrical contractors who already reside in the surrounding areas, or by hiring specialty construction and electrical contractors from outside the local area who may temporarily reside in the vicinity of the Proposed Project while construction is underway. Any traveling workers not returning to their homes between workdays would obtain temporary off-site accommodations (e.g., hotels or other short-term rentals in the region) during construction. Hotels and short-term rentals are available in the Proposed Project vicinity, including Suisun City, Fairfield, and Pittsburg. No on-site temporary housing would be constructed. A substantial number of workers could be sourced from the Proposed Project vicinity and may commute from Solano, Sacramento, and Contra Costa counties. Workers sourced from outside of the local area would not be anticipated to permanently relocate to the areas surrounding the Proposed Project. Additionally, the Proposed Project would not develop or extend roads or other infrastructure that could potentially induce population growth. Therefore, no substantial population growth would be induced by the construction of the LSPGC and PG&E Proposed Project components, and there would be no impact.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would be operated remotely. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted. A small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. Therefore, no population growth would be induced by operation of the LSPGC and PG&E Proposed Project components, and there would be no impact.

5.14.4.1.2 Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

LSPGC and PG&E Components

No Impact. Construction activities would occur on lands designated for agriculture, natural resource preservation, and industrial activities. No housing currently exists where LSPGC and

PG&E Proposed Project facilities would be located. Additionally, approximately 4.5 miles of the proposed LSPGC 230 kV Submarine Segment would be constructed in the Delta where no housing is located. Therefore, construction of the LSPGC and PG&E Proposed Project components would not displace any existing people or housing; no replacement housing would need to be constructed elsewhere; and no impact would occur.

Operations and Maintenance

LSPGC and PG&E Components

No Impact. As discussed previously, the LSPGC and PG&E Proposed Project components would be operated remotely. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted. A small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. O&M activities associated with the LSPGC and PG&E Proposed Project components would not displace people or housing, as the activities would occur within Proposed Project facilities and associated interconnected transmission lines. Therefore, no replacement housing would need to be constructed elsewhere, and no impact would occur.

5.14.4.2 Impacts to Housing

No existing or proposed homes occur within the LSPGC and PG&E Proposed Project components' footprint; therefore, no homes would be demolished. As a result, no impact would occur.

5.14.4.3 Workforce Impacts

As described previously, a maximum of approximately 160 workers per day would be required to construct the LSPGC and PG&E Proposed Project components, but the average number of daily workers on site would be less. The labor demands of the Proposed Project would be met by existing employees, and California contractors would be utilized for construction activities when possible. Workers would likely commute from the greater San Francisco and Sacramento areas. Any traveling workers not returning to their homes between workdays would obtain temporary off-site accommodations (e.g., hotels or other short-term rentals in the region) during construction. Hotels and short-term rentals are available in the Proposed Project vicinity, including Suisun City, Fairfield, and Pittsburg. No on-site temporary housing would be constructed.

5.14.4.4 Population Growth Inducing

Information regarding the Proposed Project's growth-inducing impacts is provided in Chapter 7 – Cumulative and Other CEQA Considerations.

5.14.5 CPUC Draft Environmental Measures

No CPUC Draft Environmental Measures are identified for population and housing.

5.14.6 Applicant-Proposed Measures

5.14.6.1 Population and Housing Applicant-Proposed Measures

No applicant-proposed measures (APMs) would be implemented for population and housing because no impact would occur.

5.14.7 PG&E Construction Measures

5.14.7.1 Population and Housing PG&E Construction Measures

No Construction Measures are proposed for population and housing because no impact would occur.

5.14.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to population and housing associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not displace any existing housing nor induce population growth. As such, the potential modification would not induce population growth or result in an increase in housing demand, and no additional Mitigation Measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.15 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?				✓
Police protection?				✓
Schools?			✓	
Parks?			✓	
Other public facilities?			✓	

This section describes the public services in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.15.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.15.1.1 Service Providers

5.15.1.1.1 Fire and Emergency Services

Fire protection and emergency services for the Proposed Project vicinity are provided by the Montezuma Fire Protection District and Contra Costa Fire Protection District. The Proposed Project would not overlap with the service areas of Sacramento County's fire protection districts.

The Montezuma Fire Protection District is a combination paid and volunteer department that serves approximately 300 square miles of mostly farmland and pastures throughout Birds Landing, Collinsville, Hastings Island, Prospect Island, Ryer Island, and Holland Tract, with its main headquarters (Fire Station 51) located at 21 North 4th Street in the City of Rio Vista. The fire protection district also operates an additional station (Fire Station 52) at 2151 Collinsville Road in Birds Landing. The nearest fire station to the Proposed Project is Fire Station 52, which is located approximately 4 miles northwest of the LSPGC 230 kV Overhead Segment. Figure 5.15-1: Public Service Facilities displays the approximate locations of the fire stations in the vicinity of the Proposed Project. Dispatch of fire services is facilitated by the Solano County Sheriff's Office Emergency Communications Center, and the average response time is not publicly available. The Public Facilities and Services chapter of the Solano County General Plan established the goal of facilitating coordination among city and county fire agencies and districts to improve response times, but does not specify a response time (Solano County 2008).

The Contra Costa County Fire Protection District (Con Fire) provides emergency services to nearly 1 million people across the approximately 304-square-mile district area (Contra Costa County 2022). The proposed LSPGC 230 kV Underground Segment would be approximately 1.5 miles northwest of Fire Station 84 at 1903 Railroad Avenue in Pittsburg. Figure 5.15-1: Public Service Facilities displays the approximate locations of the fire stations in the vicinity of the Proposed Project. The Contra Costa Regional Fire Communications Center dispatches fire and medical emergency services. The average response time of Con Fire is not publicly available. The Public Facilities/Services Element of the Contra Costa County General Plan sets an emergency response time goal of 5 minutes in central business district, urban, and suburban areas for 90 percent of fire protection emergency responses in the county (Contra Costa County 2005).

County-level responses and planning regarding emergency services in the Proposed Project vicinity are coordinated by the Solano County Office of Emergency Services, Contra Costa Office of the Sheriff Emergency Services Division, and the Sacramento County Office of Emergency Service (SacOES). The Solano County Office of Emergency Services, located at 355 Tuolumne Street Suite 2400 in Vallejo, is responsible for the establishment and maintenance of programs and procedures that provide for the protection of lives and property of Solano County residents after natural or man-made disasters, including floods, earthquakes, major fires, storms, radiological or hazardous material incidents, aircraft accidents, mass casualty incidents, and any emergency-related function that supports the Solano County Sheriff's Office. The Contra Costa County Office of the Sheriff Emergency Services Division is located at 1850 Muir Road in Martinez and is responsible for planning, outreach, and training for disaster management and emergency preparedness (Contra Costa County Office of the Sheriff 2023). SacOES coordinates the countywide response to large-scale incidents and disasters. SacOES is responsible for notifying appropriate agencies in the event of a disaster, coordinating all responding agencies, ensuring resources are available and mobilized for disaster, and developing response and recovery plans (SacOES 2023).

Figure 5.15-1: Public Service Facilities

5.15.1.1.2 Police and Protection Services

Sheriff and police departments serving the Proposed Project and the surrounding area include the Solano County Sheriff's Office, City of Rio Vista Police Department, and City of Pittsburg Police Department. The Solano County Sheriff's Office serves Solano County, and the office is located in Fairfield at 530 Union Avenue, approximately 16 miles northwest of the proposed LSPGC 230 kV Overhead Segment. The average response time for the Solano County Sherriff's Office is not publicly available.

The proposed LSPGC 230 kV Overhead Segment would be located approximately 10 miles southwest of the City of Rio Vista Police Department, which is under contract with the Solano County Sheriff's Office, at 50 Poppy House Road in Rio Vista. The City of Rio Vista Police Department provides services to approximately 100,000 people (Solano County n.d.). The City of Rio Vista Police Department's current average response time is not publicly available. The City of Pittsburg Police Department serves a population of over 76,000 people (City of Pittsburg 2023), and it is located at 65 Civic Avenue in Pittsburg, approximately 1.4 miles southeast of PG&E's existing Pittsburg Substation, as depicted in Figure 5.15-1: Public Service Facilities. The City of Pittsburg Police Department's current average response time is not publicly available.

5.15.1.1.3 Hospitals

NorthBay Medical Center and Concord Medical Center are the nearest hospitals to the Proposed Project. NorthBay Medical Center, located at 1000 Nut Tree Road in Vacaville, is approximately 17 miles from the LSPGC 230 kV Overhead Segment. Concord Medical Center at 2540 East Street in Concord is located approximately 8 miles southwest of PG&E's existing Pittsburg Substation, as depicted in Figure 5.15-1: Public Service Facilities.

5.15.1.1.4 Schools

Eighteen public school districts serve more than 169,000 students in Contra Costa County (Contra Costa County Office of Education 2023a). Solano County has seven public school districts serving approximately 71,000 students (Solano County n.d.), and Sacramento County has 13 public school districts serving over 247,000 students (Sacramento County Office of Education 2023). The Proposed Project would be located within the Fairfield-Suisun Unified School District in Solano County and the Pittsburg Unified School District in Contra Costa County. Other nearby districts include the Antioch Unified School District in Contra Costa County and the River Delta Unified School District located in Solano and Sacramento counties. As shown in Table 5.15-1: Schools within 1 Mile of the Proposed Project, the proposed LSPGC Telecommunications Line would be located approximately 0.2 mile from Marina Vista Elementary School and along Halsey Way adjacent to the south side of St. Peter Martyr School, a private preschool through eighth grade. Figure 5.15-1: Public Service Facilities depicts the schools described in Table 5.15-1: Schools within 1 Mile of the Proposed Project, as well as other public facilities in the vicinity of the Proposed Project.

Table 5.15-1: Schools within 1 Mile of the Proposed Project

School Name	Public or Private	Proximity to the Proposed Project	Address
St. Peter Martyr School	Private	Adjacent to the proposed LSPGC Telecommunications Line	425 West 4th Street, Pittsburg
Marina Vista Elementary School	Public	0.2 mile southeast of the proposed LSPGC Telecommunications Line	50 East 8th Street, Pittsburg
Parkside Elementary School	Public	0.8 mile southwest of the proposed LSPGC Telecommunications Line	985 West 17th Street, Pittsburg
Pittsburg High School	Public	1 mile southeast of the proposed LSPGC Telecommunications Line	1750 Harbor Street, Pittsburg

Source: Pittsburg Unified School District 2023

5.15.1.1.5 Parks

Several parks and recreation areas (e.g., the Sacramento-San Joaquin River Delta [Delta], Suisun Marsh, Lower Sherman Island Wildlife Area, Winter Island, and Heritage Plaza Park) are located within 1 mile of the Proposed Project. Additional information about recreation resources is provided in Section 5.16 Recreation.

5.15.1.1.6 Other Services

Other service facilities within the Proposed Project vicinity include a library and a community center, which are summarized in Table 5.15-2: Public Service Facilities within 1 Mile of the Proposed Project. The proposed LSPGC Telecommunications Line would cross the Marina Community Center property in Pittsburg.

Table 5.15-2: Public Service Facilities within 1 Mile of the Proposed Project

Public Service Facility Name	Proximity to the Proposed Project	Address
Marina Community Center	Crossed by the proposed LSPGC Telecommunications Line	340 Marina Boulevard, Pittsburg
Pittsburg Library	1 mile south of the proposed LSPGC Telecommunications Line	80 Power Avenue, Pittsburg

Source: Google Earth 2023

5.15.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.15.2.1 Regulatory Setting

5.15.2.1.1 Federal

No federal regulations related to public services are relevant to the Proposed Project.

5.15.2.1.2 State

California Fire Code

Title 24, Part 9 of the California Code of Regulations is known as the California Fire Code. This code includes provisions for planning, precautions, and preparations for fire safety and fire protection during various activities. This includes, but is not limited to construction, demolition, building requirements, and guidelines for working with flammable chemicals and materials (California Building Standards Commission 2022).

California Public Resources Code Sections 4292 and 4293

California Public Resources Code (PRC) Section 4292 states the following:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line … shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

PRC Section 4293 states the following:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> (a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
> (b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
> (c) For any line which is operating at 110,000 or more volts, 10 feet
>
> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

5.15.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Public Facilities and Services chapter of the Solano County General Plan contains the following policies and implementation programs with regards to public services, utilities, and service systems:

- PF.I-35: Coordinate with the fire districts and California Department of Forestry and Fire Protection during project review to ensure that all new development incorporates appropriate fire-safety techniques, including fire-safe building materials, early-warning systems, adequate clear spaces and fuel reduction, adequate escape routes and facilities, fire breaks, and sufficient water supply systems for fire suppression.
- PF.P-38: Ensure accessible and cost-effective fire and emergency medical service throughout the county. Facilitate coordination among city and county fire agencies and districts to improve response times, increase services levels, provide additional training, and obtain essential equipment.
- PF.P-39: Identify and require incorporation of fire protection and emergency response measures in the review and approval of new projects.
- PF.P-41: In the review and approval of county and city projects, identify and consider the law enforcement needs generated by the Proposed Project.

Sacramento County General Plan

The Public Facilities Element of the Sacramento County General Plan was reviewed for relevant policies to the Proposed Project, and none were identified.

Contra Costa County General Plan

The Public Facilities/Services Element of the Contra Costa County General Plan contains the following relevant policies:

- 7-62. The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in all central business district (CBD), urban, and suburban areas. (These areas are defined in Section 4).

- 7-63. The County shall strive to achieve a total response time (dispatch plus running and set-up time) of five minutes in CBD, urban and suburban areas for 90 percent of all emergency responses.

City of Pittsburg General Plan

The Public Facilities chapter of the City of Pittsburg General Plan was reviewed for relevant policies to the Proposed Project, and none were identified.

5.15.3 Impact Questions

5.15.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For public services, the CEQA Environmental Checklist asks if the Proposed Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

  – Fire protection?
  – Police protection?
  – Schools?
  – Parks?
  – Other public facilities?

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for public services.

5.15.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for public services.

5.15.4 Impact Analysis

5.15.4.1 Public Services Impact Analysis

5.15.4.1.1 Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives?

Construction

LSPGC and PG&E Components

Fire and Police Protection

No Impact. Construction of the LSPGC and PG&E Proposed Project components would not affect service ratios, response times, or other public service objectives of fire and police protection in the area. No complete shutdowns of roads are planned as part of Proposed Project construction. Any temporary closures would be coordinated with local jurisdictions and emergency service providers through the encroachment permit process and any required traffic control plans. These permits may require the application of appropriate traffic control measures during this work to ensure that potential changes to service ratios are minimized.

The LSPGC and PG&E Proposed Project components would not require expansion of fire services, and LSPGC and PG&E would clear and trim vegetation in work areas prior to construction in order to minimize fire risk. Perimeter security fencing would be installed around the outer limits of the substation work area. Lighting would also be installed for security purposes during construction. Construction crews would lock up and secure each staging yard to prevent theft or vandalism associated with work equipment or supplies at the completion of each workday. Although the need for police services may arise during construction, such a need would not exceed the capacity of the existing providers in the vicinity of the LSPGC and PG&E Proposed Project components and would not require the provision of service beyond existing capacities. Therefore, the LSPGC and PG&E Proposed Project components would not require new or physically altered fire and police departments to maintain acceptable response times and service ratios of emergency services. As a result, no impact would occur.

LSPGC Components

School, Parks, and Other Public Facilities

Less-than-Significant Impact. It is not anticipated that construction of the LSPGC Proposed Project components would adversely affect the provision of services by schools, parks, or other public facilities in the Proposed Project vicinity. The closest public school, Marina Vista Elementary School, is located approximately 0.2 mile from the proposed LSPGC Telecommunications Line. The proposed LSPGC Telecommunications Line would be routed underground along Halsey Way adjacent to St. Peter Martyr School. To minimize disruption to the school during construction, applicant-proposed measure (APM) PUB-1 would be implemented. APM PUB-1 would require all construction within 320 feet of the school to be

coordinated with the school's administration and scheduled during the summer months, when school is out of session, to minimize disruptions to school access.

Construction of the proposed LSGPC Collinsville Substation and LSPGC 230 kV Transmission Line, would be unlikely to disrupt access to schools as no construction would occur in or along roadways used to access schools. As described in Section 5.16 Recreation, several parks and recreation areas would be within 1 mile of the LSPGC Proposed Project components. Construction of the LSPGC Proposed Project components would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities. Furthermore, construction of the proposed LSPGC Telecommunications Line would not occur on any areas used by St. Peter Martyr School's sports leagues.

Section 5.16 Recreation discusses temporary restrictions and closures at the Delta and Suisun Marsh during construction, as well as the APMs proposed to reduce the impacts on access to these recreational areas. The closures and restrictions would be localized and would not restrict overall water-oriented recreational use.

Construction activities would be unlikely to impact other public facilities such as hospitals and libraries due to their distance from the LSPGC Proposed Project components and the scope of construction. Construction would not impact the closest hospital as it would be approximately 8 miles from the LSPGC Proposed Project components. The Pittsburg Library would be approximately 1 mile from the proposed LSPGC Telecommunications Line. Proposed Project construction would not require the closure of roads or lanes that are used to access these public facilities. The proposed LSPGC Telecommunications Line would be installed underground along Marina Boulevard adjacent to the Marina Community Center, and the cable would cross the community center property for approximately 90 feet. Installation of the cable could cause minor traffic delays near the community center, but overall access to the community center would be maintained during construction as the installation of the cable would not block access to the community center's parking lot.

Construction of the LSPGC Proposed Project components would not induce population growth in the area and, thus, would not generate the need for new or additional public facilities. Therefore, the impact would be less than significant.

PG&E Components

School, Parks, and Other Public Facilities

No Impact. Construction of the PG&E Proposed Project components would be unlikely to disrupt access to schools as no construction would occur in or along roadways used to access schools. Furthermore, as discussed in Section 5.16 Recreation, construction of the PG&E Proposed Project components would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities. Therefore, no impact would occur.

Operations and Maintenance

LSPGC and PG&E Components

Fire and Police Protection

No Impact. O&M of the LSPGC and PG&E Proposed Project components would not adversely affect the provision of fire, police, and emergency services or create demand for additional services. The proposed LSPGC and PG&E Proposed Project components would be operated and monitored remotely. Because the LSPGC and PG&E Proposed Project components would not result in additional workers in the area, it would not create increased demand for fire, police, or emergency services. LSPGC maintenance would be performed by existing LSPGC personnel or qualified contractors. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. Due to the small crew size and frequency of dispatch, routine maintenance activities would not alter traffic levels or impede emergency response. As a result, no impact would occur.

School, Parks, and Other Public Facilities

No Impact. As previously discussed, the proposed LSPGC and PG&E Proposed Project components would be operated and monitored remotely. Maintenance and emergency responses for the LSPGC Proposed Project components would be performed by existing LSPGC personnel or qualified contractors. PG&E's maintenance activities would continue as they currently do in the area and would not change. The scope and frequency of maintenance activities would not impact public access to the previously described public facilities in the vicinity of the Proposed Project. Therefore, the LSPGC and PG&E Proposed Project components would not induce population growth that would adversely affect the use or operation of schools, parks, or other facilities or create the need for new public facilities. The LSPGC and PG&E Proposed Project components would not generate new students for the area's schools, as no new personnel would be hired to maintain and operate the facilities; therefore, no new or physically altered schools would be necessary. As a result, no impact would occur.

5.15.4.2 Emergency Response Times

The Proposed Project would not impede ingress and egress of emergency vehicles. As previously discussed, any temporary lane and road closures due to work over or adjacent to public roadways during construction or O&M would comply with the local permitting process and would occur in coordination with local jurisdictions. In addition, all traffic control measures required by applicable permits would be implemented. Therefore, the LSPGC and PG&E Proposed Project components would not significantly impact emergency providers' response times during construction or O&M.

5.15.4.3 Displaced Population

The Proposed Project itself is not anticipated to create permanent employment nor displace people. During O&M, the LSPGC and PG&E Proposed Project components would be operated and monitored remotely. Maintenance and emergency responses for the LSPGC Proposed Project components would be performed by existing LSPGC personnel or qualified contractors, and PG&E's maintenance activities would continue as they currently do in the area and would not change. No new employees would be hired for the Proposed Project, and no populations would be displaced. As a result, no impact would occur.

5.15.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for public services.

5.15.6 Applicant-Proposed Measures

5.15.6.1 Public Services Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM PUB-1: School Access.** Construction of the proposed LSPGC Telecommunication Line within 320 feet of St. Peter Martyr School would be coordinated with the school's administration and conducted during the summer months, at a time when school is out of session, in order to minimize disruptions to school access.

5.15.7 PG&E Construction Measures

5.15.7.1 Public Services PG&E Construction Measures

No Construction Measures are proposed for public services because PG&E would obtain and comply with encroachment permits; thus, no impacts would occur.

5.15.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to public services associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not impact emergency services and public service facilities nor induce population growth. As such, the potential modification would not result in an increased demand for public services or a disruption of emergency services, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is

required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.16 RECREATION

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓
c) Reduce or prevent access to a designated recreation facility or area?			✓	
d) Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?				✓
e) Damage recreational trails or facilities?				✓

This section describes the recreational resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.16.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV

Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.16.1.1 Recreational Setting

Parks and recreation facilities within 1 mile of the Proposed Project are identified in Table 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project, discussed by jurisdiction in the following subsections, and shown in Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project.

5.16.1.1.1 Delta Waterways

The proposed LSPGC 230 kV Submarine Segment would be located in the Delta waterways. As described in the DSC's Delta Plan, the navigable waterways in the Delta are publicly accessible and support recreational activities including fishing, powerboating, sailing, kayaking, and canoeing (DSC 2013). The California Division of Boating and Waterways' (DBW's) Sacramento-San Joaquin Delta Boating Needs Assessment projected that boating activities would total more than 8 million visitor days annually by 2020 (DBW 2002).

In 2017, the DPC's and California State University, Sacramento (Sacramento State) compiled the Recreational Boating Use of the Sacramento-San Joaquin Delta report, which presents findings on motorized boat use in the Delta waterways. The study estimated that approximately 20 percent of Delta waterway users participate in boating-related activities associated with cruising and relaxing, 19 percent with fishing, 11 percent with watersports, 10 percent with sightseeing and swimming, 8 percent with wildlife viewing, and 4 percent with jet skiing (DPC and Sacramento State 2017). Additionally, in the five counties surrounding the Delta waterways (i.e., Solano, Sacramento, San Joaquin, Contra Costa, and Yolo counties), approximately 102,000 vessels were registered in 2018 that could potentially be used for recreational activities in the Delta (DBW 2018). The Delta waterways are accessible using a boat launch. The closest boat launch to the Proposed Project is the City of Pittsburg Marina, approximately 0.7 mile east of PG&E's existing Pittsburg Substation.

Fishing, both onshore and offshore, is another recreational activity supported by the Delta. Riverview Park in Pittsburg has a dock that is used for fishing in the Delta. East of Riverview Park, the Pittsburg Marina offers boaters access to the upper Delta region and San Francisco Bay. The annual Pittsburg Fishing Derby is held at the Pittsburg Marina, and fishers compete both onshore and offshore to catch striped bass and sturgeon in the Delta (City of Pittsburg 2024). Another fishing derby, the Rio Vista Bass Derby and Festival, is held annually in the Delta. In 2018, the Rio Vista Bass Derby and Festival attracted approximately 20,000 attendees and 400 fishers (Rio Vista Bass Derby and Festival 2024).

5.16.1.1.2 Suisun Marsh

The Suisun Marsh covers approximately 85,000 acres of tidal marsh, managed wetlands, and waterways in southern Solano County (San Francisco Bay Conservation and Development Commission [BCDC] 1976). Portions of the proposed LSPGC Collinsville Substation, 230 kV Submarine Segment, and PG&E 12 kV Distribution Line would be within the Suisun Marsh boundaries. The Suisun Marsh lands are both publicly and privately owned. The public agencies

Table 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project

Park	Jurisdiction	Approximate Distance from Proposed Project (miles)	Nearest Proposed Project Component
Suisun Marsh	BCDC, Suisun Principal Agencies	0 (within)	LSPGC Collinsville Substation
		0 (within)	LSPGC 230 kV Submarine Segment
		0 (within)	PG&E 12 kV Distribution Line
Lower Sherman Island Wildlife Area	CDFW	0.4	LSPGC 230 kV Submarine Segment
Browns Island	East Bay Regional Park District	0.7	LSPGC 230 kV Submarine Segment
Delta Waterways	Multiple agencies[1]	0 (within)	LSPGC 230 kV Submarine Segment
Americana Park	Pittsburg	0.9	LSPGC 230 kV Underground Segment
Central Harbor Park	Pittsburg	0.4	LSPGC Telecommunications Line
City Park	Pittsburg	0.6	LSPGC Telecommunications Line
Heritage Park Plaza	Pittsburg	0.2	LSPGC Telecommunications Line
Marina Walk Park	Pittsburg	<0.1	LSPGC Telecommunications Line
Mariner Park	Pittsburg	< 0.1	LSPGC Telecommunications Line
Riverview Park	Pittsburg	0.3	LSPGC Telecommunications Line
Santa Fe Linear Park	Pittsburg	0.7	LSPGC Telecommunications Line
Village Park at New York Landing	Pittsburg	0.2	LSPGC Telecommunications Line
8th Street Greenbelt	Pittsburg	0.2	LSPGC Telecommunications Line

Sources: City of Pittsburg 2023, Suisun Principal Agencies 2014, DSC 2013, CDFW 2023, Contra Costa Special Districts Association 2023, East Bay Regional Park District 2023

[1] The agencies include the USFWS, U.S. Army Corps of Engineers (USACE), NOAA NMFS, U.S. Environmental Protection Agency, DSC, CDFW, Delta Protection Commission (DPC), Sacramento-San Joaquin Delta Conservancy, BCDC, State Water Resources Control Board, Central Valley Flood Protection Board, Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg.

that oversee the Suisun Marsh are known as the Suisun Principal Agencies and they include the United States (U.S.) Fish and Wildlife Service (USFWS), U.S. Department of the Interior, Bureau of Reclamation (BOR), California Department of Fish and Wildlife (CDFW), California Department of Water Resources (CDWR), National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), Suisun Resource Conservation District (SRCD), and the Delta Stewardship Council (DSC). The Suisun Marsh's development and use is guided by the BCDC's Suisun Marsh Protection Plan; the CDFW Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP); and the DSC's Delta Plan to ensure the wetlands are protected and preserved. As described in the Suisun Marsh Protection Plan, the primary recreational activities in the marsh include waterfowl hunting, fishing, and upland game hunting (BCDC 1976). The Suisun Marsh can be accessed by boat or car.

5.16.1.1.3 Lower Sherman Island Wildlife Area

The CDFW oversees the Lower Sherman Island Wildlife Area (LSIWA), which is approximately 3,100 acres of riparian marshland located in the Delta in Sacramento County (CDFW 2023). The proposed LSPGC 230 kV Submarine Segment would be located approximately 0.4 mile west of the LSIWA, as depicted in Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project. Recreational activities in the LSIWA include wildlife viewing and hunting. This recreational area is only accessible by boat.

5.16.1.1.4 Browns Island

The East Bay Regional Park District manages the 595-acre Browns Island, which is located off Pittsburg's northern coast in the Delta. The proposed LSPGC 230 kV Submarine Segment would be approximately 0.7 mile west of Browns Island. Recreational activities available on Browns Island include fishing, as well as wildlife and plant viewing; however, access to the island is restricted and must be arranged with the East Bay Regional Park District. No recreational facilities exist on the island, and it is only accessible by boat (East Bay Regional Park District 2023).

5.16.1.1.5 City of Pittsburg Parks

Ten City of Pittsburg-managed parks are located within 1 mile of the Proposed Project, as shown in Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project. Table 5.16-2: City of Pittsburg Parks within 1 Mile of the Proposed Project provides information on each park's size and the amenities provided.

5.16.2 Regulatory Setting

Federal, state, and local regulations were reviewed for relevancy to the Proposed Project.

5.16.2.1 Regulatory Setting

5.16.2.1.1 Federal

No federal policies or regulations related to recreation are relevant to the Proposed Project.

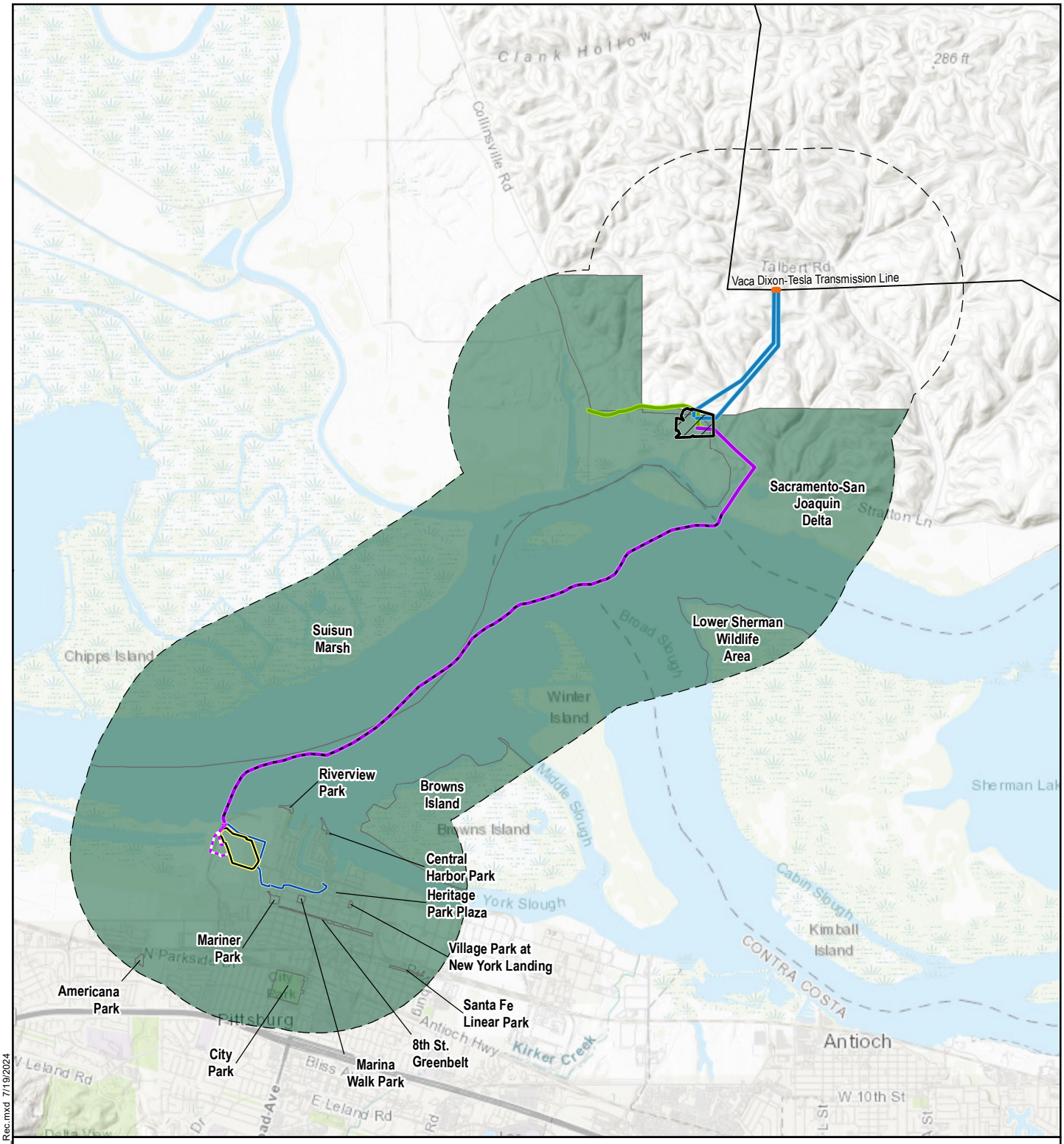

Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- Park Recreational Area
- 1-Mile Buffer

1:63,926

0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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Table 5.16-2: City of Pittsburg Parks within 1 Mile of the Proposed Project

Park Name	Approximate Size (acres)	Amenities Provided
Americana Park	2.5	Barbecue grills, picnic tables, play equipment
Central Harbor Park	1.5	Boat launch, restrooms, open lawn, benches
City Park	28.0	Barbecue grills, restrooms, picnic tables, play equipment, exercise equipment, bocce ball courts, horseshoes, baseball/softball fields, soccer fields
Heritage Park Plaza	0.1	Artistic site with waterfall, murals, picnic tables, round bollards
Marine Walk Park	1.7	Picnic tables, play equipment
Mariner Park	3.6	Barbecue grills, restrooms, picnic tables, baseball fields, open play areas
Riverview Park	4.0	Restrooms, play equipment
Santa Fe Linear Park	2.6	Barbecue grills, picnic tables
Village Park at New York Landing	0.8	Picnic tables, open play areas
8th Street Greenbelt	4.0	Barbecue grills, picnic tables, play equipment

Source: City of Pittsburg 2023

5.16.2.1.2 State

McAteer-Petris Act of 1965

The McAteer-Petris Act of 1965 established the BCDC to "exercise its authority to issue or deny permit applications for placing fill, extracting material, or changing use of any land, water or structure within the Commission's jurisdiction in conformity with the provisions and policies of both the McAteer-Petris Act and the [San Francisco] Bay Plan" (BCDC 2023a). The San Francisco Bay Plan outlines policies intended to protect and restore tidal marshes and wetlands, improve water quality, and conserve the fish and wildlife of San Francisco Bay. The San Francisco Bay Plan's Recreation section includes the following policy applicable to the Proposed Project:

- Policy 2. Waterfront land needed for parks and beaches to meet future needs should be reserved now, because delay may mean that needed shoreline land could otherwise be preempted for other uses. However, recreational facilities need not be built all at once; their development can proceed over time. Interim use of a waterfront park priority use area prior to its development as a park should be permitted, unless the use would prevent the site from being converted to park use or would involve investment in improvements that would preclude the future use of the site as a park.

Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974

The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 directed the BCDC and the California Department of Fish and Game (now the CDFW) to develop the Suisun Marsh

Protection Plan. The Suisun Marsh Preservation Act of 1977 declared that the Suisun Marsh Protection Plan contains a series of recommendations which require implementation by the legislature (Public Resources Code Section 29004[b]). The objectives of the Suisun Marsh Protection Plan are to preserve and enhance the quality and diversity of the Suisun Marsh aquatic and wildlife habitats and to assure retention of upland area adjacent to the Marsh in uses compatible with its protection (BCDC 1976). Additionally, the plan outlines policies that promote the preservation of waterfowl hunting, fishing, and other recreational opportunities in the Suisun Marsh; however, there are no recreational policies applicable to the Proposed Project.

Suisun Marsh Habitat Management, Preservation, and Restoration Plan

The SMP was developed by the Suisun Principal Agencies, which include the USFWS, BOR, CDFW, CDWR, NMFS, SRCD, and the DSC. The SMP serves as a 30-year management plan guiding the protection and preservation of the Suisun Marsh tidal wetlands, while also promoting the maintenance and development of recreational opportunities (Suisun Principal Agencies 2014). One of the primary SMP objectives is to:

- Maintain waterfowl hunting heritage and expand opportunities for hunting, fishing, bird watching, and other nature-oriented recreational activities.

Sacramento-San Joaquin Delta Reform Act of 2009

The Sacramento-San Joaquin Delta Reform Act of 2009 created the DSC, which developed and enforces the Delta Plan. The Delta Plan aims to improve statewide water supply reliability and protect and restore a vibrant and healthy Delta ecosystem in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta (DSC 2013). The Delta Plan contains the following recreational policies relevant to the Proposed Project:

- DP R11 Provide New and Protect Existing Recreation Opportunities: Water management and ecosystem restoration agencies should provide recreation opportunities, including visitor-serving business opportunities, at new facilities and habitat areas whenever feasible; and existing recreation facilities should be protected, using California State Parks' Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh and DPC's Economic Sustainability Plan for the Sacramento-San Joaquin Delta as guides.

- DP R12 Encourage Partnerships to Support Recreation and Tourism: The DPC and Delta Conservancy should encourage partnerships between other State and local agencies, and local landowners and business people to expand recreation, including boating, promote tourism, and minimize adverse impacts to nonrecreational landowners.

- DP R13 Expand State Recreation Areas: California State Parks should add or improve recreation facilities in the Delta in cooperation with other agencies.

Senate Bill 1065

The CDFW-administered LSIWA was originally designated as a wildlife area and established as a public hunting and fishing area in 1976 by the Fish and Game Commission. In 1986, the Delta Flood Protection Act went into effect to provide flood control improvement projects for islands

in the Delta, including the LSIWA. In 1991, Senate Bill 1065 was issued to ensure flood control improvement projects would not result in the loss of habitat (CDFW 2023). In 2007, the CDFW adopted the LSIWA Land Management Plan (LMP), which is a guiding document that ensures public uses and O&M activities on Lower Sherman Island are compatible with the conservation of species and habitats. While the Proposed Project is in the vicinity of the LSIWA, no portion of the Proposed Project crosses lands or waters within the boundaries of the LSIWA. A recreational goal outlined in the LMP is to:

- Provide long-term opportunities for hunting and increase opportunities for wildlife-dependent recreation.

5.16.2.1.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, and programs for informational purposes.

East Bay Regional Park District

The East Bay Regional Park District's 2013 Master Plan (East Bay Regional Park District 2013) contains policies and programs that guide the development of recreational use areas while conserving natural resources in Alameda and Contra Costa counties. The Master Plan identifies Browns Island as a Regional Preserve with outstanding natural or cultural features that are protected for their intrinsic value as well as for the enjoyment and education of the public.

Solano County

The Parks and Recreation Element of the Solano County General Plan (Solano County 2008) provides an overview of the existing recreational facilities and an analysis of recreational needs throughout the county. The Parks and Recreation Element outlines goals and objectives, plan proposals and implementation recommendations, and implementation alternatives that enable Solano County to address recreational needs. The following policy from the Solano County General Plan Parks and Recreation Element is relevant to the Proposed Project:

- Policy 3-C. The County shall work to protect identified recreational sites and natural resource areas.

Sacramento County

The Public Facilities Element of the Sacramento County General Plan (County of Sacramento 2019) details the county's existing park planning methodology and outlines objectives, policies, and implementation measures to effectively maintain existing facilities and develop new recreational facilities to meet the needs of communities. The Public Facilities Element of the Sacramento County General Plan does not contain any policies relevant to the Proposed Project.

Contra Costa County

The Open Space Element of the Contra Costa County General Plan (County of Contra Costa 2005) details the existing recreational parks, trails, and facilities available to the public. This section describes the goals, policies, and implementation measures designed to protect and enhance recreational opportunities throughout the county. The following policies from the Contra Costa County General Plan Open Space Element are relevant to the Proposed Project:

- Policy 9-35. Regional-scale public access to scenic areas on the waterfront shall be protected and developed, and water-related recreation, such as fishing, boating, and picnicking, shall be provided.

- Policy 9-36. As a unique resource of statewide importance, the Delta shall be developed for recreation use in accordance with the State environmental goals and policies. The recreational value of the Delta shall be protected and enhanced.

City of Pittsburg

The Open Space, Youth and Recreation Element of the City of Pittsburg General Plan (City of Pittsburg 2001) discusses the city's existing and proposed recreational facilities and outlines goals and policies that ensure ample recreational facilities—including parks, trails, open space, and waterfront access—are available to the community. The Open Space, Youth and Recreation Element of the City of Pittsburg General Plan does not contain any policies relevant to the Proposed Project.

5.16.3 Impact Questions

5.16.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For agriculture and forestry resources, the CEQA Environmental Checklist asks if the Proposed Project would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

5.16.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA Impact Questions are required for recreation. Would the Proposed Project:

- Reduce or prevent access to a designated recreation facility or area?
- Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?
- Damage recreational trails or facilities?

5.16.4 Impact Analysis

5.16.4.1 Recreation Impact Analysis

5.16.4.1.1 Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The use of parks and recreational facilities is closely tied to population; as population increases, the use of existing parks and recreational facilities can be expected to increase proportionally. Similarly, the loss of existing parks and recreational facilities would result in a concentration of use at remaining parks and facilities.

As presented in Section 5.14 Population and Housing, the LSPGC and PG&E Proposed Project components would not directly or indirectly induce substantial unplanned population growth. Construction of the proposed LSPGC 230 kV Underground Segment, modifications to PG&E's existing Pittsburg Substation, and the proposed LSPGC Telecommunications Line would occur in the proximity of City of Pittsburg parks, as shown in Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project. In addition, these LSPGC and PG&E Proposed Project components would be within 1 mile of the City of Pittsburg Marina, which provides access to the Delta, LSIWA, and Browns Island. Construction of the proposed LSPGC Collinsville Substation, PG&E 12 kV Distribution Line, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection would occur within the proximity of the Suisun Marsh. Construction of the Proposed Project is anticipated to occur for approximately 22 to 24 months, and during peak times, LSPGC expects to utilize up to 160 workers per day. During construction of the Proposed Project, regional and local parks may be used by workers during their lunch or break periods, or during non-working hours for any workers who may temporarily relocate to the area. Although construction of the LSPGC and PG&E Proposed Project components would occur in the vicinity of regional and local parks, the duration of construction activities and number of construction workers would not result in a significant increase in the use. Therefore, the limited increase in the use of parks and recreational facilities by workers during construction and the lack of substantial population growth resulting from the LSPGC and PG&E Proposed

Project components would not result in either a significant increase in the use of existing parks or recreational facilities or the occurrence or acceleration of substantial physical deterioration to existing parks and recreational facilities.

The LSPGC and PG&E Proposed Project components would be operated remotely. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. These O&M activities would not impact any recreational areas. Therefore, no impact would occur as a result of construction and O&M of the Proposed Project.

5.16.4.1.2 Would the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The Proposed Project does not include any recreational facilities. The LSPGC and PG&E Proposed Project components would be remotely monitored and would not result in a population increase; therefore, it would not require the construction or expansion of any recreational facilities. The LSPGC and PG&E Proposed Project components would not have an adverse physical effect on the environment from the construction of new recreational facilities or the expansion of existing recreational facilities. Therefore, no impact would occur.

5.16.4.1.3 Would the project reduce or prevent access to a designated recreation facility or area?

Construction

LSPGC Components

Less-than-Significant Impact. Construction of the proposed LSPGC Collinsville Substation, 230 kV Overhead Segment, and 230 kV Underground Segment would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities.

The proposed LSPGC 230 kV Submarine Segment would be installed from a barge moving along the Proposed Project route through the Delta and would take approximately 6 months to complete. The barge would not reduce or prevent access to the Delta as the barge would be similar to other vessels moving through the waterway. The final barge size would depend on equipment availability and would be determined at the time of construction; however, similar projects have utilized a barge measuring approximately 260 feet by 72 feet. Therefore, installation of the proposed LSPGC 230 kV Submarine Segment would not restrict overall water-oriented recreational use in the Delta.

Construction of the proposed in-water transition structure, depicted on Attachment 3-A: Detailed Route Map, would temporarily reduce access in the Delta waterways to allow for construction to occur safely. As discussed in Section 5.16.1.1.1 Delta Waterways, the navigable waterways in the Delta are available for public access and support fishing, powerboating, sailing, kayaking, jet skiing, and canoeing. The proposed in-water structure would be located off Solano County's southern shoreline in the Sacramento River. Although construction of the proposed in-water structure would require access restrictions, construction would be temporary and localized. Construction of the proposed in-water structure would occur in two separate phases: installation of the in-water structure foundation followed by installation of the in-water structure. Installation of the proposed in-water structure foundation would take approximately 6 months to complete, and installation of the proposed in-water structure would take approximately 1 month to complete. Installation of the proposed in-water structure foundation and structure would occur from a barge and require a temporary work area of approximately 2 acres. The temporary work area would be inaccessible to the public. Therefore, installation of the proposed in-water structure foundation and structure would temporarily reduce access to approximately 2 acres of the Delta for a total duration of approximately 7 months. Activities such as fishing, powerboating, sailing, kayaking, jet skiing, and canoeing would be excluded within the approximately 2-acre area during construction. Although construction of the in-water foundation and structure would temporarily prevent access to approximately 2 acres of the Delta, the accessible in-water recreational area temporary loss is insignificant when compared to the extent of the Delta. Therefore, construction of the proposed in-water foundation and structure would have a less-than-significant impact on access to the Delta.

To reduce the potential impacts associated with access restrictions to the Delta, LSPGC would implement applicant-proposed measure (APM) REC-1. APM REC-1 would require LSPGC to coordinate with the U.S. Coast Guard's (USCG's) San Francisco Waterways Branch, the San Francisco Vessel Traffic Center (VTC), and the City of Pittsburg's harbor master prior to any temporary access restrictions to ensure that Delta users are aware of upcoming restrictions. In addition, APM REC-1 would require construction crews to submit a Local Notice to Mariners 15 days prior to the start of in-water construction activities. Therefore, APM REC-1 would ensure Delta users know which areas of the Delta are restricted during in-water construction activities. With the implementation of APM REC-1, impacts caused by the reduction of access to recreational areas in the Delta would be less than significant.

As shown in Figure 5.16-1: Parks and Recreational Facilities within 1 Mile of the Proposed Project, construction of the proposed LSPGC Telecommunications Line would occur in close proximity to City of Pittsburg parks. Temporary impacts to sidewalks may occur during construction of the proposed LSPGC Telecommunications Line. In addition, traffic control procedures may be implemented intermittently along Marina Boulevard, Herb White Way, Halsey Way, Halsey Court, and adjacent roadways within the City of Pittsburg during construction and times of deliveries. Flaggers or other traffic control measures would be utilized to guide traffic around active work areas in a safe manner. Traffic control procedures and impacts to sidewalks would be temporary, and detours are not anticipated to be necessary. As a result, construction of the proposed LSPGC Telecommunications Line would not significantly reduce access to City of Pittsburg parks, and impacts would be less than significant.

PG&E Components

No Impact. The PG&E Proposed Project components would be in an unincorporated area of Solano County where the primary land uses are agriculture, utility operations, and wind farms. Although the PG&E Proposed Project components would be within 1 mile of the Suisun Marsh and the Delta, construction would not require the closure of any roads or prevent access to boat launches used to enter those recreational areas. No other designated recreational areas are located within 1 mile of the PG&E 500 kV Interconnection. Therefore, construction of the PG&E Proposed Project components would not reduce or prevent access to a designated recreational facility or area, and no impact would occur.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. The LSPGC Proposed Project components would be remotely operated by LSPGC's control center in Austin, Texas. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. O&M activities associated with the LSPGC Proposed Project components would not require the closure of any roads or prevent access to boat launches used to enter regional or local recreational areas and facilities. Additionally, operation of the proposed LSPGC 230 kV Submarine Segment would not reduce access in the Delta as the cable would be buried. Maintenance of the proposed LSPGC 230 kV Submarine Segment is not anticipated. Therefore, O&M of the LSPGC Proposed Project components would have no impact on access related to recreational areas or facilities.

The addition of a permanent in-water structure associated with the operation of the LSPGC Proposed Project components would potentially reduce access in the Delta by acting as a permanent obstacle. The in-water transition structure would be located south of Solano County's northern shoreline in the Sacramento River, as shown in Attachment 3-A: Detailed Route Map. The in-water transition structure's footprint would be approximately 5,200 square feet; therefore, the in-water transition structure would prevent access to approximately 5,200 square feet of recreational area in the Delta. Although the in-water structure would prevent access, the accessible in-water recreational area lost is insignificant when compared to the extent of the Delta. Therefore, the reduced access to in-water recreational area within the Delta caused by the in-water structures would have a less-than-significant impact on access to recreational areas in the Delta.

PG&E Components

No Impact. O&M activities associated with the PG&E Proposed Project components would not require the closure of any roads or prevent access to boat launches used to enter recreational areas or facilities. In addition, PG&E's maintenance activities would continue as they currently do in the area and would not change. Therefore, O&M activities relating to the PG&E Proposed Project components would have no impact on access to recreational areas or facilities.

5.16.4.1.4 Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. The LSPGC and PG&E Proposed Project components would be located adjacent to lands and waters managed by federal, state, and local agencies that are used for recreation. As presented in Section 5.1 Aesthetics; Section 5.4 Biological Resources; Section 5.5 Cultural Resources; and Section 5.7 Geology, Soils, and Paleontological Resources, the LSPGC and PG&E Proposed Project components would not substantially change the character of any recreational area as no significant and unavoidable impacts to these resource areas have been identified. Given that the construction and O&M activities associated with the LSPGC and PG&E Proposed Project components would not substantially change the character of nearby recreational areas, no impacts would occur during construction or O&M activities.

5.16.4.1.5 Would the project damage recreational trails or facilities?

Construction, Operations and Maintenance

LSPGC and PG&E Components

No Impact. Construction of the LSPGC and PG&E Proposed Project components would not damage any designated recreational trails or facilities because these components would not cross any recreational trails or cause damage to existing facilities. The closest recreational facility to the Proposed Project would be Riverview Park in Pittsburg, which is located approximately 0.33 mile from the proposed LSPGC 230 kV Underground Segment. Therefore, construction of the LSPGC and PG&E Proposed Project components would not cause damage to recreational trails or facilities, and no impact would occur. Additionally, O&M activities would occur within new rights-of-way and within fenced substations. As a result, O&M work would not cause damage to recreational trails or facilities, and no impact would occur.

5.16.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures suggested for recreation.

5.16.6 Applicant-Proposed Measures

5.16.6.1 Recreation Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM REC-1: Access Restrictions in the Delta.** Construction crews would coordinate with the USCG's San Francisco Waterways Branch, the San Francisco VTC, and the City of Pittsburg's harbor master prior to any temporary access restrictions to ensure that Delta users are aware of upcoming restrictions. In addition, a Local Notice to Mariners would be submitted to the USCG's District 11 at least 15 days prior to the start of in-water construction.

5.16.7 PG&E Construction Measures

5.16.7.1 Recreation PG&E Construction Measures

No Construction Measures are proposed for recreation because no impacts would occur.

5.16.8 Potential Future Substation Expansion

As described in Section 3.3.6, Future Expansions and Equipment Lifespan, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to recreation associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the proposed LSPGC Collinsville Substation buildout because the modification area would not affect access or use of any planned or existing designated recreation facilities nor would it substantially change the recreational characteristics of the existing area. As such, the potential modification would not result in impacts to designated recreational facilities, trails, or areas, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.17 TRANSPORTATION

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			✓	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			✓	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			✓	
d) Result in inadequate emergency access?			✓	
e) Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?			✓	
f) Interfere with walking or bicycling accessibility?			✓	
g) Substantially delay public transit?			✓	

This section describes the transportation system in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.17.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the

City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Cable, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.17.1.1 Existing Roadways and Circulation

5.17.1.1.1 Regional Transportation Circulation

Solano County's circulation system consists of primary roadways carrying vehicular traffic. These roadways provide connections between agricultural lands and major state transportation facilities. Solano County's region encompasses a broad and diverse area that is largely unincorporated.

Sacramento County's circulation system consists of a grid-like system within its urban and unincorporated areas, allowing for flexibility in future planning. The county aims to invest in multiple modes of travel so that all county residents have access to multiple viable and efficient transportation alternatives. Sacramento County provides circulation through regional rail systems, streetcars, bus transit, freeways, interchanges, thoroughfares, arterials, rural collectors, and local streets.

Contra Costa County's circulation system is greatly influenced by its location on the eastern side of the San Francisco Bay metropolitan region. Contra Costa County is heavily linked to the metropolitan region through bridges, freeways, and train links. According to the Contra Costa County General Plan, it is estimated that 42 percent of work trips originating in the county are destined for another county in the San Francisco Bay Area. The existing transportation system is composed of a network of federal, state, and county roads, and regional transit systems.

Figure 5.17-1: Regional Transportation Circulation illustrates the transportation-related infrastructure in the Solano, Sacramento, and Contra Costa counties, as discussed in the following sections.

5.17.1.1.2 Local Transportation Circulation and Existing Roadways

The majority of the Proposed Project is located in a rural area in the southwestern corner of the Collinsville-Montezuma Hills Wind Resource Area in southern Solano County, approximately 0.5 mile northeast of the community of Collinsville. The local circulation system near the Proposed Project area is primarily composed of maintained, one- and two-lane roadways with no posted speed limit. Individual vehicles serve as the primary mode of transportation within the Proposed Project area. Local roads that serve the community of Collinsville and provide access to the Proposed Project are limited. Within the vicinity of the Proposed Project area, Stratton Lane is an east-west public road with no posted speed limit that is located immediately north of the Proposed Project area. Latin Lane is another east-west public road located south of the Proposed Project area with no posted speed limit. Local roadways that would provide access during Proposed Project construction are summarized in Table 5.17-1: Public Access Roadways. Figure 5.17-2: Local Transportation Circulation provides an overview of the local transportation-related infrastructure in the Proposed Project vicinity.

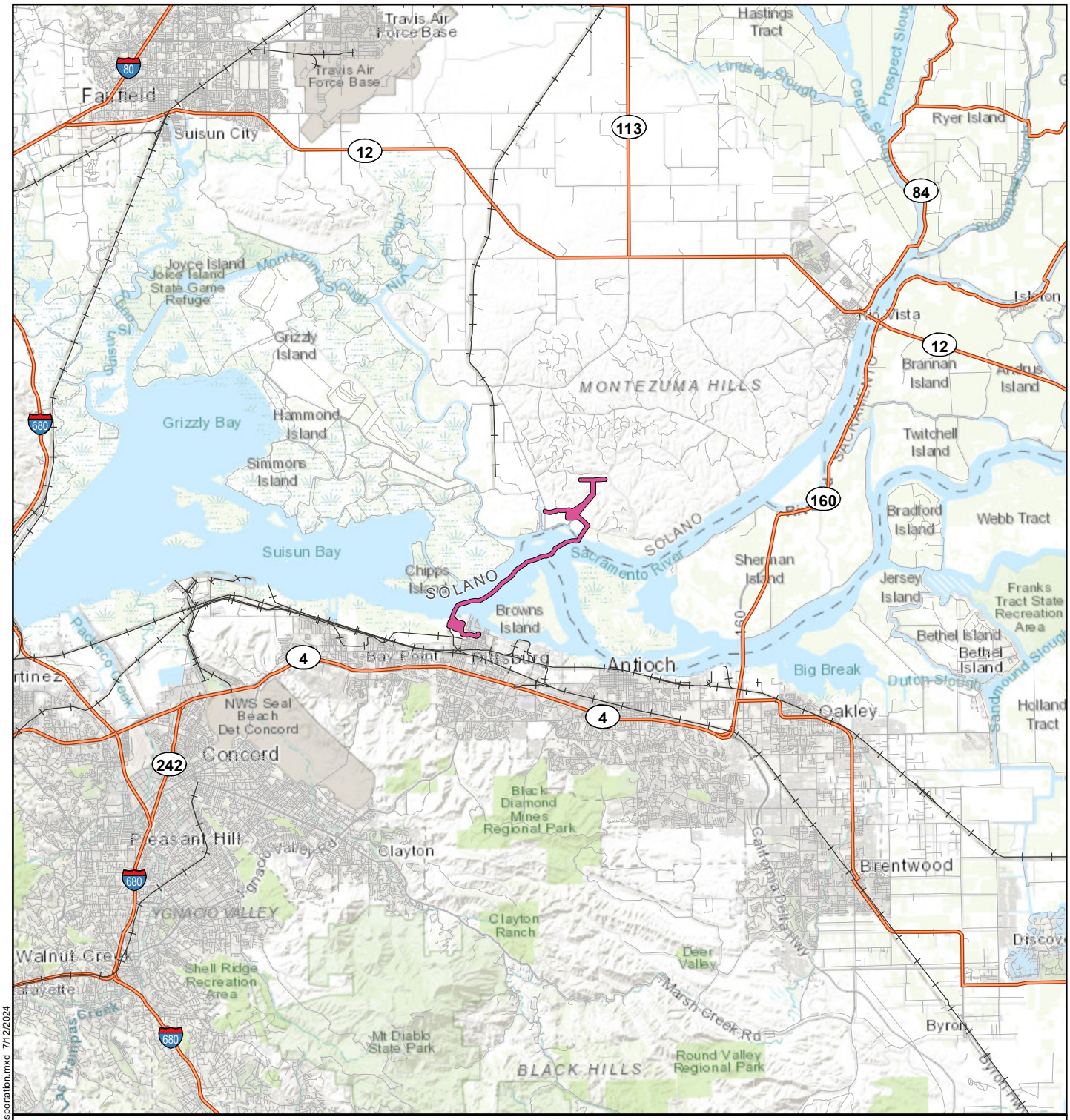

Figure 5.17-1: Regional Transportation Circulation **Collinsville 500/230 Kilovolt Substation Project**

Road

Railroad

Highway

Proposed Project Site

1:250,000

0 15,000 30,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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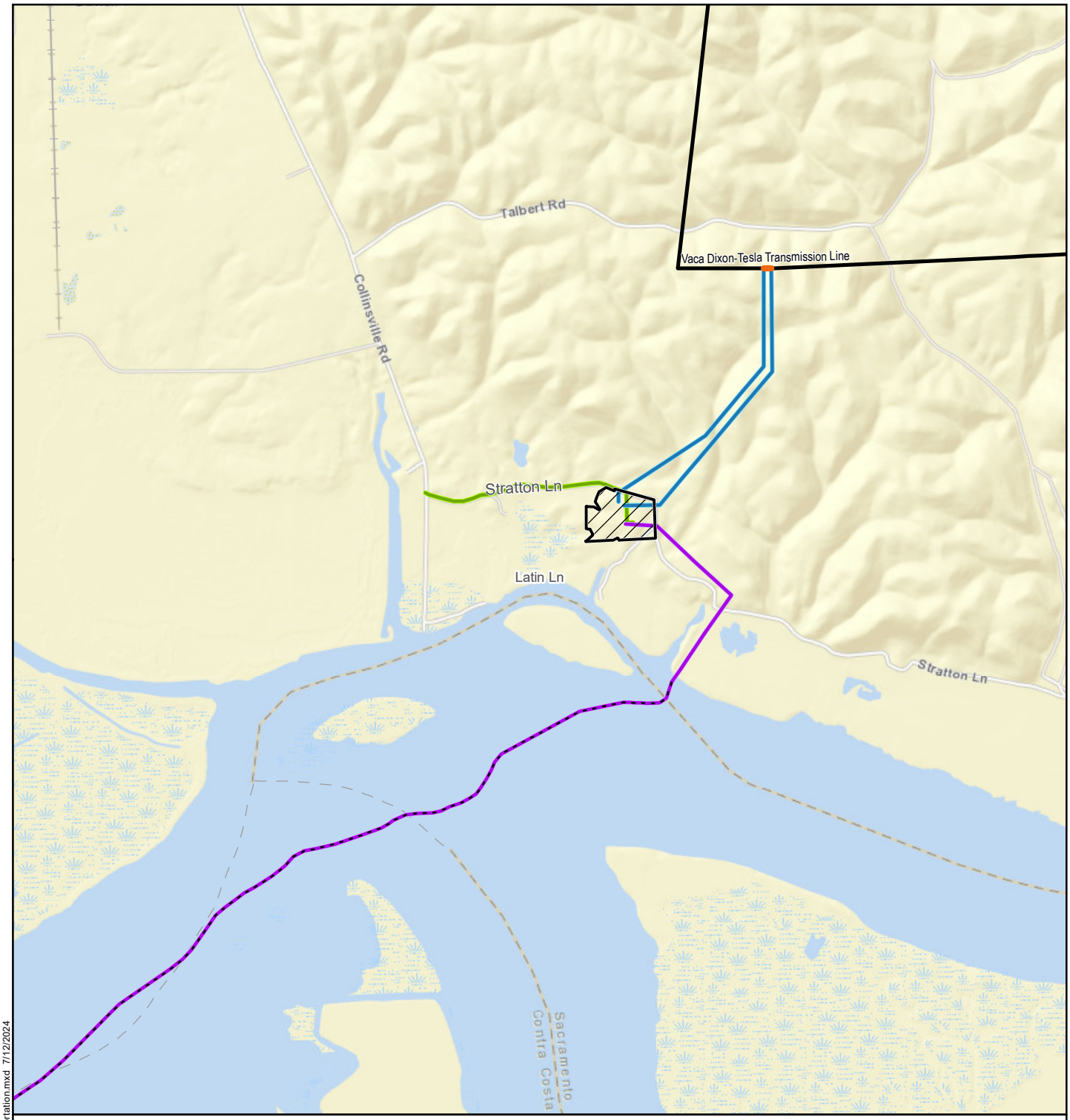

Figure 5.17-2: Local Transportation Circulation (Map 1 of 2) **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Railroad
- Proposed LSPGC Collinsville Substation Site

1:35,000

0 2,000 4,000 Feet

LS POWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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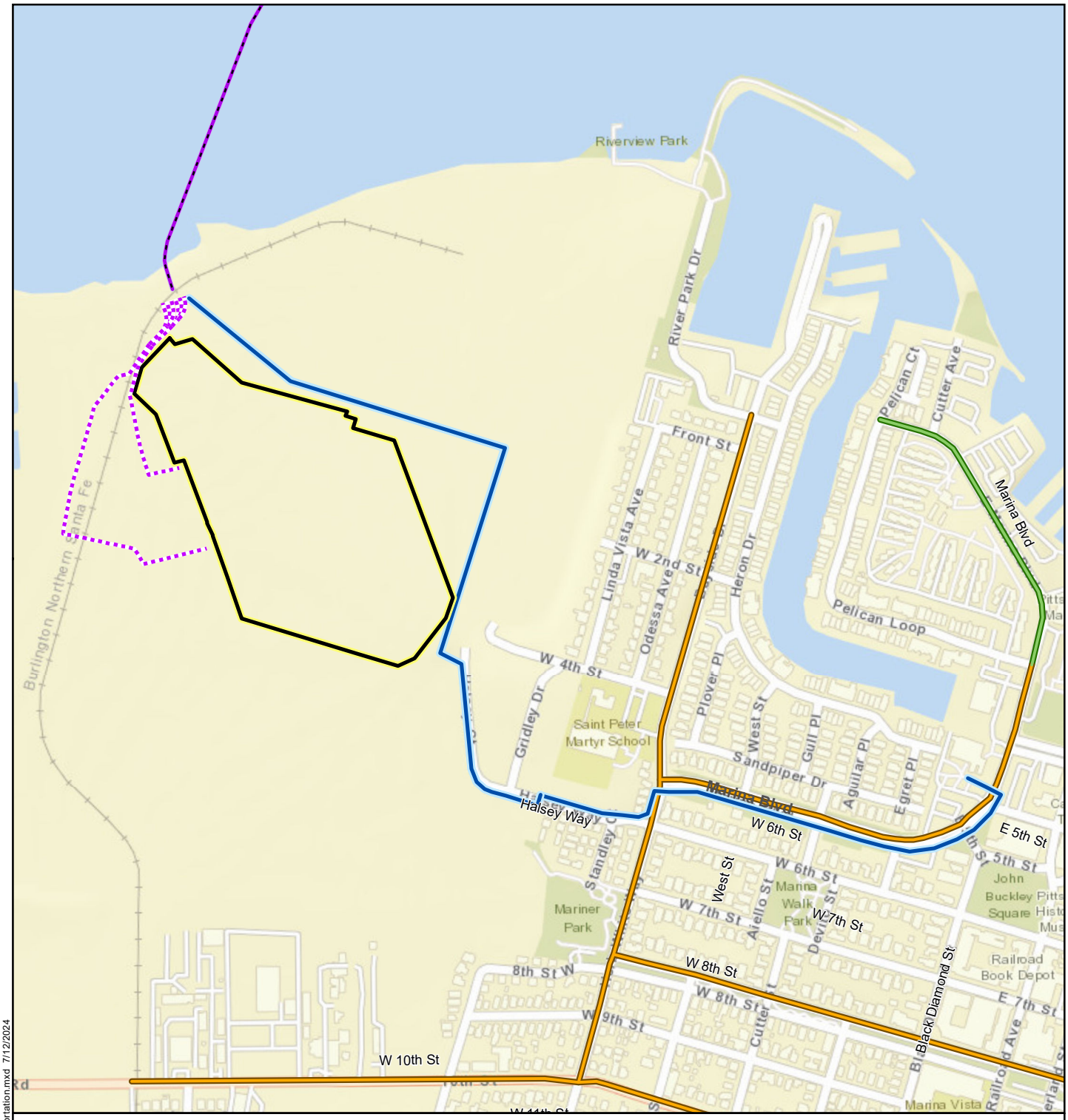

Figure 5.17-2: Local Transportation Circulation (Map 2 of 2) **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Railroad
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation

Existing Bicycle Facilities

- Shared-Use Paths (Class I)
- Standard Bike Lanes (Class II)

Note: All named roads on this figure contain sidewalks or pedestrian access.

1:8,000

0 500 1,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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Table 5.17-1: Public Access Roadways

Roadway	Classification	Number of Lanes	Jurisdiction	Estimated Traffic Volumes
State Route (SR-) 12 at SR-113	Major Arterial	2	California Department of Transportation (Caltrans)	See Table 5.17-2: Existing Travel Volumes on State Route 12
Shiloh Road	Collector	2	Solano County	Information not available (INA)
Talbert Lane	Local	2	Solano County	INA
Stratton Lane	Local	2	Solano County	INA
Montezuma Hills Road	Collector	2	Solano County	INA
Collinsville Road	Collector	2	Solano County	INA
Birds Landing Road	Collector	2	Solano County	INA
Olsen Road	Local	2	Solano County	INA
Willow Pass Road	Major Arterial	2	City of Pittsburg	15,000-55,000 vehicles per day (VPD)
Railroad Avenue	Major Arterial	4 to 6	City of Pittsburg	15,000-55,000 VPD
Marina Boulevard	Collector	4	City of Pittsburg	15,000 VPD or less
Herb White Way	Collector	2	City of Pittsburg	15,000 VPD or less
Halsey Way	Local	2	City of Pittsburg	5,000 VPA or less
Halsey Court	Local	2	City of Pittsburg	5,000 VPA or less

Sources: Google Earth 2023; Contra Costa County 2005; Solano County 2008; City of Pittsburg 2020a

Interstate (I-) 80 and SR-12 are the major regional transportation corridors in the Proposed Project region. I-80 is a major north-south regional transportation interstate located approximately 16 miles northwest of the Proposed Project. The highway varies in lanes depending on the area and has a posted speed limit of 65 miles per hour. I-80 intersects with SR--12 near the City of Fairfield, and SR-12 would serve as the regional route to the Proposed Project area. Construction and operational vehicles, as well as equipment, would utilize either Birds Landing Road and Collinsville Road from the City of Rio Vista or travel south on Shiloh Road and Collinsville Road from the City of Fairfield to access the Proposed Project. Railroad Avenue, classified as a Major Arterial roadway in the City of Pittsburg, may be used to provide access to the proposed LSPGC Telecommunications Line east of PG&E's existing Pittsburg Substation.

Traffic volumes associated with portions of SR-12 in the Proposed Project area are summarized in Table 5.17-2: Existing Travel Volumes on State Route 12.

Table 5.17-2: Existing Travel Volumes on State Route 12

Intersection	Average Daily Trips	Peak Hour Trips
SR-12 west of SR-113	16,000	1,800
SR-12 in Rio Vista	20,500	3,200
SR-12 at SR-113	4,500	500

Source: Caltrans 2021b

Several unnamed dirt access roads are also located in the Proposed Project area. As previously discussed, either Birds Landing Road and Collinsville Road from the City of Rio Vista or Collinsville Road via SR-12 would serve as the major primary access routes for the Proposed Project.

To access the proposed LSPGC Collinsville Substation site, LSPGC 230 kV Overhead Transmission Line, and PG&E 12 kV Distribution Line, construction crews would use SR-12 and then either travel along Birds Landing Road and Collinsville Road from the City of Rio Vista or travel south on Shiloh Road and Collinsville Road from the City of Fairfield. Crews would then use Stratton Lane to access these facilities from Collinsville Road. The northern portions of the proposed PG&E 500 kV Interconnection would be accessed using Talbert Lane and travelling east until reaching PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. Proposed Project components located in the vicinity of PG&E's existing Pittsburg Substation would likely be accessed using Willow Pass Road, which intersects with SR-4 to the east of the substation. SR-4 intersects I-680 near the community of Pacheco. These roads would also be used as haul routes.

5.17.1.2 Transit and Rail Services

The nearest railway to the Proposed Project is the Capitol Corridor Amtrak line, which runs from the City of Sacramento to the City of Davis and then to Suisun City/Fairfield. The line is approximately 15.5 miles northwest of the Proposed Project near I-80. The nearest track to the Proposed Project area crosses SR-12 just east of, and parallel to, Shiloh Road. The track continues south, crossing Birds Landing Road just west of Collinsville Road, and terminates west of Collinsville Road between where Talbert Lane and Stratton Lane join Collinsville Road to the east. No transit systems service the Proposed Project area.

5.17.1.3 Sacramento River Transit

Various marinas for public use and private boating tours are located throughout the Delta. As described in Section 5.16 Recreation, The California Division of Boating and Waterways' (DBW's) Sacramento-San Joaquin Delta Boating Needs Assessment projected that boating activities would total more than 8 million visitor days annually by 2020 (DBW 2002); however, a review of the Contra Costa Transportation Authority's (CCTA's) Countywide Transportation Plan and the Solano Transportation Authority's (STA's) Solano County Comprehensive Transportation Plan revealed no policies or ordinances regarding boat travel on the Sacramento River. The privately owned Pittsburg Yacht Club and the municipal Pittsburg Marina are located approximately 0.5 mile and 0.7 mile southeast of the southern terminus of the proposed LSPGC 230 kV Submarine Segment, respectively.

5.17.1.4 Bicycle Facilities

The STA's Solano Countywide Active Transportation Plan (STA 2020) proposes a 20-mile Class II bicycle lane or Class III bicycle route on SR-12 from Rio Vista to Walters Road. Class III facilities are planned for SR-113 from Porter to the SR-12 intersection approximately 7 miles north of the proposed LSPGC Collinsville Substation site. No existing bike paths are located in the Proposed Project area in Solano County. According to the Contra Costa County Active Transportation Plan (Contra Costa County Public Works Department 2023), Class I and Class III bikeways are planned to be constructed approximately 1.5 miles west of PG&E's existing Pittsburg Substation.

The City of Pittsburg Moves Active Transportation Plan identifies standard bikes lanes (Class II) along Marina Boulevard and Herb White Way in the area where the proposed LSPGC Telecommunications Line would be constructed, as shown in Figure 5.17-2: Local Transportation Circulation. In addition, Class II facilities occur on portions of 10th Street between the Willow Pass Road and West 10th Street intersection and the East 10th Street and Railroad Avenue intersection. Class II facilities and bike routes (Class III) occur on portions of Railroad Avenue between the Civic Avenue and Railroad Avenue intersection and the Railroad Avenue and East 10 Street intersection (City of Pittsburg 2020b).

5.17.1.5 Pedestrian Facilities

No designated pedestrian facilities are located in the vicinity of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Transmission Line, PG&E 500 kV Interconnection, or PG&E 12 kV Distribution Line. (STA 2020; Solano County 2008). A network of residential sidewalks exists adjacent to the proposed LSPGC Telecommunications Line in the City of Pittsburg, along Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court.

5.17.1.6 Bus Transit

No public transit stops or stations are located in the vicinity of the Proposed Project in Solano County and Sacramento County. The closest bus stop to the Proposed Project facilities in Solano County is located in the City of Rio Vista, which is approximately 9 miles northeast of the Proposed Project.

In the City of Pittsburg and Contra Costa County, Tri Delta Transit operates bus service in the vicinity of the Proposed Project. Line 381 provides service from the Pittsburg Marina on Marina Boulevard to Los Medanos College at East Leland Road and Lakeview Circle, via Railroad Avenue. Line 381 operates every 30 minutes on weekdays between 7:00 AM and 6:30 PM and every hour on weekends between 7:30 AM and 11:00 PM. Line 387 provides broader weekday service between 4:45 AM and 10:15 PM from the Antioch Bay Area Rapid Transit (BART) station to the Pittsburg-Bay Point BART station, with stops along Willow Pass Road, West 10th Street, and Black Diamond Street near the Proposed Project area (Tri Delta Transit 2024). These routes would overlap with an approximately 250-foot-segment of the proposed LSPGC Telecommunications Line; however, no bus stops are located along this portion of the routes.

5.17.1.7 Vehicle Miles Traveled

In accordance with Senate Bill (SB) 743, California Environmental Quality Act (CEQA) Guidelines Section 15064.3(b) was adopted in 2018 and established vehicle miles traveled (VMT) as the criteria for determining the significance of transportation-related impacts. VMT is a measure of the total number of miles driven to or from a development, sometimes expressed as an average per trip or per person. Table 5.17-3: Average Daily Vehicle Miles Traveled presents a summary of the average daily VMT in 2021 in Solano County, Sacramento County, and Contra Costa County.

Table 5.17-3: Average Daily Vehicle Miles Traveled

Jurisdiction	Rural Average Daily VMT in 2021	Urbanized Average Daily VMT in 2021	Total Average Daily VMT in 2021
Solano County	3,242.16	10,253.53	13,495.69
Sacramento County	2,971.47	27,549.47	30,520.94
Contra Costa County	983.19	20,931.87	21,915.06

Source: Caltrans 2021b

5.17.1.8 Emergency Access

The Solano County Office of Emergency Services establishes and maintains programs and procedures to protect lives and property of Solano County residents from natural or man-made disasters. The Sacramento County Office of Emergency Services coordinates the overall Sacramento County-wide response to large-scale incidents and disasters. The Contra Costa County Department of Public Works manages transportation systems and infrastructure, including roads, bridges, railways, aviation, and marine.

Section 5.9 Hazards, Hazardous Materials, and Public Safety provides additional information pertaining to evacuation routes. Roadways that would be utilized during a potential evacuation in the Proposed Project area in Solano County include Collinsville Road, SR-12, I-680 to the west, and I-5 to the east. Roadways that would be utilized during a potential evacuation in the Proposed Project area in Contra Costa County include Willow Pass Road, travel west on SR-4, and travel north or south on I-680.

5.17.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.17.2.1 Regulatory Setting

5.17.2.1.1 Federal

Code of Federal Regulations

Title 49, Subtitle B of the Code of Federal Regulations (CFR) includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials

program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

Hazardous Materials Transportation Act of 1974

The United States (U.S.) Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA). The HMTA authorizes the Secretary of Transportation to designate a commodity as a hazardous material if the transportation of a commodity of a particular quantity and form poses an unreasonable risk to the health and safety or property of the public. The regulations identifying various commodities as hazardous materials and specifying the requirements for their transport are codified in the Title 49, Parts 100 to 185 of the CFR (U.S. DOT 2023).

5.17.2.1.2 State

California Vehicle Code

Caltrans owns the rights-of-way (ROWs) for the state highway system and is responsible for protecting the public and infrastructure. Caltrans is also the administrating agency for regulations related to traffic safety, including the licensing of drivers, transportation of hazardous and combustible materials, and the safe operation of vehicles. The California Vehicle Code includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. Caltrans requires transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551 of the California Vehicle Code.

California Streets and Highways Code

Section 660 of the California Streets and Highways Code allows Caltrans to issue encroachment permits authorizing activities related to the placement of encroachments within, under, or over state highway ROWs. Caltrans reviews all requests from utility companies that plan to conduct activities within state highway ROWs. Caltrans's encroachment permits may include conditions or restrictions that limit when construction activities can occur within or above roadways that are under the jurisdiction of Caltrans. The California Streets and Highways Code also includes regulations for the care and protection of state and county highways and requires permits for any load that exceeds Caltrans's weight, length, or width standards for public roadways. Sections 700 through 711 provide provisions that are specific to utility providers. Additionally, the California Streets and Highways Code outlines directions for cooperation with local agencies, guidelines for permits, and general provisions relating to state highways and Caltrans's jurisdiction.

Caltrans's Guide for the Preparation of Traffic Studies describes when a traffic impact study is needed. Traffic studies are needed to evaluate levels of services for operating state highway facilities based on measures of effectiveness. These measures of effectiveness describe the measures best suited for analyzing state highway facilities. Traffic studies are needed to evaluate when levels of service (LOS) are adequate and ensure certain levels do not become insufficient. Caltrans acknowledges that this may not always be feasible to evaluate and recommends that the lead agency consult with Caltrans to determine an appropriate LOS. The intent of Caltrans's Guide for the Preparation of Traffic Studies is to provide a starting point and a consistent basis

upon which Caltrans evaluates traffic impacts to state highway facilities; the applicability of the guide for local streets and roads (i.e., non-state highways) is at the discretion of the affected jurisdiction.

California Transportation Commission

The California Transportation Commission (CTC) was established in 1978 out of a growing desire for a single, unified California transportation policy. The CTC is responsible for programming and allocating funds for the construction of highway, passenger rail, active transportation, aeronautics, and transit improvements throughout California. The CTC advises and assists the Secretary of the California State Transportation Agency and the state legislature in formulating and evaluating state policies and plans for California's transportation programs. The CTC is also an active participant in the initiation and development of state and federal legislation that seeks to secure financial stability for the state's transportation needs.

California Joint Utility Traffic Control Manual

The California Joint Utility Traffic Control Manual provides guidelines for ensuring that the needs of all road users (e.g., motorists, bicyclists, and pedestrians) are met through the establishment of a temporary traffic control zone during highway construction, utility work, and maintenance operations. For any Proposed Project construction activities within a local public ROW, the use of a traffic control service and any lane closures would be conducted in accordance with applicable laws and permit conditions. These traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual.

5.17.2.1.3 Regional

Solano Transportation Authority

The STA's Solano County Comprehensive Transportation Plan 2030/2035, approved in June 2005, serves as a blueprint for greater Solano County's transportation system. The plan's goal is to develop a balanced transportation system that addresses preserving and enhancing quality of life, serving all members of the community, maintaining existing facilities and services, enhancing regional and local mobility, expanding travel choices, linking transportation and land use planning and facilities, improving accessibility, enhancing safety, and supporting economic development.

Comprehensive Transportation Plan Arterials, Highways and Freeways Element

The STA is responsible for preparing and updating the Arterials, Highways and Freeways Element of the Solano County Comprehensive Transportation Plan 2030/2035. The Arterials, Highways and Freeways Element identifies priorities for Solano County that will be recommended for inclusion in the regional transportation plan/sustainable communities strategy prepared by the Metropolitan Transportation Commission (STA 2018). The roadways included in the Arterials, Highways and Freeways Element are identified as:

- Roadways providing access to and from transit facilities of regional significance,
- Roadways providing access to and from major employment centers,
- Roads providing intercity and freeway/highway connections, and
- Other roads critical to providing countywide emergency response.

Bicycle Master Plan and Pedestrian and Trails Master Plan

In 2011 and 2012, the STA prepared and adopted the Solano Countywide Bicycle Transportation Plan and the Solano Countywide Pedestrian Transportation Plan (STA 2011, 2012). The plans promote the continued development of regional pedestrian and bikeway systems and non-motorized transportation route planning, in conjunction with planning for streets, roads, highways, and public transit.

Sacramento County Department of Transportation

The Sacramento County Department of Transportation (SACDOT) was established to address community transportation needs to improve the county's system of roadways. The department has drafted various programs and plans to address the needs of the county. The Sacramento Active Transportation Plan was adopted in 2022 and is a tool for guiding county staff, public officials, residents, and developers to build a balanced transportation system for the unincorporated part of the county. The plan seeks to create safer, more active, and accessible transportation to improve the physical environment of the county. SACDOT has adopted various other plans that cover topics like bikeways, local roadway safety, pedestrian safety, and transit.

Transportation Analysis Guidelines

On October 6, 2020, the Sacramento County Board of Supervisors adopted revised significance thresholds for CEQA transportation analysis using VMT, in compliance with SB 743. SACDOT has updated the Transportation Analysis Guidelines (TAG) to provide guidance on VMT analysis. The TAG outlines screening criteria, by which projects may be exempted from VMT analysis. If screening criteria are not met, a proponent must analyze the project's VMT using methodologies outlined in the TAG. If a project is found to have a significant impact, VMT-reducing mitigation will be required.

Projects that are too small to have any appreciable impact on VMT generation are screened out from analysis. The minimum project size for VMT analysis is based on a maximum generation of 237 average daily trips (ADT) per day.

Contra Costa Transportation Authority

The CCTA's Countywide Transportation Plan was adopted in 2017 and is the blueprint for the county's transportation system. The plan provides a long-range vision for transportation and identifies the projects, programs, and policies that the county's Authority Board hopes to pursue. The plan includes policies and goals for addressing growing populations, jobs, and traffic congestion.

East County Action Plan

Chapter 13: Procedures for Notification, Review, and Monitoring of the CCTA's East County Action Plan includes a set of procedures for methods of sharing environmental documents, reviewing General Plan Amendments (GPAs), and monitoring progress in attaining the traffic service objectives. Regional Transportation Planning Committees (RTPCs) are groups that engage in multi-jurisdictional and collaborative planning work to improve the transportation system in Contra Costa County. Within this region, TRANSPLAN is the RTPC. The five member governments of TRANSPLAN include the cities of Antioch, Brentwood, Oakley, and

Pittsburg and Contra Costa County. Furthermore, the East County Action Plan sets the threshold for circulating transportation impact studies and/or Environmental Impact Reports to neighboring jurisdictions, consistent with the CCTA Implementation Guide. This threshold states that any project that generates at least 100 net new peak hour vehicle trips (NNPHVTs) triggers preparation of a transportation impact study and notification of neighboring jurisdictions. TRANSPLAN requires any proposed project that generates more than 100 NNPHVTs and for which an environmental document is being prepared to issue a Notice of Intent.

Tri-Valley Transportation Plan and Action Plan

The Tr-Valley Transportation Council's (TVTC's) Tri-Valley Transportation Plan and Action Plan (TVTC Plan) was most recently updated in 2014, and the TVTC is composed of the cities of Dublin, Livermore, Pleasanton, and San Ramon, the Town of Danville, and Alameda and Contra Costa counties. As the transportation plan for the Tri-Valley Area, many of the recommendations and goals in the TVTC Plan are either incorporated into or consistent with the transportation plans prepared by the CCTA.

5.17.2.1.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County Code

Solano County Code Chapter 24 governs the placement of any structures along or on county roads. The county requires an encroachment permit for the construction of any tower, pole, pole line, pipe, pipeline, driveway, private road, curb and gutter, sidewalk, fence, or wall in, under, or over any portion of a county roadway.

Solano County General Plan

The Circulation Element of the Solano County General Plan (Solano County 2008) provides goals, policies, and implementation measures to provide greater mobility through a balanced transportation system. The following policies apply to the Proposed Project:

- Policy TC.P-4: Evaluate proposals for new development for their compatibility with and potential effects on transportation systems.

- Policy TC.P-5: Fairly attribute to each development the cost of on- and off-site improvements needed for state and county roads and other transportation systems to accommodate that development, including the potential use of development impact fees to generate revenue.

- Policy TC.P-11: Maintain and improve the current roadways and highway system to meet recommended design standards set forth by the County, including streets that also carry transit and nonmotorized traffic.

The Circulation Element of the Solano County General Plan provides guidance to help achieve efficiency and economy in the transportation system, and to facilitate the planning required to maintain and expand the existing transportation network. As described by the Solano County Department of Resource Management, all projects are to be designed to maintain an LOS of C, except where the existing LOS is already below C, as calculated using the Transportation Research Board's most recent Highway Capacity Manual (TRB 2022).

Sacramento County General Plan

The Circulation Element of the Sacramento County General Plan (Sacramento County 2022) provides goals, policies, and implementation measures to provide the framework for decision-making concerns regarding countywide transportation systems, modes of transportation, and related facilities. The Sacramento County General Plan provides coordination with the cities and unincorporated communities within the county through the Metropolitan Transportation Plan. The main theme of the Circulation Element is to provide for mobility through a variety of choices. The following policies in the Circulation Element apply to the Proposed Project:

- Policy CI-1: Provide complete streets to provide safe and efficient access to a diversity of travel modes for all urban, suburban and rural land uses within Sacramento County except within certain established neighborhoods where particular amenities (such as sidewalks) are not desired. Within rural areas of the County, a complete street may be accommodated through roadway shoulders of sufficient width or other means to accommodate all modes of travel.

- Policy CI-10: Land development projects shall be responsible to provide improvements which address the project's adverse effects on local and regional roadways.

- Policy CI-53: Roadway improvements along established scenic corridors shall be designed and constructed so as to minimize impacts to the scenic qualities of the corridor.

Contra Costa County General Plan

The Transportation and Circulation Element of the Contra Costa County General Plan (Contra Costa County 2005) provides goals, policies, and implementation measures to ensure that the county's transportation system will have adequate capacity to serve the county's planned growth. The Transportation and Circulation Element emphasizes the efficient use of the existing transportation system and cost-effective enhancements to this system to accommodate planned

growth consist with the general plan's Land Use Element. The following Transportation and Circulation Element policies apply to the Proposed Project:

- Policy 5-4: Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.

- Policy 5-17: Emergency response vehicles shall be accommodated in development project design.

- Policy 5-31: Roads developed in hilly areas shall minimize disturbance of the slope and natural features of the land.

- Policy 5-47: Scenic corridors shall be maintained with the intent of protecting attractive natural qualities adjacent to various roads throughout the county.

5.17.3 Impact Questions

5.17.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For transportation, the CEQA Environmental Checklist asks if the Proposed Project would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

5.17.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA impact questions are required for transportation. Would the Proposed Project:

- Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?
- Interfere with walking or bicycling accessibility?
- Substantially delay public transit?

5.17.4 Impact Analysis

5.17.4.1 Transportation Impact Analysis

5.17.4.1.1 Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Construction

LSPGC Collinsville Substation and 230 kV Overhead Segment, PG&E 500 kV Interconnection and 12 kV Distribution Line

Less-than-Significant Impact. Proposed Project-related traffic in Solano County would be temporary during the approximately 26-month construction period. SR-12 and SR-4 would serve as the regional routes to the Proposed Project for construction vehicles. Table 5.17-1: Public Access Roadways lists access roads that would be utilized to access the proposed LSPGC Collinsville Substation site and Proposed Project work areas. Construction of the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line would temporarily increase the number of vehicles on these roadways. Although some disruption to traffic flow may occur with ingress or egress from access roads/routes, such events would be periodic and temporary.

As previously discussed in Section 5.17.1.1 Existing Roadways and Circulation, the Proposed Project in Solano County would be accessed using SR-12 traveling along Birds Landing Road and Collinsville Road from the City of Rio Vista or traveling south on Shiloh Road and Collinsville Road from the City of Fairfield. Based on these access points, peak construction traffic would represent between approximately 1 and 3 percent of the average daily trips reported along SR-12 in the Proposed Project area. As presented in Table 5.17-1: Public Access Roadways, the majority of the roadways in the Proposed Project vicinity are local, two-lane roads that are not anticipated to experience heavy traffic or circulation issues. The VMT generated by the Proposed Project during construction is summarized in Table 5.17-4: Anticipated Vehicle Miles Traveled.

Table 5.17-4: Anticipated Vehicle Miles Traveled

Trip Type	Maximum Daily VMT	Total VMT
Automobiles	21,480	5,787,840
Construction Vehicles	3,280	692,800
Total	**24,240**	**6,480,640**

Note: Daily VMT will vary depending on factors such as material availability, resource availability, and construction scheduling. The maximum daily total sum of VMT across vehicle classes has been presented. Calculations were estimated using the construction equipment list, construction schedule, and assumptions presented in Attachment 5.3-A: Air Quality Calculations in Section 5.3 Air Quality.

Trips associated with daily construction personnel traffic are not anticipated to disrupt traffic flow along SR-12 or the local roads that would be used for construction access to the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line. The majority of construction workers

would be reverse commuting, traveling away from metropolitan areas toward the rural Proposed Project area and then returning in the evening. Personal vehicles would park within staging areas and, therefore, would not encroach upon public roadways. Proposed Project-generated traffic would be temporary and periodic, and traffic on existing roadways would not be significantly increased as a result of the Proposed Project construction. No alternative modes of transportation (e.g., rail, bus, or bicycle traffic) or pedestrian circulation pattern would be altered or adversely affected by construction of the Proposed Project because none are located in the Proposed Project area. Additionally, the Proposed Project would not be located within 0.5 mile of a major transit stop or high-quality transit corridor; thus, public transit would likely be unaffected by construction-related traffic. Therefore, the Proposed Project would not conflict with any program, plan, ordinance, or policy addressing the circulation system. As a result, impacts would be less than significant.

LSPGC 230 kV Submarine Segment

Less-than-Significant Impact. A review of the CCTA's 2017 Countywide Transportation Plan and the STA's Solano County Comprehensive Transportation Plan revealed no policies or ordinances regarding boat travel on the Sacramento River. All boat traffic necessary to install the LSPGC 230 kV Submarine Segment and associated in-river transition structure would be coordinated with the appropriate agency staff. Therefore, construction activities would not conflict with any program, plan, ordinance, or policy regarding boat traffic in the Sacramento River, and impacts would be less than significant. Additional information regarding boat traffic within the Delta can be found in Section 5.16 Recreation.

LSPGC 230 kV Underground Segment and Telecommunications Line

Less-than-Significant Impact. There are currently active transportation and general plans for the improvement of Bayside Drive, Railroad Drive, and West 8th Street in the City of Pittsburg (City of Pittsburg 2020a; 2020b). These roadways may be utilized by construction personnel to access the site during construction of the proposed LSPGC 230 kV Underground Segment Telecommunications Line. As discussed previously in Section 5.17.1.1 Existing Roadways and Circulation, Railroad Avenue is classified as a Major Arterial roadway and may be used as the main access for construction personnel traveling to and from worksites. The City of Pittsburg General Plan Transportation Element estimates that the average VPD for Railroad Avenue, which is a major arterial road, is between 15,000 and 55,000 (City of Pittsburg 2020a). During construction of the Proposed Project, the average construction related traffic would be a small fraction of the estimated ADT for Railroad Avenue. As a result, impacts would be less than significant.

As previously discussed in Sections 5.17.1.5 Pedestrian Facilities and 5.17.1.4 Bicycle Facilities, a network of sidewalks and bicycle facilities exist in the area where the proposed LSPGC Telecommunications Line would be constructed. The proposed LSPGC Telecommunications Line may require temporary closures of sidewalks along Marina Boulevard, Herb White Way, Halsey Way, and Halsey Court, as well as bicycle facilities along Marina Boulevard and Herb White Way within the City of Pittsburg. Although closures of sidewalks and bicycle facilities may be required, these closures would be temporary and typically limited to one side of the street at a time. Additionally, construction would be conducted during daylight hours and in

accordance with all necessary traffic control permits prior to the start of construction. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components would result in a negligible number of additional vehicle trips during operation because the new facilities would be unstaffed and remotely monitored. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. No alternative modes of transportation (e.g., rail, bus, or bicycle traffic) or pedestrian circulation pattern would be altered or adversely affected by O&M of the Proposed Project because none are present in the Proposed Project area or O&M activities would not affect them. As a result, impacts would be less than significant.

5.17.4.1.2 Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. CEQA Guidelines Section 150964.3, Determining the Significance of Transportation Impacts, was introduced to provide guidance for determining the significance of transportation impacts. This section provides criteria for determining a project's transportation impacts, including for land use projects (Section 15064.3[b][1]) and transportation projects (Section 15064.3[b][2]). In accordance with Criteria 3 and Criteria 4 of CEQA Guidelines Section 15064.3, VMT and traffic data were calculated for construction and operation of the Proposed Project to provide a comparison to available traffic data within and surrounding the Proposed Project.

As discussed in Section 5.17.1.2 Transit and Rail Services, no rail systems service the LSPGC and PG&E Proposed Project components. The nearest railway to the Proposed Project crosses SR-12 just east of Shiloh Road. As previously discussed, bus routes operate in the vicinity of the proposed LSPGC Telecommunications Line where partial lane closures may be required during construction. Prior to the start of construction, the appropriate traffic control permits would be secured and all requirements of these permits would be implemented to minimize transit delays.

As previously discussed, the peak employment is anticipated to be approximately 160 workers per day, but the average workforce on site would be less. A maximum of approximately 216 vehicle round trips per day are expected during construction during peak activities. On average, construction of the Proposed Project would generate approximately 89 round trips per day.

A 50-mile radius around the LSPGC and PG&E Proposed Project components includes parts of the cities of Pittsburgh, Antioch, Suisun City, and Fairfield, as well as many other smaller cities, towns, and communities. Workers would commute an average one-way distance of approximately 50 miles to and from the Proposed Project daily. The average VMT for Solano, Sacramento, and Contra Costa counties is provided in Table 5.17-3: Average Daily Vehicle Miles Traveled. Given the rural nature of much of the Proposed Project location, the VMT for construction would be comparable to other rural uses in the county.

The estimated total daily average VMT of approximately 9,775 miles during construction would last approximately 26 months. The VMT that would be generated by the Proposed Project during construction is summarized in Table 5.17-4: Anticipated Vehicle Miles Traveled.

As previously described in Section 5.17.2.1.3 Regional, Sacramento County has established a screening threshold of 237 ADT when evaluating if a project could have an appreciable impact (Sacramento County 2022). Contra Costa and Solano counties do not currently have daily trip thresholds established in their respective general plans. As described previously, the Proposed Project would generate an average of 89 round trips per day during construction; less than the 237-ADT threshold established by Sacramento County. As a result, the Proposed Project would not result in transportation impacts related to increased VMT and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. Construction of the LSPGC Proposed Project components would generate vehicle trips predominantly during construction activities and would not result in any long-term increase in VMT. Once construction is complete, the proposed LSPGC Collinsville Substation would be remotely monitored and unstaffed. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. Overall, the Proposed Project would generate up to 20 round trips annually, well below Sacramento County's 237-ADT screening threshold. Based on the limited number of personnel required for monthly inspections and the negligible VMT that would occur annually during O&M, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. O&M activities associated with the PG&E Proposed Project components would be similar to those currently performed by PG&E for its existing facilities. This incremental increase in vehicle trips associated with O&M would be negligible; therefore, impacts would be less than significant.

5.17.4.1.3 Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

LSPGC Components

Less-than-Significant Impact. Construction of the LSPGC components may include minor grading, vegetation trimming/removal, and/or the application of road base for roadway improvements. Work on the proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment would also include the construction of new temporary access roads. These road improvements would not include any design features that would substantially increase traffic hazards, such as sharp curves or dangerous intersections. All temporary access roads would be located in a rural area and would be limited to construction personnel use only. Construction activities would be compatible with the intended use of the roadways and would not utilize any equipment that would increase hazards to the existing roadways.

The proposed LSPGC Overhead Segment and Submarine Segment would involve construction within the Delta. To reduce the potential for these activities to impact navigation within the Delta, LSPGC would implement applicant-proposed measure (APM) TRA-1. This APM would require LSPGC to prepare and submit a Navigational Study to the U.S. Coast Guard (USCG) documenting the potential effects of the construction and O&M of the Proposed Project on boat navigation within the Delta. LSPGC would implement recommendations from the study into the final Proposed Project design following review by the USCG.

Encroachment permits from Solano County would be secured and the required plans that include measures to safely guide traffic during construction and minimize traffic impacts would be developed and implemented. The implementation of these measures (e.g., proper signage, orange cones, and flaggers) would safeguard construction workers and existing traffic, provide safe passage, and minimize traffic impacts.

Additionally, construction of the proposed LSPGC Telecommunications Line may require temporary closure of lanes of traffic and/or sidewalks in the nearby residential area in the City of Pittsburg. As described previously the necessary encroachment permits would be secured prior to construction. The conditions within these permits would be implemented during construction to reduce the potential disruptions to and maintain safe access for vehicles, pedestrians, and bicycles. Therefore, with the implementation of APM TRA-1, the LSPGC Proposed Project components would not substantially increase traffic hazards and would not introduce any incompatible uses to the area. As a result, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. Construction of the PG&E Proposed Project components may include minor grading, vegetation trimming/removal, and/or the application of road base for roadway improvements. Work on the proposed PG&E 500 kV Interconnection and PG&E 12 kV Distribution Line would also include the construction of new temporary access roads. These temporary access roads would not include any design features that would substantially increase traffic hazards, such as sharp curves or dangerous intersections. All temporary access roads

would be located in a rural area and would be limited to construction personnel use only. Construction activities would be compatible with the intended use of the roadways and would not utilize any equipment that would increase hazards to the existing roadways.

Encroachment permits from Solano County would be secured, and the required plans that include measures to safely guide traffic during construction and minimize traffic impacts would be developed and implemented. The implementation of these measures (e.g., proper signage, orange cones, and flaggers) would safeguard construction workers and existing traffic, provide safe passage, and minimize traffic impacts. Construction of the PG&E Proposed Project components would not substantially increase traffic hazards and would not introduce any incompatible uses to the area. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components are not anticipated to have incompatible use or design features that would substantially increase hazards. The new substation and transmission lines would be unstaffed and remotely monitored during operation. Typical O&M activities would primarily involve routine inspections, preventative maintenance, and repair of the existing facilities. These activities would not require the construction of design features that would result in hazards in the Proposed Project area. As a result, impacts would be less than significant.

5.17.4.1.4 Would the project result in inadequate emergency access?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. Construction of the LSPGC and PG&E Proposed Project components would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan. The only temporary full lane closure may occur on Stratton Lane during construction of the proposed PG&E 12 kV Distribution Line. Some activities, such as proposed LSPGC Collinsville Substation equipment delivery and stringing wires over roadways, could temporarily affect traffic on local roads. Likewise, the construction of new proposed LSGPC and PG&E overhead facilities, as well as the installation of the proposed LSPGC Telecommunications Line facilities underground in road ROWs, would require temporary closure of a lane. Lane closure may also be required during construction of the portion of the new access road that connects to Stratton Lane. These impacts would be temporary, short term (typically lasting less than 1 week), and localized; and access for emergency vehicles would be maintained in all instances. Any temporary closures would be coordinated with local jurisdictions and emergency service providers in accordance with the encroachment permit process. As a result, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously stated, the LSPGC and PG&E Proposed Project components would result in a nominal increase in O&M activities (e.g., monitoring facilities) in the area as the

LSPGC and PG&E Proposed Project components would be remotely monitored during operation. Typical O&M activities would primarily involve routine inspections, preventative maintenance, and repair of the existing facilities. These activities would primarily occur within existing and proposed access roads and would not be located within roadways that would impede emergency access. Additionally, PG&E already inspects and maintains facilities in the area, and O&M activities are anticipated to be similar in nature. As a result, no impact would occur.

5.17.4.1.5 Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. No pedestrian or bicycle facilities (e.g., walkways, trails, paths, or designated bike routes) or public transit stations or stops are located in the vicinity of the LSPGC and PG&E Proposed Project components in Solano County. Vehicular access is the primary mode of transportation in the Proposed Project vicinity in Solano County.

As discussed previously, traffic control procedures may be implemented along Stratton Lane during construction of the proposed LSPGC Collinsville Substation and the associated permanent new driveway that would be installed from Stratton Lane to provide access to the substation. Ingress and egress of large construction vehicles and equipment may also slow traffic at times on local roads throughout the Proposed Project vicinity. These restrictions would be temporary, and any access restrictions would be conducted in accordance with the encroachment permit and related traffic control plans describing measures to be implemented during construction that would safely guide traffic (e.g., signs and workers directing traffic), safeguard construction workers, provide safe passage, and minimize traffic impacts. Therefore, given the low likelihood of pedestrians and bicyclists in Solano County, as well as compliance with traffic control measures, impacts would be less than significant.

The proposed LSPGC 230 kV Underground Segment would be constructed on private property that does not contain any pedestrian, bicycle, or public transit facilities. The proposed LSPGC Telecommunications Line would primarily be constructed within public rights-of-way located in the City of Pittsburg. Existing bus stops and routes are located along Railroad Avenue, West 8th Street, and East 10th Street within the City of Pittsburg. Construction of the proposed LSPGC Telecommunications Line would necessitate partial or full lane and/or sidewalk closures in the vicinity of the proposed route along Halsey Way, Halsey Court, Herb White Way, and Marina Boulevard. As discussed previously in Section 5.17.1.4 Bicycle Facilities, bicycle facilities exist along Marina Boulevard and Herb White Way in the area where the proposed LSPGC Telecommunications Line would be constructed. Although construction of the proposed LSPGC Telecommunications Line may require temporary closures of pedestrian and bicycle facilities, only one side of the street would potentially be closed to pedestrian access at one time and only for a relatively short duration during daytime construction activities. Additionally, no work would occur in the vicinity of existing bus stops and the necessary encroachment permits would be secured prior to construction. The conditions within these permits would be implemented during construction to reduce the potential disruptions to and maintain access for pedestrian, bicycle, and public transit facilities. Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. No bicycle traffic or pedestrian circulation patterns would be altered or adversely affected by long-term O&M activities. Operation of the LSPGC and PG&E Proposed Project components would be conducted remotely, and no changes to existing access would occur. If maintenance is required for any Proposed Project structure, vehicle and equipment use may interrupt commuter traffic flow of the roadway. Given the low likelihood of pedestrians and bicyclists, as well as the traffic control measures that would be implemented, impacts would be less than significant.

5.17.4.1.6 Would the project interfere with walking or bicycling accessibility?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As previously described, no pedestrian or bicycle facilities are located in the vicinity of the LSPGC and PG&E Proposed Project components within Solano County. While bicycle lanes are present along Railroad Avenue, West 8th Street and East 10th Street within the City of Pittsburg; these roads would typically be used for the transport of construction equipment and materials to the Proposed Project. Pedestrian and bicycle traffic may be affected during construction of the proposed LSPGC Telecommunications Line. Construction may require temporary closure of lanes of traffic and/or sidewalks. As described previously the necessary encroachment permits would be secured prior to construction. The conditions within these permits would be implemented during construction to reduce the potential disruptions to and maintain access for pedestrians and bicycles. Therefore, impacts would be less than significant.

5.17.4.1.7 Would the project substantially delay public transit?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As discussed previously, no public transit stations or stops are located near the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line in Solano County. Portions of the proposed LSPGC Telecommunications Line would be constructed along roads with bus routes within the City of Pittsburg; however, no bus stops are located in the vicinity of the proposed construction activities. Prior to the start of construction, all appropriate encroachment permits would be secured and any traffic control requirements would be implemented to minimize delays to bus service. Construction in the vicinity of these bus routes would be limited to installing handholes and operating horizontal directional drilling (HDD) equipment at three locations, with construction lasting approximately 10 days at each site. With the implementation of the required traffic controls, impacts during construction would be less than significant. Once constructed, maintenance of the proposed LSPGC Telecommunications Line would be performed by the owner of the fiber optic cable, which already inspects the existing lines in the area. Localized traffic control measures would be implemented in the vicinity of any required temporary lane closures consistent with LSPGC standards. Due to the limited inspection

schedule, use of traffic control measures, and limited vehicle traffic associated with these activities, impacts would be less than significant.

5.17.4.2 Vehicle Miles Traveled

The Proposed Project would not be located within 0.5 mile of a major transit stop or high-quality transit corridor. An average of approximately 89 vehicle round trips per day are expected during the construction. A maximum of approximately 188 worker commute vehicles and 37 truck trips would occur during construction. The VMT generated by the Proposed Project during construction is summarized in Table 5.17-4: Anticipated Vehicle Miles Traveled.

5.17.4.3 Traffic Impact Analysis

A traffic impact analysis study has not been prepared for the LSPGC and PG&E Proposed Project components, as the Proposed Project would not result in any noticeable long-term or permanent increases in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, is not a development project, and would not result in any land use changes.

5.17.4.4 Hazards

Neither the construction phase nor the O&M phase of the LSPGC and PG&E Proposed Project components would generate any permanent traffic hazards. Temporary road and/or lane closures may occur along Stratton Lane during construction of the proposed LSPGC Collinsville Substation, the proposed LSPGC 230 kV Transmission Line, the proposed PG&E 500 kV Interconnection, and access roads; as well as along Marina Boulevard, Halsey Way, and Halsey Court in the City of Pittsburg during construction of the proposed LSPGC Telecommunications Line. A traffic control plan would be prepared and implemented in accordance with encroachment permit requirements. This plan would reduce the potential hazards by notifying landowners, emergency responders, and local agencies of the planned construction activities; require construction activities to be coordinated with emergency service providers; and implement applicable traffic control measures.

5.17.4.5 Accessibility

As previously described, no existing bicycle lanes or transit stops would overlap with LSPGC and PG&E Proposed Project component construction activities. Construction of the proposed LSPGC Telecommunications Line would occur along sidewalks in the City of Pittsburg. All required encroachment permits would be secured prior to construction and any permit requirements would be implemented. In addition, workspaces in the vicinity of the sidewalks would be limited in size to facilitate the use of HDD equipment and sidewalks exist on both sides of the streets where the telecommunications line would be installed. Therefore, accessibility would not be affected.

5.17.4.6 Transit Delay

As discussed previous in Section 5.17.1.6 Bus Transit, approximately 250 feet of the proposed LSPGC Telecommunications Line would overlap with two bus routes in the City of Pittsburg; however, no existing bus stops are located in the vicinity of planned construction activities. All

required encroachment permits would be secured prior to construction and any permit requirements would be implemented; therefore, delays to transit routes are not anticipated.

5.17.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for transportation.

5.17.6 Applicant-Proposed Measures

5.17.6.1 Transportation Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM TRA-1: Navigational Study.** LSPGC would submit a Navigational Study to the USCG documenting the potential effects of the construction and O&M of the Proposed Project on boat navigation within the Suisun Marsh and the Delta. Following the USCG's review, LSPGC would provide the study to the CPUC for its records prior to in-river construction.

5.17.7 PG&E Construction Measures

5.17.7.1 Transportation PG&E Construction Measures

PG&E would adhere to encroachment permit requirements and coordinate temporary lane closures with emergency services to reduce impacts to less-than-significant levels, and implementation of Construction Measures would not be required.

5.17.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to transportation associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area is located in the same transportation corridors and would be constructed with the same construction methods. As such, the potential modification would result in less-than-significant impacts to transportation and the environmental setting, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.18 TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			✓	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			✓	

This section describes the tribal and cultural resources in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.18.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville

Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by a project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]). The APE is defined to identify resources in the area that have potential for historic significance, that should be evaluated for eligibility for the National Register of Historic Places (NRHP), and that may be directly or indirectly affected by the undertaking, in compliance with Title 36, Section 800.16(d) of the CFR. The Area of Potential Impacts (API) is the commensurate California Environmental Quality Act- (CEQA-) level equivalent. The CEQA lead agency must formally approve the API. For the purpose of this assessment, the proposed study area is referred to as the proposed API/APE.

The proposed API/APE includes the following:

- an approximately 11-acre proposed LSPGC substation site;
- two approximately 1.5-mile-long, single-circuit proposed PG&E 500 kV transmission line segments;
- an approximately 1-mile-long, double-circuit proposed LSPGC overhead 230 kV transmission line;
- an approximately 4.5-mile-long stretch of proposed LSPGC submerged transmission cable under the Delta;
- up to 18 approximately 0.3-mile-long proposed LSPGC underground transmission cables;
- an approximately 3-mile-long proposed PG&E 12 kV distribution line; and
- an approximately 1.2-mile-long proposed LSPGC underground telecommunications line.

The proposed API/APE includes all of the Proposed Project components and rights-of-way (ROWs). See Section 5.5 Cultural Resources for further discussion of the dimensions of the proposed API/APE.

5.18.1.1 Outreach to Tribes

A Sacred Lands File (SLF) search request of the Proposed Project area was submitted to the Native American Heritage Commission (NAHC) on May 5, 2023. The SLF search was returned by the NAHC with negative results on June 1, 2023. The NAHC provided a list of 23 Native American contacts who may be able to supply information related to known cultural resources in the Proposed Project area. On June 26, 2023, letters were sent to the 23 tribal contacts to notify representatives of Proposed Project plans and to request any information of known Native

American cultural resources in the proposed API/APE or the vicinity. To date, two contacts have responded to outreach efforts. Copies of the SLF search request and all NAHC correspondence to date are included in Appendix C: NAHC Correspondence in Attachment 5.5-A: Cultural Resources Technical Report.

On August 21, 2023, Yvonne Perkins, Tribal Historic Preservation Officer (THPO) and Cultural Resource Chairperson of the Yocha Dehe Wintun Nation, wrote that the Wintun Cultural Resources Department had reviewed the Proposed Project information and concluded that the proposed API/APE is within the aboriginal territories of the Yocha Dehe Wintun Nation. Perkins maintained that the Wintun Nation has a cultural interest and authority in the proposed API/APE and requested formal consultation between the lead agency of the Proposed Project and the Wintun Cultural Resources Department. The California Public Utilities Commission (CPUC) will perform additional NAHC and tribal outreach activities in accordance with Assembly Bill (AB) 52 at a later date.

A letter of response from Irene Zwierlein, Chairperson of the Mutsun Tribal Band of Mission San Juan Bautista, contained recommendations from the A.M.T.B Inc. and Amah Mutsun Tribal Band of San Juan Bautista if any cultural or historic sensitivity is encountered within 1 mile of the proposed API/APE. In the event that any culturally sensitive areas are identified in the records search results, Zwierlein's recommendations include cultural sensitivity training for all individuals and personnel who would move any earth, that a qualified California-trained archaeological monitor be present during any earth movement, and that a qualified Native American monitor be present during any earth movement.

5.18.1.2 Tribal Cultural Resources

No tribal cultural resources (TCRs) were identified through publicly available documentary resources, archaeological surveys, or communication with tribal representatives. The sections that follow describe the methods and results employed to identify TCRs within or adjacent to the proposed API/APE.

5.18.1.2.1 Identification via Records Search and Historical Research

A record search was conducted to determine if any TCRs listed or potentially eligible for listing on the NRHP or California Register of Historic Resources (CRHR) were present within or immediately adjacent to the proposed API/APE. The record search area included a 0.5-mile buffer of the proposed API/APE. The record search request was submitted by Chronicle Heritage, LLC (Chronicle Heritage) to the California Historical Resources Information System at the Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park on May 5, 2023 and was fulfilled on June 13, 2023.

Chronicle Heritage consulted the following historical maps of the proposed API/APE:

- General Land Office (GLO) survey maps (GLO 1870);
- Historical atlas maps of Solano County (Thompson and West 1878, Eager 1890);
- Historical topographic maps dating 1918, 1953, and 1978 (United States [U.S.] Geological Survey [USGS] 1918, 1953, and 1978); and

- Historical aerial photographs dating 1927, 1957, and 1970 (Nationwide Environmental Title Research [NETR] 2023).

The record search identified one prehistoric resource adjacent to the proposed API/APE, a part of a multi-component site consisting of a prehistoric campsite and the Hastings Adobe, an NRHP-nominated historic property. The review of historical maps and aerial photographs showed that very little change to the area has occurred from its initial development in the mid-19th century until very recently. On the 1870 survey map, the southernmost extent of the proposed API/APE within the Mexican land grant territory of Rancho Los Medanos is depicted. No buildings, structures, or other features that would lie within the proposed API/APE are depicted on the map. The 1890 map of Solano County shows several structures that may include the Hastings Adobe. The southern extent of the proposed API/APE was undeveloped prior to the construction of PG&E's existing Pittsburg Substation. PG&E's existing Pittsburg Substation first appears on historic maps in 1953 (USGS 1953) and can be seen on aerial images dating back to 1957 (NETR 2023). No Native American sites, villages, or place names are shown on historic maps within or adjacent to the proposed API/APE.

5.18.1.2.2 Identification via Archaeological Survey

Chronicle Heritage conducted an intensive pedestrian archaeological survey of terrestrial portions of the proposed API/APE on August 21 and 22 and October 16 to 18, 2023, and June 28, 2024, under the direction of Chronicle Heritage Senior Archaeologist Max van Rensselaer. The pedestrian survey was conducted using transects no more than 15 meters apart to account for resources that are located within or in the vicinity of the proposed API/APE.

During the survey, the proposed API/APE was examined for the presence of historic or precontact period archaeological site indicators. The prehistoric component of the previously recorded multi-component site was unable to be located due to its likely destruction associated with soil disturbances, including agricultural activity and animal grazing. No prehistoric or ethnohistoric archaeological resources or TCRs were located during the surface survey. Detailed survey methods and results are described in Attachment 5.5-A: Cultural Resources Technical Report.

eTrac, Inc. conducted an intensive submerged cultural resource remote sensing survey of the proposed API/APE between September 17 and October 26, 2023, as authorized by the California State Land Commission's Low Energy Geophysical Survey Permit No. 9235 and under the oversight of Nicholas George, Certified Hydrographer. The submerged cultural resource remote sensing survey was conducted using pre-planned parallel survey lines spaced at 30- to 40-meter intervals, depending on the capable coverage span of the geophysical instrument, to locate and identify potentially significant cultural resources within the proposed API/APE. None of the targets identified were assessed to be TCRs.

5.18.1.2.3 Identification via Tribal Representatives

As detailed previously in Section 5.18.1.1 Outreach to Tribes, the SLF search was negative for sacred lands within the search area. Two contacts responded to outreach efforts: THPO and Cultural Resource Chairperson of the Yocha Dehe Wintun Nation, Yvonne Perkins; and Chairperson of the Mutsun Tribal Band of Mission San Juan Bautista, Irene Zwierlein. Perkins

maintained that the Wintun Nation has a cultural interest and authority in the proposed API/APE and requested formal consultation between the lead agency of the Proposed Project and the Wintun Cultural Resources Department. The CPUC as the CEQA lead state agency will perform additional NAHC and tribal outreach activities in accordance with AB 52 at a later date. Formal consultation under section 106 of the National Historic Preservation Act (NHPA) will be conducted by the United States Army Corps of Engineers (USACE), serving as the lead federal agency for the Proposed Project. Zwierlein provided recommendations from the A.M.T.B Inc. and Amah Mutsun Tribal Band of San Juan Bautista if any cultural or historic sensitivity is encountered within 1 mile of the proposed API/APE.

5.18.1.3 Ethnographic Study

5.18.1.3.1 Prehistory

The most recently updated prehistory of the San Francisco Bay Area is presented by Milliken and others (2007). Also applicable to the Proposed Project vicinity is evidence gathered from recent archaeological investigations conducted in the Upper Los Vaqueros Watershed, which is approximately 15 miles south of the Proposed Project. These studies have revealed approximately 10,000 years of occupation, one of the longest sequences of human presence yet documented in a single locality in the broader San Francisco Bay Area (Meyer and Rosenthal 1997; Price et al. 2008). The prehistory presented in Meyer and Rosenthal (1997) is summarized in this subsection to provide a context within which to evaluate cultural resources and develop potential research questions to guide recommendations for mitigation.

Meyer and Rosenthal (1997) organized the prehistory of the Los Vaqueros region into five periods consisting of the following:

- Lower Archaic period 10,000 to 6,000 B.P (8050 to 4050 B.C.),[1]
- Middle Archaic period 6,000 to 2,500 B.P. (4050 to 50 B.C.),
- Upper Archaic period 2,500 to 1,500 B.P. (50 B.C. to A.D. 450),
- Upper Archaic-Emergent period transition 1,500 to 700 B.P. (A.D. 450 to 1250), and
- Emergent period 1,000 to 200 B.P. (A.D. 1250 to ca. 1750).

Two different chrono-cultural frameworks are commonly used to organize the archaeological record in the San Francisco Bay Area. One system comprises the Early-Middle-Late period divisions established by Beardsley (1954), commonly referred to as the Central California Taxonomic System (CCTS) (Gerow with Force 1968). The other system is based on the Archaic-Emergent period chronology established by Fredrickson (1973, 1994). The CCTS divisions are primarily based on changes in material culture, including stylistic changes in artifacts such as shell beads, and the presence or absence of various artifact types or classes. Some temporal subdivisions have been refined to 200- to 300-year intervals on the basis of shell bead horizons that have recently been recalibrated using the radiocarbon dating technique (e.g., Groza 2002). The Archaic-Emergent period chronology represents changes in subsistence and settlement patterns, economic strategies, and stylistic elements of the material culture. Choice of chrono-cultural framework depends on the research questions and the nature of the archaeological record

[1] When dates are presented in B.P., the corresponding B.C./A.D. dates are provided in parentheses as a conceptual aid.

being studied. It is interesting to note that Milliken et al. (2007) use a hybrid system for their recent reevaluation of the prehistory of the San Francisco Bay Area, applying a combination of the temporal sequence of the CCTS, and the cultural sequence of the Archaic-Emergent framework.

As Meyer and Rosenthal (1997) point out, the archaeological record of the Los Vaqueros watershed area was not well known when the CCTS was developed, with the earliest period beginning after people had been living in the Los Vaqueros area for thousands of years. A general scarcity of temporally diagnostic artifact types, such as shell beads, from this area made the temporal divisions of the CCTS, which were based largely on changes in temporally diagnostic artifact types, not effective for linking discrete deposits from the Los Vaqueros area to time-specific subperiods of the CCTS (Price et al. 2008). For these reasons, Meyer and Rosenthal framed their analysis with the Archaic-Emergent scheme, which allows for greater time depth. This framework also places the interpretive focus on behavioral changes, such as shifts in economic strategies and mobility patterns, though these are identified in part by temporally diagnostic artifacts, such as millingslabs or mortars. Nonetheless, with the accumulation of evidence in the 1990s from the archaeological excavations undertaken as part of the mitigation for the Los Vaqueros Reservoir, Meyer created a chrono-cultural sequence largely based on artifact types for the Los Vaqueros area (Milliken et al. 2007). This sequence presents the updated Los Vaqueros scheme in relation to both the Archaic-Emergent scheme (Fredrickson 1974) and the Early-Middle-Late scheme (Bennyhoff and Hughes 1987).

Notable developments and refinements of the chrono-cultural framework for the Los Vaqueros area directly resulted from the cultural resources mitigation measures stemming from compliance with both CEQA and the NHPA of 1966 (Price et al. 2008). These include the following:

- Extending the Lower Archaic 2,000 years deeper in time to at least 10,000 B.P. (8050 B.C.), formerly the province of the PaleoIndian period according to Fredrickson (1974), and a time not covered by the CCTS (e.g., Bennyhoff and Hughes 1987).

- Extending the beginning of the Middle Archaic 1,000 years back in time to around 6000 B.P. (4050 B.C.), whereas the Fredrickson Middle Archaic originates around 5000 B.P. (3050 B.C.) (1974).

- Dividing the Upper Archaic to include an Upper Archaic-Emergent transition period.

- Dividing the Emergent period into a Lower and an Upper Emergent period.

Prehistoric components from sites investigated in the Proposed Project area include one from the Lower Archaic, four from the Middle Archaic, six from the Upper Archaic, seven from the Upper Archaic-Emergent transition, and six from the Emergent.

Lower Archaic Period

The earliest occupations during the Lower Archaic period are characterized by high residential mobility evidenced by short-term occupation of sites. Milliken et al. (2007) refer to this as a generalized mobile forager pattern. Artifacts characteristic of this period include millingslabs and handstones for processing plant resources such as seeds and nuts, and wide-stemmed projectile

points. The radiocarbon date of 7920 cal B.C. represents the earliest date for cultural deposits from this period in the Kellogg Creek valley, obtained from a discrete charcoal concentration beneath an inverted millingslab at CA-CCO-696. The deposit lies at a depth of between 390 and 415 centimeters (Price et al. 2008).

Other characteristics of the Lower Archaic period include the importation of obsidian from the North Coast Ranges and the preference for a tightly flexed burial position. CA-CCO-696 yielded a tightly flexed burial at a depth of 325 centimeters, radiocarbon-dated to 5490 cal B.C. A few hundred meters from CA-CCO-696, the oldest documented grave in the Kellogg Creek valley was recovered from CA-CCO-637, radiocarbon-dated to 6570 cal B.C. (Meyer and Rosenthal 1998).

Middle Archaic Period

During the Middle Archaic period, residential mobility had decreased and base camps were established. Groundstone mortars and pestles replaced handstones and millingslabs by 4000 cal B.C. (Milliken et al. 2007). A wooden mortar was recovered with a groundstone pestle at CA-CCO-637, radiocarbon-dated to 3800 cal B.C. (Meyer and Rosenthal 1997). A groundstone mortar was recovered in association with deposits containing the remains of acorns and wild cucumber, dating to at least 5,700 years ago, at CA-CCO-696 (Rosenthal and Meyer 2004; Wohlgemuth 2004). In addition to acorns, camp residents ground manzanita seeds and grey pine nuts. Despite the shift in plant resource processing tools, there is no documented change in associated floral assemblages throughout the Archaic period (Meyer and Rosenthal 1997). During the Middle Archaic period, burial positions became more variable, ranging from flexed to extended positions. The first cut shell beads are found in mortuary contexts. Obsidian was obtained from distant sources (Price et al. 2008).

Upper Archaic Period

During the Upper Archaic period, residential mobility decreased and fixed villages were established. Plant resources from both the uplands and grassland-savanna were gathered, with an increased use of small seeds, but a continued preference for acorns. Bedrock milling stations, characterized by mortar cups ground into boulders and bedrock outcrops, first appeared between 1600 and 1300 B.P. (A.D. 350 to 650), based on stratigraphic evidence (Meyer and Rosenthal 1997). Bedrock milling stations are difficult to date because the mortars in the bedrock outcrops are only rarely found in stratigraphic association with intact midden containing datable evidence.

The Upper Archaic period burial customs once again show a preference for flexed burials. A difference in social status has been inferred from the differential distribution of uniformly made shell beads and ornaments in mortuary contexts. The shell also indicates the continuing importance of trade and exchange (Price et al. 2008).

Upper Archaic/Emergent Period Transition

During the Upper Archaic-Emergent period transition, there was a shift in burial practices and land-use patterns. Bedrock milling stations offer tangible evidence that more locations in the valley were utilized, but in contrast to the preceding period, occupations were brief and were probably associated with resource acquisition and processing. Occupation of the valley was more varied, including shorter-term use of both the lowland and the upland, where bedrock milling

stations were often located. Burial customs shifted once again to a preference for extended positions (Meyer and Rosenthal 1997). Obsidian use increased from earlier periods, but other exchange items were absent.

Emergent Period

By the Emergent period, fixed villages were once again established in the lowlands and bedrock milling stations continued to be used for bulk processing of grassland-savanna small seed resources and upland nut and berry crops. Obsidian use increased, inferred by the importation of obsidian cobbles and minimally modified flake blanks, exclusively from Napa Valley sources (Meyer and Rosenthal 1997). Milliken et al. (2007) note the introduction of the bow and arrow at the beginning of this period. The people, traditions, and culture of the Emergent Period were most likely those encountered by the earliest European visitors to the area in the second half of the 18th century (Price et al. 2008).

5.18.1.3.2 Ethnography

At the time of European contact, the proposed API/APE was within the territory of the Patwin, a southern Wintun linguistic group (Kroeber 1925, 1930; Barrette 1908), and the Ompin, Bay Miwok, a western Utian linguistic group. Two analytical zones immediately surround Suisun Marsh—the San Francisco Bay Area (Bay Miwok and Ohlone) and Middle Sacramento Valley (Patwin). Pre-mission populations in these regions were estimated as 2.1 to 4.0 persons per square mile in lands southeast of the marsh (Bay Miwok), increasing to 4.1 to 8.0 to the west and north (Meyer et al. 2013). Modern representatives of the Bay Miwok, Ohlone, and Patwin heritages are still present in the area. For a list of contacts from these tribes see Appendix C of Attachment 5.5-A: Cultural Resources Technical Report.

The Patwin People

The Patwin comprise the southern branch of the Wintun people in Northern California who were native inhabitants of California since approximately A.D. 500 (Golla 2011), The extent of the territory they occupied included the southwest portion of the Sacramento Valley, from the lower hills of the eastern North Coast Ranges to the Sacramento River, from Princeton south to San Pablo and Suisun Bays and into Napa Valley as far north as Calistoga. Kroeber (1970) puts the 1770 population of the Wintun, including the Patwin, Nomlaki, and Wintu proper, at 12,000 individuals. Kroeber noted that there were permanent habitation sites of the Patwin along both banks of the Sacramento River, where small knolls were sufficient to protect the inhabitants from severe winters. Patwin were also commonly found along seasonal streams and springs in the foothill regions fronting the western margin of the Sacramento Valley. Many of these have been documented for the area between Knights Landing and Colusa far north of the Project area (Heizer and Hester 1970). One important Patwin village was Yulyul, the main village of the Suisun Patwin people of the Suisun Bay region is believed to be where Rockville is located today northwest of the Project area (Milliken 1995). In the late 1790s, when Patwin were first taken as converts to Mission Dolores in San Francisco and Mission San Jose. Sam Yeto, later baptized as Chief Solano, is described as the principal Suisun Patwin chief whose authority extended over an extensive area reaching from Petaluma Creek to the Sacramento River. Chief Solano lived at a Patwin village just south of Rockville. In the 1840s, he received the Suisun land grant, extending east from Rockville to Fairfield, from the Mexican government (Solano County 2023). Another

village site, Tolenas, was identified by Kroeber about 15 miles northwest of the Proposed Project site (Johnson 1978).

The Patwin were organized into a principal village and a few satellite settlements. These groups were small, autonomous, and sometimes bounded by the limits of a small drainage. Each group had a head chief, and each village had a chief who administered its economic and ceremonial activities. The position of chief was usually inherited through the male line, but village elders occasionally chose some chiefs. McKern (1922) presented Patwin social structure in terms of three systems: the patrilineal family, the family social group, and the household unit.

The patrilineal family and descent were important features of Patwin social life, and the authority bestowed on the headman of each patriarchal family was undisputed, except in matters of tribal authority. The family social group is a larger unit that includes the husbands of female patrilineal family members and is unified by the authority of the family headman. Matrilocal residence was customary among the Patwin, and husbands routinely remained with their wife's families at least until they acquired enough wealth to establish an independent household (Kroeber 1932, 1970; McKern 1922, 1923).

Patwin subsistence relied on hunting, fishing, and gathering a wide variety of plant resources that were within their territory. Acorns were a major part of their diet and were obtained from hill and mountain oaks communally owned by the tribelet. Other easily gathered resources included blackberries, elderberries, wild grapes, new tule shoots, roots and bulbs, honey, salt (acquired from burning salt grass), and tobacco (Kroeber 1970). Kroeber's informants, however, did not report familiarity with many plants (e.g., buckeye, hazelnut, manzanita, etc.) that are dietary staples among other Native American groups.

Ethnographic records indicate that large game (e.g., deer, tule elk, antelope) were captured using nets or were shot using bows and arrows. Kroeber reports that two men would hold a wide meshed net while other hunters would drive deer into it, and waterfowl (e.g., ducks, geese, mudhens, quail) were also captured using nets. Fish were also a prime resource, and certain fishing sites were privately owned. Fish (e.g., salmon, sturgeon, perch, chub, sucker, hardhead, pike, trout) and other riverine resources (e.g., turtles and mussels) were caught with bone fishhooks, nets, seines, and weirs. Food resources were generally stored in bins and granaries, which were made of sticks set into the ground and were roofed with tules.

The Patwin manufactured a variety of utilitarian and ceremonial/luxury items, including baskets, stone tools, mortars and pestles, shell beads, and clothing. Coiled and twined baskets of willow and split tule were used for various purposes, including food collection, preparation, serving and storage; use as baby carriers; and for use as grave goods that were interred with the dead. A variety of tools (i.e., projectile points, bifaces, drills, scrapers, and knives) were manufactured from obsidian, chert, and basalt for both utilitarian (e.g., skinning and butchering) and ceremonial (e.g., burial accompaniment) purposes. Pestles and mortars made of oak and stone were used to process both plant and animal resources. Shell beads were also manufactured for personal adornment and as a medium of exchange. Clothing was generally minimal, and, "men went without any covering, women wore skirts or aprons of tule or shredded bark" (Kroeber 1925).

The Patwin traded for various commodities and subsistence resources using clamshell disc beads as a medium of exchange. Kroeber referred to Patwin territory as a center for several religious sects among groups of central California Native Americans. These sects were generally based on the organization of male secret societies and are characterized by Kuksu or "bighead" dances. Kuksu emphasized curing and shamanistic functions, and its ceremonies generally consisted of impersonating spirits who journeyed from their home to a village, blessed the village, and then returned home (Kroeber 1925).

The Miwok People

The Ompin group of Bay Miwok are associated with the eastern and southeastern Suisan Marsh edges, where the San Joaquin and Sacramento rivers enter the Suisun Bay (Meyer et al. 2013). Within the Bay Miwok grouping were the Saklan, Chupan, Wolwun, Julpun, and Ompin (Beeler 1955; Bennyhoff 1961). Archaeological and linguistic data support the assertion that the Miwok had arrived in the Diablo and Delta area before A.D. 1, displacing the earlier Hokan-speaking people that lived in the region (Wiberg 2010).

The Bay Miwok were hunter-gatherers, taking advantage of the abundant natural resources in the Delta and alluvial plains (Levy 1978). This lush environment was able to sustain a relatively dense population despite the lack of agriculture. The Delta marshland was very productive as were the Central Valley grasslands. Less productive portions of the regions included the uplands, which were able to support a mixture of oak and conifer trees (Wiberg 2010).

Like many other California groups, acorns were a staple carbohydrate of Bay Miwok foodways. In addition to this, however, a variety of flora and fauna were available for foraging and hunting. These included "several types of berries, clover, wild onions, and carrots, mammals, fish, reptiles, shellfish, and insects" (Wiberg 2011: 14). Vegetal resources also provided the material for cordage and weaving baskets. Baskets were used for cooking, as utensils, storage containers, water jugs, and as trays for leaching and drying acorn meal (Kroeber 1925: 467).

Importantly, the Bay Miwok were not passively acquiring their subsistence from the environment. They were, in fact, very active in managing and improving their environment through fire. By burning grass and brush annually, they were able to be in better control of their natural resources. Their foraging for deer and rabbits was improved by eliminating much of the area in which they would hide. Periodic burning also kept them safe from predators and neighbors and improved the land's productivity (Wiberg 2010).

The Bay Miwok were organized into "tribelets," which were, "small independent group[s] of usually related intermarried families occupying a specific territory and speaking the same language or dialect" (Wiberg 2010: 22). Notably, a great diversity of languages was present in contact-period California, with some dialects only spoken by very small groups. These groups were not isolated; however, as trade and marriage enabled tribelets to access resources they otherwise would not have accessed. Other aspects of social life that would bring people together include regional festivals and religious dances. The division of labor within California tribelets usually distinguished between women's work in food harvesting, preparation, weaving, and childrearing, and men's work in hunting, fishing, trade, warfare, and the training of older sons.

When the Spanish arrived, trade patterns that were thousands of years old were in place. Archaeological evidence suggests that these trade patterns brought goods from as far as a few hundred miles away based on the sourcing of obsidian artifacts. Mollusk shell beads and ornaments, "evolved through many different and definable types through the millennia," which allows archaeologists to both estimate a relative date for a site and the social and cultural position of the people who once lived there (Wiberg 2011: 15).

The territory of the Saklan was, "the interior valleys from Lafayette to Walnut Creek and Danville" (Cook 1957: 147). Although the central village may have been near modern Walnut Creek, "at least two smaller, subsidiary Saklan settlements were known to exist" at the time of Spanish colonization (Fredrickson 1968). The location of these settlements is currently unknown. Although Spanish observations suggest that total Saklan population in the early nineteenth century was between 100 and 300 people (Fredrickson 1968), this number may have been much higher. Based on the group's absorption of 40 people lost to missionization between 1794 and 1798, as well as the conversion of others and attrition due to disease and food supply inconsistencies, Cook (1957: 143, 147) suggests that the preconquest population must have reached, "at least 300 and very likely was much greater."

More comprehensive ethnographic and archaeological summaries of the Saklan and their neighbors in what is today Contra Costa County may be found in The Handbook of North American Indians, Volume 8: California (Levy 1978: 398-413), Handbook of California Indians (Kroeber 1925: 442-461), and California Archaeology (Moratto 1984).

5.18.1.3.3 History

The history of northern California, Solano County, and the proposed API/APE, in particular, can be divided into several periods of influence to establish a historic context to assess the potential significance of historic sites in the proposed API/APE. Due to its location, approximately 40 miles northeast of San Francisco, the proposed API/APE was largely isolated from the Spanish and Mexican periods of California. Therefore, events associated with the Spanish and Mexican periods and cultural remains from those periods are not expected to be reflected in the proposed API/APE, but they are discussed briefly as a point of reference.

Spanish Era (1772-1822)

The earliest historical accounts of the area come from the Spanish explorers who ventured into the area east of the San Francisco Bay Area in the late 18th century. In 1775, when Captain Juan Manuel Ayala's expedition explored San Francisco Bay, some of his men may have ventured up the Sacramento and San Joaquin rivers during three explorations of the bay that yielded the first accurate maps of San Francisco Bay (Kamiya 2014). In 1776, the Anza-Font expedition traveled along the southern shore of Suisun Bay until reaching Antioch, where they noticed numerous campsites before turning southeast in an attempt to cross the tule swamps (Cook 1957). There is no evidence that the Spanish explored north of the river at the site of the Proposed Project during this period, but they must have passed within a few miles of it on the southern side of the river (Farris et al. 1988). No documented Spanish settlements or structures are located in the Proposed Project area.

At the time of the Spanish arrival, Solano County was home to the Patwin Indians. Some of their village places have survived phonetically in such modern places as Suisun, Soscol, Ulatis, and Putah (Solano County 2023).

Mexican Era (1822-1848)

Under the Spanish, the missions controlled the land. After Mexico seceded from Spain in 1821, land was granted to private citizens, a practice that increased significantly after the 1833 act of the Mexican legislature that established the secularization of the missions (Journal of American History [JAH] 2005). By 1845, the last of the mission land holdings were relinquished, opening the way for the large ranchos common to California in the mid-1800s. Predominant land use on the ranchos was the raising of livestock and ranching. The proposed API/APE straddles two Mexican-era land grants, or ranchos, within Solano County and Contra Costa County.

The northern of these was the Rancho Ulpinos. It included 17,726 acres in southern Solano County, including what would become the cities and communities of Collinsville, Rio Vista, Newtown, Birds Landing, and Montezuma. This rancho includes two watercourses: the Sacramento River and the Estero Ulpinos. This rancho was given to John Bidwell in 1852 by Governor Manuel Micheltorena (Perez 1982; U.S. District Court [USDC] 1857).

The 1848 Treaty of Guadalupe Hidalgo that ceded California to the U.S. provided that the land grants would be honored. As required by the Land Act of 1851, a claim for Rancho Los Ulpinos was filed with the Public Land Commission in 1852, and the grant was patented to John Bidwell in 1866 (USDC 1857).

The other rancho in the proposed API/APE of the Proposed Project is the Rancho Los Medanos, immediately south of the Rancho Los Ulpinos. It is composed of 8,853 acres, including the watercourses of the San Joaquin River and the Suisan Bay, and covers the modern-day cities of Pittsburg and Antioch (Perez 1982).

The ranch was granted in 1835 to Jose Antonio Mesa and Jose Miquel Garcia. Mesa and Garcia sold the southern half of their rancho to Colonel Jonathan D. Stevenson in 1849 and the northern half to James Walsh, Michael Murray, and Ellen Fallon in 1850. There was confusion about the orientation of the grant; and in 1851, Stevenson arranged an exchange of deeds, whereby he received the western half of the rancho and Walsh, Murray, and Fallon received the eastern half (Supreme Court of California 1904).

As required by the Land Act of 1851, a claim for Rancho Los Medanos was filed with the Public Land Commission in 1852, and the grant was patented to Jonathan D. Stevenson et al. by 1862 (Hoffman 1862). No documented Mexican structures associated with these rancheros are documented in or near the Proposed Project area.

Historical Era (1848-Present)

Prior to the 20th century, the history of both Contra Costa and Solano counties was overwhelmingly ranching and farming in character (EDAW 2008). During Mexican occupation, and for some years after that, cattle raising was the principal industry (EDAW 2008).

In the late 1840s and 1850s, former gold seekers and pioneers began settling Contra Costa and Solano counties, where they raised livestock and cultivated fruit orchards, vineyards, wheat, barley, and oats (EDAW 2008). Produce and livestock were transported overland by wagons to the many sloughs along the river, and then shipped by water to waiting markets. In the late 19th century, the development of the railroads spurred the economy by allowing the shipment of local goods to East Coast markets, significantly bolstering economic development, agricultural production, and population growth (EDAW 2008).

Twelve townships were established in Solano County between 1850 and 1871. Although the largest towns were adjacent to San Pablo and Suisun Bays, most towns were situated at the ends of sloughs or channels that primarily ran through the eastern portion of the county, including the small town that became Collinsville. These earliest communities in Contra Costa County (i.e., Antioch, Pittsburg, and Walnut Creek) have grown into thriving cities and towns (McCullough 2022).

History of Pittsburg

Its earliest recorded history of the Pittsburg area dates to 1839 when the Mexican government granted nearly 9,000 acres of Rancho Los Medanos to brothers Jose Antonio Mesa and Miguel Jose Mesa Garcia. In 1849, the land was purchased by Colonel Jonathon Drake Stevenson and Dr. William C. Parker. The first streets were laid out by future U.S. Army General William Tecumseh Sherman (City of Pittsburg 2022).

The area soon became known as New York Landing, and by 1855 was a fishing village of approximately 500 residents. By the 1870s, the community thrived on fishing and canning industries, which would last for over 100 years.

Coal was discovered in the Mt. Diablo foothills of Contra Costa County and became one of the biggest industries in the county from the 1860s until the early 1900s (McCullough 2022). With the discovery of coal, the town of New York Landing became known as Black Diamond and shown on local maps for the first time in 1868 due to the influence of the Black Diamond Coal Company. Steam-powered engines moved coal cars down the tracks along present-day Railroad Avenue to the waterfront docks, terminating at the waterfront coaling station and offloaded to awaiting ships on the way to market. The boom ended in 1885, and the company moved to Washington state to work a new claim (City of Pittsburg 2022).

During the 1870s, commercial fishing became a lucrative endeavor. The Black Diamond Cannery opened at the foot of Los Medanos Street. By 1882, a network of 10 canneries formed along the Delta. An industry was born with fishermen, packing plants, boat builders, and the like dominating the local waterfront for the next 80 years. The town boasted the largest Delta fishing community in the state, made up primarily of Sicilian immigrants, the families of which have remained in the area for generations (City of Pittsburg 2022).

Charles Appleton Hooper, who became the local father of industry, was a wealthy lumber baron who purchased the Rancho Medanos land grant in 1900. He encouraged the city government to supply electricity to the town and the town incorporated as Black Diamond in 1903. A rubber works and a steel company were started along with a large foundry. Pittsburgh industry and

manufacturing created thousands of living wage jobs. In 1911, the city changed its name to Pittsburg because of the newly founded steel industry (City of Pittsburg 2022).

In 1942, Camp Stoneman was built as the main point of embarkation on the West Coast during World War II. It closed in 1954, and its property became the City of Pittsburg and was used for a school and commercial and residential development (Pittsburg Historical Museum 2024).

History of Collinsville

Early in 1846, Lansford W. Hastings acted as an agent responsible for finding a site for a Mormon colony and chose an area in today's southeastern Solano County on the Sacramento River near present-day Collinsville, The Mormon movement to California was part of a general exodus from the East and Midwest. The Mormons had been forced to leave their homes in Illinois and headed some place "beyond the Rocky Mountains." At the same time, those members of' the Church in the eastern states were directed to proceed by ship to a spot on the Pacific Coast (Baldridge 1956).

In 1846, 238 Mormon immigrants landed in San Francisco on a ship from New York as an initial attempt to establish a Mormon colony in Northern California (McPhate 2019). Within a year, they built 100 permanent structures in San Francisco, including the first bank, library, and English-speaking school. The group's leader, Sam Brannan, started the city's first newspaper, the California Star, and became its first millionaire. Other Mormons founded towns, pioneered farming, and became among the first gold miners (McPhate 2019). It was around this time that Hastings built a four-room adobe in anticipation of a large land grant from the Mexican government to accommodate the Mormon arrivals (Bowen 2000).

The event known as the Bear Flag Revolt changed Hastings's plans. In June 1846, 33 American immigrants rebelled against the Mexican government in the town of Sonoma because they had not been allowed to buy or rent land and had been threatened with expulsion. This short-lived rebellion added to the tension of the recent outbreak of the Mexican-American War (NPS 2022). In the wake of these hostilities, Hastings abandoned the adobe house, which remained unoccupied until 1852. After that, a series of owners lived in it until PG&E bought the land in 1964. The old, abandoned adobe still stands, but is rapidly deteriorating because of a lack of maintenance and a badly leaking roof (Bowen 2000).

The first permanent settler in Montezuma Township, as Collinsville was then called, was L.P. Marshall. He moved into the Hastings adobe, named it the "Montezuma House," and lived there for the next quarter of a century (Bowen 2000). In 1859, C.J. Collins settled on government land where Collinsville now stands. He surveyed the town plat and built a wharf and store (Bowen 2000).

By 1861, the Collinsville wharf was built, and the town applied for an official post office, allowing for better business and trade in the area (Supreme Court of California 1882). In 1861, George W. Miller was appointed the first postmaster. Collinsville soon became an important shipping port for hides and tallow (Bowen 2000).

The small fishing village was approved for a steam ferry in 1868 to travel between Collinsville, New York Landing, and Antioch. It soon became a major ferry stop for hides and tallow crossing

the Carquinez Strait while traveling to the cities farther south. In 1867, the town was purchased by S.C. Bradshaw, who renamed the town Newport and began selling some 29,000 lots, many of which were submerged at high tide. His scam failed, and the sheriff seized the town. The land was later sold to E.I. Upham, who returned the name Collinsville to the town in 1872 (Bowen 2000).

At one point, before the bridges were built, one of the passenger railroad lines between Sacramento and San Francisco passed through Collinsville. The train would unbuckle at Collinsville and be pulled across the Delta by barge (requiring several trips), and then be rebuckled on the other side at the foot of Railroad Avenue in Pittsburg to resume its trip to San Francisco.

By the 1870s, Collinsville had a large salmon cannery and hotels and stores that serviced its workers. When the cannery closed, Collinsville began declining; the population fell to just eight people and some 20 homes. Although the population has increased slightly since then, a fire in 2014 destroyed much of the town.

History of Railroads

In the late 1840s and 1850s, produce and livestock were transported overland by wagons to the many sloughs throughout the county, and then shipped by water to waiting markets. In 1868, with the completion of the California Pacific Railroad (Cal-P) through Solano County, the shipment of goods to East Coast markets was accelerated and expanded (EDAW 2008).

In 1913, the Oakland, Antioch, and Eastern Railway, a high-speed electric interurban railway, opened its 93-mile route from San Francisco to Sacramento through largely unpopulated parts of southern Solano County (Boehle 2013). In 1928, the Sacramento Northern Railway purchased the railway, but the Depression and the popularity of the automobile contributed to the end of passenger service in 1940; by 1987, the railway had been abandoned (EDAW 2008).

The coming of the railroads in the latter part of the 1800s and the early 1900s to Contra Costa County made the industrial development that was occurring in Pittsburg even more attractive (McCullough 2022). The Central Pacific Railroad (CP) was chartered in 1862 by Congress to build a railroad eastward from Sacramento to complete the western part of the first Transcontinental Railroad in North America. The CP was the first transcontinental railroad to pass through present-day Pittsburg when the tracks were built in 1878 (Pittsburg Historical Museum 2024).

The Cornwall railroad station served passengers, as well as freight. Cornwall was a small enclave separate from the village of Black Diamond, but would eventually be annexed into Pittsburg in 1911. Black Diamond was a commercial fishing port situated on Suisun Bay, and the railroad made possible rail shipping of fish, which up to that point had been shipped to market (Pittsburg Historical Museum 2024).

The Black Diamond Railroad (BD) was active at this time and was a short rail line shuttling coal from the local mines in the foothills to the waterfront Black Diamond coaling station. Where the CP crossed the BD, a train trestle and large earthen embankment was built to span the CP line and allow for uninterrupted service by both railroad lines (Pittsburg Historical Museum 2024).

In 1888, the Southern Pacific (SP) bought out the Cal-P. In turn, the Union Pacific (UP) merged with the SP in 1996 and assumed the Union Pacific name. Today, manufactured goods from local and area industry are what can be seen along the local rails and switchyards. The UP mainline is known as the Mococo Line and is under the UP Tracy Subdivision of the railroad network (Pittsburg Historical Museum 2024).

History of the Transmission Lines

PG&E was formed in 1905 by the merger of the San Francisco Gas Company and the California Electric Company. The need for transmission lines in Northern California began during the 1920s, when the demand for electricity grew in relationship to commercial and residential development. Towers that pre-date World War II still exist in the major cross-tie electrical grids linking various power plants and substations. These early major electrical transmission lines remain critical to providing a reliable form of electrical power to much of California. The post-World War II period of electrical transmission generation and development was spurred on by rapid population growth and increasing demand from commercial and residential customers (Coleman 1952).

PG&E's Pittsburg-Tesla 230 kV Transmission Line was not the first electrical high-lead tie line built in the state nor in Contra Costa County or the East Bay Area, which witnessed electrical transmission tower development dating to the 1920s (Supernowicz 2017). PG&E's Pittsburg-Tesla 230 kV Transmission Line, which runs a distance of approximately 31 miles from City of Pittsburg through unincorporated portions of Contra Costa and Alameda counties, was constructed as part of this expansion. The Pittsburg-Tesla 230 kV Transmission Line (running from PG&E's existing Pittsburg substation to PG&E's existing Tesla substation) was constructed in 1959-1960 and consists of 147 towers. It is considered by PG&E as a critical supply line for Contra Costa and Alameda counties (Lang 2008). The transmission towers of the 1960s were made of steel and riveted together with lattice and bents for support. They have not changed much since the 1920s. Most of the existing steel high-lead electrical transmission towers in California date to after World War II. Transmission lines were attached to the top of the tower along a slightly arched or V-shaped riveted steel lattice brace. In an electrical power grid or transmission system, the electricity first went to a transformer at the power plant that boosted the voltage. The long, thick cables of transmission lines were made of copper or aluminum because they have a low resistance (Supernowicz 2017).

5.18.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.18.2.1 Regulatory Setting

5.18.2.1.1 Federal

National Historic Preservation Act

Authorized by the NHPA and administrated by the National Park Service (NPS), the NRHP is the official list of the nation's historic places deemed worthy of preservation, and it includes districts, sites, buildings, structures, and objects that are significant in American history, prehistory, architecture, archaeology, engineering, and culture. To be eligible for listing in the

NRHP, a property must retain sufficient integrity to convey its significance and meet at least one of the following evaluation criteria:

A. Is associated with events that have made a significant contribution to the broad patterns of our history; or

B. Is associated with the lives of significant persons in our past; or

C. Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or

D. Has yielded, or may be likely to yield, information important in history or prehistory.

Should a cultural resource be determined eligible for NRHP listing, it is considered a "historic property" under Title 36, Section 60.4 of the CFR. Properties listed or formally determined eligible for listing in the NRHP are automatically listed in the CRHR (Public Resources Code [PRC] Section 5024.1[d][1]).

The NPS publication, *How to Apply the National Register Criteria for Evaluation*, National Register Bulletin 15, establishes how to evaluate the integrity of a historic property and defines integrity as "the ability of a property to convey its significance" (NPS 1997). The evaluation of integrity must be grounded in an understanding of a historic property's physical features and how they relate to the aspects of integrity. Determining which of these aspects are most important to a property requires knowing why and at what level (i.e., local, state, or national) it is significant and its period of significance. Although "rarity" of property type is not an aspect of significance, it is considered when assessing integrity.

To retain historic integrity, a property must possess several, and usually most, aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. These seven aspects of integrity are defined as follows:

1. Location is the place where the historic property was constructed or the place where the historic event occurred.

2. Design is the combination of elements that create the form, plan, space, structure, and style of a property.

3. Setting is the physical environment of a historic property and refers to the character of the site and the relationship to surrounding features and open space. Setting often refers to the basic physical conditions under which a property was built and the functions it was intended to serve. These features can be either natural or man-made, including vegetation, paths, fences, and relationships between other features or open space.

4. Materials are the physical elements that were combined or deposited during a particular period or time and in a particular pattern or configuration to form a historic property.

5. Workmanship is the physical evidence of crafts of a particular culture or people during any given period of history or prehistory and can be applied to the property as a whole or to individual components.

6. Feeling is a property's expression of the aesthetic or historic sense of a particular period. It results from the presence of physical features that, when taken together, convey the property's historic character.

7. Association is the direct link between the important historic event or person and a historic property.

Abandoned Shipwreck Act

The Abandoned Shipwreck Act (ASA) was signed into law on April 28, 1988. The purpose of the ASA is to protect historic shipwrecks in the U.S. from treasure hunters and unauthorized salvagers. The ASA is found in public law at P. L. 100–298, §2, Apr. 28, 1988, 102 Stat. and in Title 43, Sections 2101-2106 et seq. of the U.S. Code.

The ASA establishes federal government ownership over most abandoned shipwrecks in the nation's rivers and lakes, and in the ocean to a distance of 3 miles offshore (NPS 2023). Under the ASA, the U.S. government asserted title to three categories of abandoned shipwrecks:

- Abandoned shipwrecks embedded in a state's submerged lands;
- Abandoned shipwrecks embedded in coralline formations protected by a state on its submerged lands; and
- Abandoned shipwrecks located on a state's submerged lands and included in or determined eligible for inclusion in the NRHP.

Upon asserting title, the federal government transferred its title to the government entity that owned the submerged lands containing the shipwrecks. As a result, state governments have title to shipwrecks located on state lands, the federal government has title to shipwrecks located on federal lands, and Native American tribes have title to shipwrecks located on tribal lands. The federal government, however, continues to hold title to sunken U.S. warships and other shipwrecks entitled to sovereign immunity, no matter where the vessels are located. Such vessels are not affected by the statute (NPS 2023).

The ASA stipulates that the laws of salvage and finds do not apply to abandoned shipwrecks claimed by the government under the ASA. It removes those shipwrecks from the jurisdiction of Federal Admiralty Court, such that the wrecks, their cargo, and content are no longer treated as commodities lost at sea and in need of salvage. For archaeology, it means that shipwrecks are treated as historically and scientifically valuable (NPS 2023).

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979 provides for the protection of archaeological resources more than 100 years old that occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from

the responsible federal agency. This process includes a 30-day notification to interested persons, including Native American tribes, by the agency to receive comments regarding the intended issuing of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to ARPA. The law also provides for curation of archaeological artifacts, ecofacts, notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided for in Title 36, Part 79 of the CFR.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) requires federal agencies and institutions that receive federal funds (including museums, universities, state agencies, and local governments) to repatriate or transfer Native American human remains and other cultural items to the appropriate parties by

- Consulting with lineal descendants, Native American tribes, and Native Hawaiian organizations on Native American human remains and other cultural items;
- Protecting and planning for Native American human remains and other cultural items that may be removed from federal or tribal lands;
- Identifying and reporting all Native American human remains and other cultural items in inventories and summaries of holdings or collections; and
- Giving notice prior to repatriating or transferring human remains and other cultural items.

NAGPRA recognizes the rights of lineal descendants, Native American tribes, and Native Hawaiian organizations in Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony. The Secretary of the Interior is responsible for promulgating regulations to carry out the provisions of the Act and delegated this authority to the Assistant Secretary. Since 1993, the Department of the Interior has published rules under the title "Native American Graves Protection and Repatriation Act Regulations," including the following:

- RIN 1024-AC07, 1993 Proposed Rule (58 Federal Register [FR] 31122, May 28, 1993) and 1995 Final Rule (60 FR 62134, December 4, 1995);

- RIN 1024-AC84, Civil Penalties Final Rule (68 FR 16354, April 3, 2003) and Future Applicability Final Rule (72 FR 13184, March 21, 2007);

- RIN 1024-AD68, 2007 Proposed Rule Disposition of Culturally Unidentifiable Human Remains (72 FR 58582, October 16, 2007) and 2010 Final Rule Disposition of Culturally Unidentifiable Human Remains (75 FR 12378, March 15, 2010);

- RIN 1024-AE00, Disposition of Unclaimed Cultural Items Final Rule (80 FR 68465, November 5, 2015); and

- RIN 1024-AE19. to clarify and improve upon the systematic processes for disposition or repatriation of Native American human remains and cultural items (87 FR 63202).

This final rule revises and replaces definitions and procedures for lineal descendants, Native American tribes, Native Hawaiian organizations, museums, and federal agencies to implement NAGPRA. These regulations clarify and improve upon the systematic processes for the disposition or repatriation of Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony. These regulations provide a step-by-step roadmap with specific timelines for museums and federal agencies to facilitate disposition or repatriation. Throughout these systematic processes, museums, and federal agencies must defer to the Native American traditional knowledge of lineal descendants, Native American tribes, and Native Hawaiian organizations. This rule went into effect January 12, 2024.

5.18.2.1.2 State

California Environmental Quality Act

CEQA requires the lead agency to consider the impacts of a project on two categories of cultural resources: historical resources (Section 15064.5[b]) and unique archaeological resources (Section 15064.5[c] and PRC Section 21083.2). CEQA also requires the lead agency to consider the impacts of a project on TCRs (PRC Section 21074). CEQA and other California laws also set forth special rules for dealing with any human remains that might be encountered during construction. Pursuant to PRC Sections 5097.98(b)(1)(A) and 5097.98 (d)(2), this includes consultation with the Most Likely Descendant (MLD) for the nondestructive removal and analysis of any items identified as being associated with Native American human remains.

As defined in Appendix G of the 2019 CEQA Statute & Guidelines, project impacts to cultural resources would be considered significant if it was determined that a project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;
- Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a TCR as defined in PRC Section 21074.

Historical or archaeological resources include the following.

- A resource listed in or determined to be eligible by the State Historical Resources Commission (SHRC) for listing in the CRHR;
- A resource included in a local register of historical resources; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant.

The SHRC has also developed criteria to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. The CRHR identifies historical resources (i.e., cultural resources that are listed in or eligible for listing in the CRHR for state and local planning purposes), determines eligibility for state historic preservation grant funding, and affords certain protections under CEQA. Generally, a resource is considered significant if it is 45 years old or older and possesses

integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, it must meet at least one of the following criteria for listing in the CRHR:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- It is associated with the lives of persons important in our past;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- It has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources deemed "historically significant," then project alternatives and mitigation measures must be considered. Substantial adverse change in the significance of a resource includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance would be materially impaired. The significance of a historical or archaeological resource is materially impaired if a project demolishes or materially alters in an adverse manner those physical characteristics of the resource that justify its inclusion in, or eligibility for inclusion in, the CRHR or other local register of historic resources.

CEQA also applies to effects on archaeological sites that do not meet the criteria for historical resources but do meet the definition of a "unique archaeological resource" (PRC Section 21083[g]). A unique archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- It contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type; or

It is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code (HSC), Division 7, Part 2, Chapter 5 (Sections 8010 through 8030). Several provisions of the PRC also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the HSC states that any person who knowingly mutilates or disinters, wantonly

disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in PRC Section 5097.99. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment. PRC Chapter 1.7, Section 5097.5/5097.9 defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor. Specifically, a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands**.**

Assembly Bill 52

Signed into law in September 2014, California AB 52 created a new class of resources—TCRs—for consideration under CEQA. TCRs may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the CRHR. AB 52 requires that the lead CEQA agency must consult with California Native American tribes that have requested consultation for projects that may affect TCRs. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause a substantial adverse change to a TCR constitutes a significant effect on the environment unless mitigation reduces such effects to a less-than-significant level.

5.18.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but county regulations are not applicable as Contra Costa, Sacramento, and Solano counties do not have jurisdiction over the Proposed Project. Because the CPUC has exclusive jurisdiction over the Proposed Project siting, design, and construction, the Proposed Project is not subject to local regulations or discretionary permits. This section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Solano County General Plan includes the following relevant cultural resources goals:

- Goal: Collaboration with Native American groups to protect traditional cultural places and sacred spaces in the context of land use decisions.
- Goal: Leveraging the county's historic capital to drive economic development, especially tourism.

The policies related to archaeological and cultural resources outlined by the Solano County General Plan include the following:

- Policy RS.P-38: Identify and preserve important prehistoric and historic structures, features, and communities.
- Policy RS.P-39: Tie historic preservation efforts to the County's economic development pursuits, particularly those relating to tourism.
- Policy RS.P-40: Consult with Native American governments to identify and consider Native American cultural places in land use planning.

Sacramento County General Plan

The Sacramento County General Plan includes the following relevant cultural resources goal and policies:

- Goal: Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socioeconomical importance.

- Policy CO-150: Utilize local, state and national resources, such as the NCIC, to assist in determining the need for a cultural resources survey during project review.

- Policy CO-151: Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.

- Policy CO-152: Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

- Policy CO-153: Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission in developing recommendations.

- Policy CO-154: Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

- Policy CO-155: Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological

significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

- Policy CO-156: The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

- Policy CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

- Policy CO-158: As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

Contra Costa County General Plan

The Contra Costa County General Plan includes the following relevant cultural resources goal and policies:

- Goal 9-G: To identify and preserve important archaeological and historic resources within the county.

- Policy 9-28: Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

- Policy 9-30: Development surrounding areas of historic significance shall have compatible and high-quality design in order to protect and enhance the historic quality of the area.

5.18.3 Impact Questions

5.18.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For TCRs, the CEQA Environmental Checklist asks if the Proposed Project would:

- Cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

  - Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k); or

  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC

Section 50421.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

5.18.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for TCRs.

5.18.4 Impact Analysis

5.18.4.1 Tribal Cultural Resources Impact Analysis

5.18.4.1.1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. No recorded TCRs are located within the proposed API/APE. A TCR could be damaged or destroyed by ground-disturbing activities in the event that an unknown TCR is located within an area subject to disturbance. To address this potential impact, a Worker's Environmental Awareness Program (WEAP) would be developed and construction personnel would be trained on the recognition of possible buried TCRs during construction, in accordance with applicant-proposed measure (APM) CUL-1.

Per APM CUL-2, cultural resource surveys would be performed prior to construction for any LSPGC Proposed Project component areas that were not previously surveyed, which may include areas where landowner permission was not obtained, new or modified staging areas, pull sites, or other work areas. Where operationally feasible, all TCRs would be protected from direct impacts by redesign of the LSPGC Proposed Project components (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas) should they be found to conflict with the footprint of the LSPGC Proposed Project components.

In the event that previously unidentified TCRs are uncovered during construction of the LSPGC Proposed Project components, the qualified archaeologist would inspect the discovery and determine whether further investigation would be required in accordance with APM CUL-3. If the unearthed resource is prehistoric or Native American in nature, a Native American representative would develop additional treatment measures, such as data recovery consistent with CEQA Guidelines 15126.4(b)(3)(C-D).

Additionally, if human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease within a 50-foot radius of the remains and the appropriate cultural resource staff and construction supervisors would be notified, as required by

APM CUL-3. Further, the county coroner would then be contacted in accordance with CEQA Guidelines Section 15064.5(d) and (e), HSC Section 7050.5, and PRC Sections 5097.98 and 5097.99. The coroner would have 2 working days to examine the remains after being notified. If the remains are found in an area under federal jurisdiction and the coroner determines the remains are Native American, or if Native American cultural items pursuant to NAGPRA are uncovered, the remains would be treated in accordance with the provisions of NAGPRA (43 CFR 10) and ARPA (43 CFR 7). If the remains are not on federal land and the coroner determines that the remains are Native American, the coroner would have 24 hours to notify the NAHC of the determination. Under PRC Section 5097.98, the NAHC would be required to identify an MLD, notify that person, and request that they inspect the remains and make recommendations for treatment and/or disposition. The MLD would have 48 hours after being granted site access to inspect the find and make recommendations for treatment of the human remains. Work would be suspended in the area of the find until the MLD and landowner confer on the mitigation and treatment of the human remains. However, the human remains and associated burial items would be reburied, with appropriate dignity, on the property in a location not subject to further subsurface disturbance if one of the following occurs:

- The NAHC is unable to identify an MLD.
- The MLD fails to make a recommendation.
- The recommendation of the MLD is rejected and the mediation provided in PRC Section 5097.94(k) fails to provide measures acceptable to the landowner.

This procedure would ensure that the remains are treated in accordance with Section 15064.5(d) and (e) of the CEQA Guidelines, HSC Section 7050.5, and PRC Sections 5097.98 and 5097.99; and impacts to human remains during construction would be reduced to a less-than-significant level.

With implementation of APMs CUL-1 through CUL-3, no substantial adverse changes related to a TCR are anticipated and impacts to TCRs as defined in PRC Section 21074 would be less than significant.

PG&E Components

Less-than-Significant Impact. No recorded TCRs are located within the proposed API/APE. A TCR could be damaged or destroyed by ground-disturbing activities in the event that an unknown TCR is located within an area subject to disturbance. To address this potential impact, a WEAP would be prepared to train construction personnel on the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) during construction, in accordance with PG&E's Construction Measure (CM) CUL-1. The WEAP would provide construction personnel with instruction on types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the TCRs or fossils could be preserved; procedures that should be followed in the event of a discovery of a TCR or human remains; and penalties for disturbing TCRs.

Per CM CUL-2, known TCR sites would be marked with flagging tape, safety fencing, and/or signage designating it as an "environmentally sensitive area" to ensure that PG&E construction

crews and heavy equipment would not intrude on these sites during construction. If sites cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level.

During construction, CM CUL-3 would be implemented so that, in the event that previously unidentified cultural resources are uncovered during excavation, work would stop in that area and within 50 feet of the find until a cultural resource specialist (CRS) or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies.

Additionally, if human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease within a 50-foot radius of the remains and the CRS or designated representative would be notified, as required by CM CUL-3. If the remains are human, the CRS would immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, HSC Section 7050.5 and PRC Section 5097.98 require that the CRS must contact the NAHC within 24 hours. The NAHC, as required by PRC Section 5097.98, would determine and notify the MLD.

With implementation of CMs CUL-1 through CUL-3, no substantial adverse changes related to a TCR are anticipated and impacts to TCRs as defined in PRC Section 21074 would be less than significant.

5.18.4.1.2 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As described in response to the previous question, impacts to potential TCRs, which could occur from ground disturbance, would be reduced to a less-than-significant level through implementation of APMs CUL-1 through CUL-3.

PG&E Components

Less-than-Significant Impact. As described in response to the previous question, impacts to potential TCRs, which could occur from ground disturbance, would be reduced to a less-than-significant level through implementation of CMs CUL-1 through CUL-3.

5.18.4.2 Information Provided by the Tribes

According to written correspondence with THPO Yvonne Perkins, the Wintun Nation has a cultural interest and authority in the proposed API/APE. Perkins requested formal consultation between the lead agency of the Proposed Project and the Wintun Cultural Resources Department. Neither LSPGC nor PG&E is the CEQA Lead Agency responsible for tribal consultations under PRC Section 21080.3.1. The CPUC would perform additional NAHC and tribal outreach activities in accordance with AB 52 at a later date. However, with implementation of APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3, no substantial adverse changes related to a TCR are anticipated.

5.18.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures for TCRs.

5.18.6 Applicant-Proposed Measures

5.18.6.1 Tribal Cultural Resources Applicant-Proposed Measures

No additional APMs would be implemented for TCRs because impacts would be less than significant.

5.18.6.2 Cross-Referenced Applicant-Proposed Measures

The following cross-referenced APMs would be implemented for the LSPGC Proposed Project components:

- **APM CUL-1: Worker's Environmental Awareness Program.** In accordance with this measure, the Proposed Project's WEAP would include, at minimum:

  - Training on how to identify potential cultural resources and human remains during the construction process;
  - 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 Proposed Project;
  - A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and policies; and
  - A statement by the construction company or applicable employer agreeing to abide by the WEAP, and other applicable laws and regulations.

  The WEAP would be provided to all Proposed Project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker would be involved in ground-disturbing activities without having participated in the WEAP.

- **APM CUL-2: Avoid Environmentally Sensitive Areas.** Cultural resource surveys would be performed for any portion of the Proposed Project area not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys would be subject to a 50-foot buffer around the boundary of

each respective resource and designated as environmentally sensitive areas. Methods of environmentally sensitive area delineation may include, as applicable, flagging, rope, tape, or fencing. The environmentally sensitive areas should be clearly marked on all pertinent construction plans. Where operationally feasible, all NRHP- and CRHR-eligible resources would be protected from direct Proposed Project impacts by Proposed Project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources would be avoided by all Proposed Project construction and restoration activities, where feasible. If work within the 50-foot buffer cannot be avoided, then monitoring would be required.

- **APM CUL-3: Inadvertent Discoveries.** In the event that previously unidentified cultural resources are uncovered during implementation of the Proposed Project, all work within 50 feet of the discovery would be halted and redirected to another location. A qualified archaeologist(s) would inspect the discovery and determine whether further investigation is required. The qualifications of the archaeologist(s) would be approved by the CPUC and USACE. If the discovery can be avoided and no further impacts would occur, the resource would be documented on California Department of Parks and Recreation cultural resource records, and no further effort would be required. If the resource cannot be avoided and may be subject to further impact, the significance and NRHP and CRHR eligibility of the resource would be evaluated and, in consultation with the CPUC and USACE, appropriate treatment measures would be determined. All work would remain halted until a Secretary of the Interior-qualified archaeologist approves the treatment measures. Preservation in place would be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Section 15126.4(b)(3), if it is demonstrated that resources cannot feasibly be avoided, and if the unearthed resource is prehistoric or Native American in nature, a Native American representative, in consultation with the CPUC, would develop additional treatment measures, such as data recovery consistent with CEQA Guidelines 15126.4(b)(3)(C-D). Archaeological materials recovered during any investigation would be curated at an accredited curation facility or transferred to the appropriate tribal organization.

5.18.7 PG&E Construction Measures

5.18.7.1 Tribal Cultural Resources PG&E Construction Measures

No additional CMs would be implemented for TCRs because implementation of the CMs in Section 5.5 Cultural Resources would reduce impacts to less-than-significant levels.

5.18.7.2 Cross-Referenced PG&E Construction Measures

The following cross-referenced CMs would be implemented for the PG&E Proposed Project components:

- **CM CUL-1: Worker Awareness Training.** PG&E would provide environmental awareness training on archeological resources protection. This training may be administered by the PG&E CRS or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the project and would at minimum include: types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the cultural resources or

fossils could be preserved; procedures that should be followed in the event of a cultural resource or human remain discovery; and penalties for disturbing cultural resources.

- **CM CUL-2: Flag and Avoid Known Resources.** Sites would be marked with flagging tape, safety fencing, and/or sign designating it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment will not intrude on these sites during construction. At the discretion of the PG&E CRS, monitoring may be done in lieu of or in addition to flagging. If it is determined that the project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the NRHP/CRHR would be conducted. Should the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level would be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures would be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.

- **CM CUL-3: Unanticipated Cultural Resources Discoveries**

  a. Unanticipated Cultural Resources.

  If unanticipated cultural resources are inadvertently discovered during site preparation or construction activities, work would stop in that area and within 50 feet of the find until CRS or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the CRS's approval. PG&E would implement the CRS's or their designee's recommendations for treatment of discovered cultural resources.

  b. Human Remains.

  In the unlikely event that human remains or suspected human remains are uncovered during preconstruction testing or during construction, all work within 50 feet of the discovery would be halted and redirected to another location. The find would be secured, and the CRS or designated representative would be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the CRS would determine whether the find is an archaeological deposit and whether paragraph (a) of this CM should apply. If the remains are human, the cultural resources specialist would immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the cultural resources specialist contact the NAHC within 24 hours. The NAHC, as required by PRC Section 5097.98, would determine and notify the Most Likely Descendant.

5.18.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespan, California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to TRCs associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would be unlikely to impact any new TRCs not impacted by the Proposed Project. As such, the potential modification would not cause a substantial adverse change to a TRC, and no additional Mitigation Measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			✓	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			✓	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			✓	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			✓	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓
f) Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?			✓	

This section describes the existing utility services and infrastructure—including cable television and telephone, water treatment, sewer, and electricity services—in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) area and the potential impacts to utilities that may result during the construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.19.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated

community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line and connect to the proposed LSPGC Collinsville Substation. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.19.1.1 Utility Providers

5.19.1.1.1 Water

Land in the Proposed Project area is used for dry farming and grazing; therefore, large amounts of water are generally not required. Landowners typically provide their own water, which is primarily obtained using community and private water wells, as well as localized tributaries to the Sacramento River.

Collinsville's water supply is sourced from a single public water supply well managed by Collinsville Water Works and is located at 1105 Collinsville Road in Birds Landing. To qualify as a public water system, the source must provide piped water for human consumption and have at least 15 service connections or regularly serve an average of at least 25 individuals daily at least 60 days per year. Collinsville Water Works is under the authority of the State Water Resources Control Board's (SWRCB's) Division of Drinking Water. Tapping into this well for use during construction of the Proposed Project would require permission from the SWRCB (Safe Drinking Water Information System 2023).

Solano County has several water providers, districts, and sources. The Solano County Water Agency delivers untreated water from the Solano Project (a project that includes Monticello Dam and Lake Berryessa) and the North Bay Aqueduct (a State Water Project facility). The Solano County Water Agency (SCWA) provides water for municipal, industrial, and agricultural uses in Fairfield, Suisun City, Vacaville, Vallejo, Benicia, the Solano Irrigation District and Maine Prairie Water District service areas, University of California Davis, and the California State Prison in Solano County (Solano County 2023). Sacramento County's water is supplied by over 20 individual water purveyors. The closest in proximity to the Proposed Project lies within Rio Vista and is provided by California American Water Company. The water for Rio Vista is provided by eight wells in various locations within Rio Vista. The water distribution system includes over 18 miles of pipe and two reservoir tanks, each with a capacity of 2 million gallons. There are two major water providers in Contra Costa County: the East Bay Municipal Utility District (EBMUD) and the Contra Costa Water District (CCWD). EBMUD delivers water directly to its customers after it is treated. CCWD provides treated water services to several cities in the Central Contra Costa County area; and several city and other water agencies buy "raw," untreated water from CCWD, treat it, and then sell it to their own local customers.

The City of Pittsburg treats water sourced from CCWD. The untreated sourced water originates from the Delta before arriving in Pittsburg. The Delta Diablo District works with CCWD to provide recycled water in areas where the land use is designated to be industrial. Additionally, two groundwater wells—the Bodega Well and the Dover Well in Pittsburg—produce approximately 10 percent of the city's water supply.

5.19.1.1.2 Wastewater

Many developments within the Proposed Project area operate individual on-site wastewater treatment systems, which are permitted and regulated by the Solano County Resource Management Department's Division of Environmental Health. Permits are required to install, repair, or modify individual septic systems; and records are kept by the county on each system. Rio Vista operates two wastewater plants—the Beach Wastewater Treatment Plant located approximately 10.3 miles northeast of Collinsville, and the Northwest Wastewater Treatment Plant located approximately 9.6 miles northeast of Collinsville. The Delta Diablo District provides wastewater conveyance and treatment services in the City of Pittsburg and is approximately 5 miles southeast of PG&E's existing Pittsburg Substation.

5.19.1.1.3 Electricity and Natural Gas

PG&E provides electricity services to Solano and Contra Costa counties, including the Proposed Project area. In Sacramento County, electricity is mostly provided by Sacramento Municipal Utility District (SMUD). Natural gas services are provided by PG&E in Solano, Contra Costa, and Sacramento counties.

5.19.1.1.4 Telecommunications

Comcast/Xfinity, DirecTV, Dish Network, and Frontier Communications provide cable television service in the Proposed Project area. Telephone service is generally provided by AT&T, Verizon Wireless, Sprint, and T-Mobile. Internet providers in the Proposed Project area include AT&T, Xfinity, and Verizon.

5.19.1.2 Utility Lines

Numerous utility lines (e.g., overhead electric transmission and distribution lines, underground natural gas pipelines, and underground hazardous liquid pipelines) are located throughout the Proposed Project area. The Proposed Project is located within an existing regional transmission system that provides electricity to the northern Greater Bay Area. The existing utility system in the Proposed Project vicinity includes the following PG&E substations and transmission infrastructure:

- Vaca Dixon Substation (500/230 kV)
- Pittsburg Substation (230/115 kV)
- Tesla Substation (500/230 kV)
- Vaca Dixon-Tesla 500 kV Transmission Line

The proposed LSPGC 230 kV Underground Segment would cross an underground segment of the Trans Bay Cable, an operational single-circuit 200 kV transmission line (California Energy Commission [CEC] 2023). The Trans Bay Cable exits the Delta and connects to PG&E's

existing Pittsburg Substation. The Proposed Project would connect to PG&E's existing Pittsburg Substation, where there are eight additional operational overhead transmission lines connected, including four double-circuit 230 kV and four double-circuit 115 kV lines. In the northern portion of the Proposed Project, the proposed PG&E 500 kV Interconnection would connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line (CEC 2023). It is not anticipated that any existing overhead or underground utilities would need to be relocated to accommodate the Proposed Project.

As further described in Section 5.9 Hazardous Materials, several pipelines are located in the vicinity of the Proposed Project, and one natural gas pipeline is operated by California Gas Transmission and located approximately 1 mile south of PG&E's existing Pittsburg Substation. Multiple hazardous liquid pipelines are located approximately 0.4 mile south of PG&E's existing Pittsburg Substation. Lastly, the proposed LSPGC Collinsville Substation would be approximately 0.5 mile west of a gas transmission pipeline, and the proposed PG&E 500 kV Interconnection would parallel the pipeline for approximately 0.4 mile.

5.19.1.3 Approved Utility Projects

LSPGC is aware of one project that is in close proximity to the Proposed Project area. Construction of the Solano 4 Wind Project began in 2023 and is expected to be completed in spring 2024. The Solano 4 Wind Project involves decommissioning existing wind turbine generators and constructing new wind turbine generators at the Solano 4 East site (approximately 3.5 miles southwest of Rio Vista) and the Solano 4 West site (adjacent to the Delta near Collinsville).

5.19.1.4 Water Supplies

Water used during construction of the Proposed Project in Solano County would likely be supplied from a well that was constructed for and located on the Solano 4 Wind Project site, purchased from private sources, and/or trucked on site from local water districts. As appropriate, water would be purchased from the Solano SCWA. Lake Berryessa has a storage capacity of 1,602,000 acre-feet and supplies SCWA. As of February 2024, Lake Berryessa stored approximately 1,376,739 acre feet of water (SCWA 2024). Water may also be purchased from the City of Rio Vista, which is supplied by wells. In 2022, the City of Rio Vista pumped 742,646,000 gallons of water (City of Rio Vista 2022). Water used for Proposed Project construction in Contra Costa County would be purchased from CCWD and trucked to the site. Construction activities planned in Sacramento County would occur within the Sacramento River and would not require additional water to be brought on site. The Proposed Project components within Solano County would be located within the Suisun-Fairfield Valley groundwater basin, an underground water source estimated to have a storage capacity of approximately 74 billion gallons. The primary source for water in central and eastern Contra Costa County is the Delta, from which CCWD draws water. In addition, the district stores water in three reservoirs, including the Los Vaqueros Reservoir which had approximately 132,000 acre-feet of water as of December 2023. CCWD provides water to local residences and also sells untreated water to various cities, including the City of Pittsburg. CCWD sold 27 billion gallons of water in 2022 (CCWD 2023).

5.19.1.5 Landfills and Recycling

The following three privately owned landfills (the Potrero Hills Landfill, Recology Hay Road Landfill, and Mt. Diablo Recycling Center) and one waste management service (Environmental Logistics, Incorporated) serve the Proposed Project area (California's Department of Resources Recycling and Recovery [CalRecycle] 2023):

- The Potrero Hills Landfill is operated by Potrero Hills Landfill, Inc. and is located at 3675 Potrero Hills Lane in Suisun City. The total permitted capacity of the Potrero Hills Landfill is 83.1 million cubic yards (CY), of which approximately 13.9 million CY are remaining. The estimated closure date for this facility is 2048.

- Recology Hay Road Landfill is located at 6426 Hay Road in Vacaville, and accepts hazardous waste, including asbestos. The total capacity of the landfill is 37 million CY. As of 2010, approximately 30.4 million CY were remaining. Recology Hay Road Landfill is expected to provide capacity for solid waste until approximately 2077.

- Mt. Diablo Resource Recovery operates Mt. Diablo Recycling Center (located at 1300 Loveridge Road in Pittsburg) and Pittsburg Recycling Center, Incorporated (located at 181 Clark Avenue in Pittsburg). Mt. Diablo Recycling Center contains the area's largest recycling processing center.

- Environmental Logistics, Incorporated deploys hazardous waste management services in the City of Pittsburg and the unincorporated community of Collinsville. These services include handling, managing, transporting, and disposing of a wide variety of hazardous waste and other regulated waste materials (Environmental Logistics, Inc., 2023)

To meet the requirements set forth in the Integrated Waste Management Act of 1989, each approved regional solid waste management agency in the state is responsible for meeting 50 percent diversion of solid waste to recycling facilities.

5.19.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.19.2.1 Regulatory Setting

5.19.2.1.1 Federal

No federal regulations related to utilities and service systems are relevant to the Proposed Project.

5.19.2.1.2 State

Delta Protection Act of 1992

The Delta Protection Act of 1992 (Public Resources Code [PRC] § 29760 et seq.) requires the Delta Protection Commission (DPC) to prepare, adopt, and maintain a comprehensive long-term resource management plan for land uses within the Primary Zone of the Delta. Because of its location between major population areas, its flat terrain, and the general lack of development, the

Delta has a high value as a utility and transportation corridor. Local governments regulate the utilities that serve Delta residents and visitors, including potable water, sewage disposal, and solid waste removal. The Primary Zone includes approximately 500,000 acres of waterways, levees, and farmland extending over portions of five counties, including Solano County.

The DPC has developed a Resource Management Plan for the Primary Zone of the Delta in order to "protect the Delta from excessive construction of utilities and infrastructure facilities, including those that support uses and development outside the Delta. Where construction of new utility and infrastructure facilities is appropriate, ensure the impacts of such new construction on the integrity of levees, wildlife, and agriculture are minimized." The Utilities and Infrastructures Element of the plan summarizes findings, policies, and recommendations regarding utility and transportation corridors, railway rights-of-way (ROWs), water resources, solid waste, and sewage disposal.

Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989 mandated that California's jurisdictions divert 50 percent of their solid waste from landfills by the year 2000. The act made California cities, counties, and approved regional solid waste management agencies responsible for enacting plans and implementing programs to meet the state's mandate. All California cities, counties, and approved regional solid waste management agencies are responsible for enacting plans and implementing programs to divert 50 percent of their solid waste each year (CalRecycle 2023a).

Assembly Bill 341

In 2011, Assembly Bill (AB) 341 established a state goal of 75 percent recycling, composting, or source reduction of solid waste by 2020 and thereafter. The bill also established mandatory recycling for most California commercial businesses and multi-family residential buildings with five or more units (CalRecycle 2023c).

Assembly Bill 1826

In October 2014, Governor Brown signed AB 1826 (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also required that on and after January 1, 2016, local jurisdictions across the state must implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste, for the purposes of AB 1826, means food waste, green waste, landscape and pruning waste, non-hazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

California Green Building Standards Code, Title 24, Part 11

Section A5.408 of Title 24, Part 11 of the 2022 California Green Building Standards Code sets forth rates for the diversion of construction and demolition waste. These rates are classified by Tier 1 and Tier 2 standards, and the standards become mandatory within a city or county if adopted by a city or county. Tier 1 specifies that at least 65 percent of non-hazardous construction and demolition waste for a project will be diverted to recycle or salvage. Tier 2 specifies that at least 80 percent of non-hazardous construction and demolition waste generated

at a project site will be diverted to recycle or salvage (California Building Standards Commission 2023).

State Water Resources Control Board Order 2014-0174-DWQ

The SWRCB adopted the Statewide General National Pollutant Discharge Elimination System Permit for Discharges from Utility Vaults and Underground Structures to Waters of the United States, Water Quality Order 2014-0174-DWQ, in October 2014. Water Quality Order 2014-0174-DWQ became effective on July 1, 2015.

This General Permit covers short-term and intermittent discharges from utility vaults and underground structures to waters of the United States. Utilities eligible for coverage under this General Permit include, but are not limited to, suppliers of cable television, electricity, internet, natural gas, and telephone services. Water Quality Order 2014-0174-DWQ expired on June 29, 2020 but remains in effect until the SWRCB reissues the General Permit.

California Public Utilities Commission, General Order 95, Section 35

Section 35 of California Public Utilities Commission (CPUC) General Order (GO) 95 covers all aspects of design, construction, and O&M of electrical power lines, as well as fire safety hazards.

California Code of Regulations, Title 14, Sections 1250 to 1258

Title 14, Sections 1250 to 1258 of the California Code of Regulations (CCR) provide specific clearance standards to be maintained by utility companies between electric power lines and all vegetation.

California Fire Code

Title 24, Part 9 of the CCR is known as the California Fire Code. This code provides provisions for planning, precautions, and preparations for fire safety and fire protection during various activities, including, but not limited to, construction and demolition, as well as requirements for buildings and guidelines for working with flammable chemicals and materials. As such, the California Fire Code was reviewed for this analysis.

California Public Resources Code Sections 4292 and 4293

California PRC Section 4292 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line…shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

PRC Section 4293 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> (a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
> (b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
> (c) For any line which is operating at 110,000 or more volts, 10 feet
>
> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

Red Flag Fire Prevention Program

Like PRC Sections 4292 and 4293, red flag warnings and fire weather watches aim to prevent fire events and reduce the potential for substantial damage. The National Weather Service issues the red flag warnings and fire weather watches. When extreme fire weather or behavior is present or predicted in an area, a red flag warning or fire weather watch may be issued to advise local fire agencies that these conditions are present.

5.19.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county regulations are not applicable as Solano County, Sacramento County, Contra Costa County, and the City of Pittsburg do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary of local related policies, plans, or programs for informational purposes.

Solano County General Plan

The Public Facilities and Services Chapter of the Solano County General Plan provides the following policies and implementation programs that are relevant to utilities and service systems:

- PF.P-20: Minimize the consumption of water in all new development.
- PF.I-29: Expand waste minimization efforts, including household recycling, food waste and green waste recycling, business paper recycling, and construction and demolition recycling. Require commercial and industrial recycling. Require building projects to recycle or reuse a minimum of 50 percent of unused or leftover building materials.
- PF.P-50: Locate, design, and construct transmission lines in a manner that minimizes disruption of natural vegetation, agricultural activities, scenic areas, and avoids unnecessary scarring of hill areas.
- PF.I-55: Encourage local utility companies to provide high speed wireless internet access for all residents; prioritize developing transmission lines for solar, wind, and other alternative energy sources; and ensure resiliency and redundant access to the utility grid.
- PF-E.8: The County shall encourage the local agencies responsible for flood control or storm drainage to precisely locate drainage facilities well in advance of anticipated construction, thereby facilitating timely installation and encouraging multiple (construction projects to be combined, reducing the incidence of disruption of existing facilities.
- PF-E.21: The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.
- LU-F.30: The County shall generally require community sewer and water services for industrial development. Such services shall be provided in accordance with the provisions of the Fresno County Ordinance, or as determined by the State Water Quality Control Board.

Sacramento County General Plan

The Sacramento County General Plan's Public Facilities Element provides the following policies that are relevant to utilities and service systems:

- PF-2: Municipal and industrial development within the Urban Service Boundary but outside of existing water purveyors' service areas shall be served by either annexation to an existing public agency providing water service or by creation or extension of a benefit zone of the SCWA.
- PF-8: Do not permit development which would cause sewage flows into the trunk or interceptor system which would cause an overflow.

- PF-10: Development along corridors identified by the Districts in their planning documents as locations of future sewerage conveyance facilities shall incorporate appropriate easements as a condition of approval.

- PF-12: Sacramento County will support extension of sanitary sewer services outside of Sacramento County by the SRCSD and its Contributing Agencies:

  – if it complies with the conditions set forth in the MIA which governs the policies and operating responsibilities of the SRCSD and its Contributing Agencies.

- PF-14: Independent community sewer systems shall not be established for new development.

- PF–68: Cooperate with the serving utility in the location and design of energy production and distribution facilities in a manner that is compatible with surrounding land uses by employing the following methods when appropriate to the site:

  – County of Sacramento General Plan 38 Public Facilities Element Amended December 17, 2019

  – Visually screen facilities with topography and existing vegetation and install site-appropriate landscaping consistent with surrounding land use zone development standards where appropriate, except where it would adversely affect access to utility facilities, photovoltaic performance or interfere with power generating capability.

  – Provide site-compatible landscaping.

  – Minimize glare through siting, facility design, nonreflective coatings, etc. except for the use of overhead conductors.

  – Site facilities in a manner to equitably distribute their visual impacts in the immediate vicinity.

- PF-73: Cogeneration facilities are prohibited outside the Urban Service Boundary, except as part of an existing processing operation such as for dairying, agricultural, or landfill purposes.

- PE-75: Conduct an analysis of non-potable water availability prior to the development of any new cogeneration facility. The results of such an analysis shall be submitted to the State Water Resources Control Board for review and approval.

- PF-84: New transmission lines constructed within existing and planned urban areas should utilize existing transmission corridors whenever practical. Secondary preferred locations are adjacent to railway and freeway corridors when feasible.

- PF-103: Sub-transmission facilities should be entirely contained within a public utility easement or dedicated SMUD easements, as applicable.

- PF-115: If a hearing body is considering a change to, or elimination of, a condition of approval that requests an easement for siting of electrical or gas facilities, they should consult with the appropriate service provider prior to taking such action.

Contra Costa County General Plan

The Contra Costa County General Plan's Public Facilities/Services Element provides the following policies that are relevant to utilities and service systems:

- 7-1: New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities which can be attributed to new development.

- 7-5: The County shall take an active role in coordinating major infrastructure construction within the County, particularly the transportation system network and extension of sewer and water service, to assure consistency of these improvements with the General Plan.

- 7-20: Development of rural residences or other uses that will be served by well water or an underground water supply will be discouraged if a high nitrate concentration is found following Health Services Department testing (see Figure 7-2).

- 7-21: At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

- 7-24: Opportunities shall be identified and developed in cooperation with water service agencies for use of non-potable water, including ground water, reclaimed water, and untreated surface water, for other than domestic use.

- 7-26: The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.

- 7-33: At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

- 7-35: Opportunities for using reclaimed wastewater shall be identified and developed in cooperation with sewer service and water service agencies.

- 7-45: On-site water control shall be required of major new developments so that no significant increase in peak flows occurs compared to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts expected from the development or the project is implementing an adopted drainage plan.

5.19.3 Impact Questions

5.19.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For utilities and service systems, the CEQA Environmental Checklist asks if the Proposed Project would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

5.19.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the following additional CEQA impact question is required for utilities and service systems. Would the Proposed Project:

- Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

5.19.4 Impact Analysis

5.19.4.1 Utilities and Service Systems Impact Analysis

5.19.4.1.1 Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications

facilities, the construction or relocation of which could cause significant environmental effects?

Construction

LSPGC Components

Water

Less-than-Significant Impact. Construction on the LSPGC Proposed Project components would require the temporary use of water and wastewater facilities by construction workers. Water used for construction activities, such as for dust suppression and compaction requirements, would be pumped from a well, purchased from private sources, and/or trucked on site from local water districts. It is estimated that approximately 6 million gallons of water would be used for construction purposes during the approximately 24-month construction process, as described in Section 3.5.9 Water Use and Dewatering. The amount of water required for construction of the proposed LSPGC Collinsville Substation and LSPGC 230 kV Transmission Line would represent a small percentage of the capacity of the Suisun-Fairfield Valley groundwater basin; as a result, it is not expected to have a significant impact on water resources. As described previously in Section 5.19.1.4 Water Supplies, the existing well draws upon the Suisun-Fairfield Valley groundwater basin, which has a capacity of 74 billion gallons and would be able to provide the approximately 6 million gallons of water required for construction of the Proposed Project. If water is not drawn from the previously identified well, water would be purchased from private sources and/or trucked on site from local water districts (e.g., CCWD), that have capacity to provide water services in its service territory for the next 50 years, including provisions for industrial projects. As a result, impacts would be less than significant.

Wastewater and Storm Water

Less-than-Significant Impact. During construction, wastewater service would be provided by portable toilets, and solid waste would be appropriately disposed of at licensed off-site facilities. For every 10 workers, approximately 100 to 150 gallons of liquid waste would be generated per week. The construction workforce would have a maximum of 160 workers on site during peak activities, and thus only minimal wastewater generation would be anticipated. No new or relocated permanent sewer infrastructure would be required to accommodate the waste stream during construction. Therefore, no impact would occur.

The LSPGC Proposed Project components would not require the relocation or expansion of storm water drainage facilities. The proposed LSPGC Collinsville Substation pad would be sloped to allow for sheet-flow from north to south to facilitate drainage to a proposed stormwater detention basin on the southern side of the substation. The stormwater detention basin would be sized for evaporation of water over time. Storm water would sheet-flow to the adjacent land surface during storm events. Storm water runoff from the LSPGC Proposed Project components would filter through the surrounding soil or evaporate, and runoff would not significantly erode or alter the surrounding land. Therefore, impacts would be less than significant.

Electric Power and Natural Gas

Less-than-Significant Impact. The LSPGC Proposed Project components would include the construction of the proposed LSPGC Collinsville Substation and an approximately 6-mile-long

double-circuit 230 kV transmission line from the proposed LSPGC Collinsville Substation to PG&E's existing Pittsburg Substation. Temporary construction power and permanent substation power would be provided by extending an existing PG&E distribution line along Stratton Lane to the proposed LSPGC Collinsville Substation site. Temporary generators would be used as a contingency if distribution power is unavailable at the time of construction. Distribution line construction would result in limited ground disturbance (approximately 0.7 acre of land would be disturbed) and would occur within the Proposed Project's disturbance footprint. As such, there would not be an increase in the Proposed Project's disturbance area and substantial environmental impacts beyond those described within this Proponent's Environmental Assessment (PEA) are not anticipated. Furthermore, and as described in Chapter 3 – Project Description, existing underground utilities in the vicinity of the Proposed Project would be marked and construction methods would be modified, as necessary, to ensure that construction would not compromise the integrity of these existing utilities. The LSPGC Proposed Project components would not require the construction or relocation of natural gas facilities. As a result, impacts would be less than significant.

Telecommunications

Less-than-Significant Impact. The proposed LSPGC Collinsville Substation would connect to two new telecommunications paths. One path would involve constructing a new microwave tower at the proposed LSPGC Collinsville Substation. The second path would originate in the City of Pittsburg and would continue along the proposed LSPGC Telecommunications Line and LSPGC 230 kV Transmission Line until reaching the proposed LSPGC Collinsville Substation. The proposed LSPGC Telecommunications Line would involve installing approximately 1.2 miles of new fiber optic cable within existing public rights-of way via horizontal directional drilling in the City of Pittsburg. A fiber hub would also be installed adjacent to PG&E's existing Pittsburg Substation. The fiber optic cable would then continue underground until reaching the proposed onshore underground utility vault associated with the proposed LSPGC 230 kV Underground Segment. At the vault, the telecommunication path would continue along the tri-core cables to the in-river transition structure. From that point, optical ground wire (OPGW) would be installed along the proposed LSPGC 230 kV Overhead Segment above the primary conductors until reaching the proposed LSPGC Collinsville Substation. Additionally, the proposed LSPGC Collinsville Substation would include a Supervisory Control and Data Acquisition system that would consist of fully redundant servers, power supplies, and Ethernet Local Area Network and Wide Area Network connections, routers, firewalls, and switches. The LSPGC Proposed Project components would not require the relocation of existing telecommunication lines and would construct the new telecommunication facilities on existing structures and/or new structures installed as part of the LSPGC Proposed Project components. Furthermore, these features would not increase the LSPGC Proposed Project components' disturbance area and would not be anticipated to result in substantial environmental impacts beyond those described in this PEA. In addition and as described in Chapter 3 – Project Description, existing underground utilities in the vicinity of the Proposed Project would be marked and construction methods would be modified, as appropriate, to ensure that the integrity of existing utility infrastructure is not compromised. As a result, impacts would be less than significant.

PG&E Components

Water

No Impact. Construction of the PG&E Proposed Project components would require significantly less water than the LSPGC Proposed Project components due to the smaller footprint and limited grading requirements. Water used during construction activities would be temporary, and the PG&E Proposed Project components would not require new or relocated water infrastructure. Water required for construction activities associated with the PG&E Proposed Project components would be supplied by the same well installed as part of the Solano 4 Wind Project. If water is not drawn from the previously identified well, water would be sourced elsewhere, such as the CCWD, SCWD, or private sources. PG&E would confirm that these sources have adequate capacity prior to sourcing water from them. Therefore, no impact would occur.

Wastewater and Storm Water

Less-than-Significant Impact. During construction, wastewater service would be provided by portable toilets, and solid waste would be appropriately disposed of at licensed off-site facilities. Only minimal wastewater generation would be anticipated, and no permanent sewage infrastructure would be constructed or relocated for the PG&E Proposed Project components. Storm water drainage would percolate into pervious soils, and no new or relocated storm water infrastructure would be required. Therefore, the impacts would be less than significant.

Electrical Power and Natural Gas

Less-than-Significant Impact. The Proposed Project would create a PG&E interconnection. Temporary power at staging areas would be provided by adjacent existing distribution lines and/or temporary generators. As previously described, the PG&E Proposed Project components would not require the construction or relocation of natural gas facilities. The proposed PG&E 12 kV Distribution Line would be installed within the Proposed Project's disturbance footprint. As such, they would not increase the PG&E Proposed Project components' disturbance area and would not be anticipated to result in substantial environmental impacts beyond those described within this PEA. As a result, impacts would be less than significant.

Telecommunications

No Impact. The PG&E Proposed Project components would not involve the installation of telecommunications facilities or the relocation of existing telecommunications facilities. As a result, no impact would occur.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Water

No Impact. O&M of the LSPGC and PG&E Proposed Project components would not require the construction or relocation of water infrastructure. Water would likely be supplied by a nearby well, purchased from private sources, and/or trucked on site from local water districts. O&M of the proposed LSPGC Collinsville Substation would not require significant supplies of water as it would be unmanned and remotely operated. Routine maintenance of the LSPGC and PG&E Proposed Project components could include washing equipment, but water used for washing

would be minimal and would not have a substantial impact on the water supply. Therefore, no impact would occur.

Wastewater and Storm Water

No Impact. The LSPGC and PG&E Proposed Project components would be unmanned during O&M, and therefore would not require the construction or relocation of wastewater facilities and associated sewage infrastructure. As previously described, the proposed LSPGC Collinsville Substation would be graded so storm water would sheet-flow to facilitate drainage to a stormwater detention basin. The storm water runoff would percolate through the soil or evaporate. O&M activities for the LSPGC and PG&E Proposed Project components would not require new or relocated storm water infrastructure. Therefore, no impact would occur.

Electrical Power and Natural Gas

No Impact. O&M of the LSPGC and PG&E Proposed Project components would not require new, expanded, or relocated electrical power or natural gas facilities. Therefore, no impact would occur.

Telecommunications

No Impact. O&M of the LSPGC and PG&E Proposed Project components would not require new, expanded, or relocated telecommunications facilities. Therefore, no impact would occur.

5.19.4.1.2 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Construction

LSPGC Components

Less-than-Significant Impact. It is estimated that approximately 6 million gallons (equal to approximately 18 acre-feet) of water would be used for construction purposes during the 24-month construction process. As previously discussed, these LSPGC Proposed Project components would be located within the Suisun-Fairfield Valley groundwater basin, which has an adequate water supply to serve the needs of the Proposed Project in normal, dry, and multiple dry years because the total water required for construction would be a negligible portion of the groundwater storage capacity in the area. The Proposed Project is anticipated to require up to 6 million gallons of water, which would account for 0.008 percent of groundwater extracted from the Solano Subbasin in 2022 (LSCE Team 2023). Alternatively, water may be secured from other local or private sources. These providers would be contacted to ensure an adequate supply is available prior to use. Thus, the LSPGC Proposed Project components would not rely on a single source of water during normal, dry, and multiple dry years, and the LSPGC Proposed Project components' water demand would only constitute a small fraction of the available water supplies. Therefore, impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. Construction of the PG&E Proposed Project components would require significantly less water than the construction of the LSPGC Proposed Project components

due to the smaller footprint and limited grading requirements. As discussed previously, water may be supplied from a well adjacent to the proposed PG&E 500 kV Interconnection and that the associated groundwater basin has adequate storage capacity. Alternatively, water may be secured from other local or private sources. These providers would be contacted to ensure an adequate supply is available prior to use. Thus, during normal, dry, and multiple dry years, the PG&E Proposed Project components' water demand would only constitute a small fraction of the available water supplies. Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The daily operation of the LSPGC and PG&E Proposed Project components would not require water. Water used for routine maintenance (e.g., cleaning equipment) would be negligible. There would be sufficient water to supply O&M activities during normal, dry, and multiple dry years; therefore, the impact would be less than significant.

5.19.4.1.3 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. During construction, portable toilets would be provided for workers. Portable toilet waste would be disposed of by a third-party wastewater disposal company at appropriately licensed facilities that have adequate capacity to accommodate the LSPGC and PG&E Proposed Project components. Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components would be unmanned and would not include permanent sanitary facilities. Portable toilets may be brought on site during certain maintenance activities, and wastewater would be disposed of by a third-party wastewater disposal company at an appropriate facility. Therefore, impacts would be less than significant.

5.19.4.1.4 Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. Solid wastes generated during construction would primarily be non-hazardous wastes, including wood, metal, paper, and plastic packaging. Construction debris volumes are estimated at a total of approximately 2,750 CY. Construction waste would be

disposed of properly and in accordance with all applicable federal, state, and local laws. The LSPGC and PG&E Proposed Project components would not generate solid waste greater than state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of Solano County, Sacramento County, or Contra Costa County solid waste reduction goals.

When practicable, recyclable construction material would be transported to an approved recycling facility. Construction waste that cannot be recycled would ultimately be disposed of at the Potrero Hills Landfill, Recology Hay Road Landfill, or another approved facility. Table 5.19-1: Waste Volume by Type includes the composition of waste estimated to be generated during construction of the Proposed Project and the estimated rate of reuse/recycling rate for each waste type.

Table 5.19-1: Waste Volume by Type

Waste Volume by Type	Construction			O&M		
	Vegetation	Metal	Plastic	Vegetation	Metal	Plastic
Waste Composition (percent)	10	60	30	20	20	60
Reuse/Recycling Rate (percent)	90	80	50	90	80	50
Waste Volume (CY)	2,750			10		

Construction waste would be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste, including, but not limited to the Integrated Waste Management Act of 1989, which set reduction rates for the amount of solid waste sent to landfills. As described previously in Section 5.19.1.5 Landfills and Recycling, Potrero Hills Landfill and Recology Hay Road Landfill each have sufficient capacity to accommodate the amount of waste anticipated to be generated during the Proposed Project construction activities. The LSPGC and PG&E Proposed Project components would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure. Therefore, impacts would be less than significant.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. The LSPGC and PG&E Proposed Project components would involve unmanned facilities and would generate minimal solid waste because workers would only periodically visit the site to perform O&M activities. Any waste generated by O&M activities would also be disposed of at Potrero Hills Landfill and Recology Hay Road Landfill. The LSPGC and PG&E Proposed Project components would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure. Solid waste generated during O&M of the LSPGC and PG&E Proposed Project components would be minimal due to the frequency and nature of maintenance activities. Table 5.19-1: Waste Volume by Type includes the composition of waste estimated to be generated during O&M of the

LSPGC and PG&E Proposed Project components and the estimated reuse/recycling rate of each waste type.

All non-hazardous solid waste generated during O&M would be disposed of in accordance with all applicable federal, state, and local laws and transported to the appropriate waste management facility. Therefore, impacts would be less than significant.

5.19.4.1.5 Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. All construction waste associated with the LSPGC and PG&E Proposed Project components would be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste. Therefore, no impact would occur.

5.19.4.1.6 Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. The southern portion of the LSPGC 230 kV Underground Segment would cross the Trans Bay Cable, an operational single-circuit, direct-current 200 kV underwater transmission line (CEC 2023). In addition to the Trans Bay Cable, there are pipelines located in proximity to the LSPGC Proposed Project components. Section 5.19.1.2 Utility Lines provides more details on the pipelines, which include a natural gas pipeline operated by California Gas Transmission, multiple hazardous liquid pipelines, and a natural gas transmission pipeline operated by CPN. Given the current at which the proposed LSPGC 230 kV Transmission Line would operate, the minimal length of collocation at the crossing points, and the presence of existing transmission lines in the vicinity of these crossings, the LSPGC Proposed Project components would not be expected to increase the rate of corrosion of the pipelines. As necessary and appropriate, LSPGC would implement applicable standards of the National Electrical Safety Code (NESC) pertaining to the need for interference analysis and anti-corrosion/cathodic protection, pending final design and engineering. Due to pipelines in the vicinity of the LSPGC Proposed Project components, construction and O&M could potentially increase the rate of corrosion of these pipelines if additional protective measures are not taken. LSPGC would conduct an induction study to evaluate the potential effects of the LSPGC Proposed Project components on pipelines in its vicinity and implement the recommendations outlined in the report, as described in applicant-proposed measure (APM) UTIL-1. Therefore, impacts would be less than significant with the implementation of the APM.

PG&E Components

Less-than-Significant Impact. The proposed PG&E 500 kV Interconnection would parallel a gas transmission pipeline for approximately 0.4 mile. PG&E would conduct an induction study to evaluate the potential effects of the 500 kV Interconnection on the pipelines in the vicinity and would follow applicable standards of the NESC pertaining to the need for interference analysis

and anti-corrosion/cathodic protection, pending final design and engineering of the interconnections. PG&E would continue to follow their existing O&M practices in the region and take measures to prevent corrosion of nearby pipelines. The proposed PG&E 12 kV Distribution Line would not be constructed in the vicinity of an existing utility line. Therefore, impacts would be less than significant.

5.19.4.2 Utility Relocation

No conflicts with existing utility lines are anticipated; thus, the relocation of existing utility lines would not be required as part of the LSPGC and PG&E Proposed Project components.

5.19.4.3 Waste

Construction of the LSPGC and PG&E Proposed Project components is expected to generate approximately 2,750 CY of solid waste. Table 5.19-1: Waste Volume by Type includes waste that would be generated during the construction and O&M of the LSPGC and PG&E Proposed Project components and the reuse/recycling rate of each waste type. The removal of treated wood poles is not anticipated as part of the LSPGC and PG&E Proposed Project components.

5.19.4.4 Water Supply

The Proposed Project would use approximately 5.5 million gallons of water for the proposed LSPGC Collinsville Substation and 500,000 gallons for the overhead components. In total, the LSPGC and PG&E Proposed Project components would use approximately 6 million gallons of water for dust suppression, compaction requirements, and concrete, as well as any other additional construction needs. O&M of the LSPGC and PG&E Proposed Project components would include minimal water for uses such as cleaning equipment. Water supply is also discussed in detail in Sections 5.19.4.1 Water Supplies and 5.19.1.4 Utilities and Service Systems Impact Analysis.

The Proposed Project would not meet the criteria for consideration as a project subject to Water Supply Assessment Requirements under California Water Code Section 10912. The LSPGC and PG&E Proposed Project components would not house any people, and they would occupy less than 40 acres of land and have less than 650,000 square feet of floor area. Additionally, the LSPGC and PG&E Proposed Project components would not require an increase in the public water system's service connections as they would not have a direct connection to a public water system and all water would be trucked to the site. Therefore, the Proposed Project would not be considered a project under California Water Code Section 10912, and the submittal of a Water Supply Assessment would not be required.

5.19.4.5 Cathodic Protection

As previously discussed in Section 5.19.1.4 Utilities and Service Systems Impact Analysis, the LSPGC and PG&E Proposed Project components would be located in proximity to several natural gas and hazardous liquid pipelines, as well as the Trans Bay Cable. As necessary and appropriate, standards of the NESC would be implemented pertaining to the need for interference analysis and anti-corrosion/cathodic protection, pending final design and engineering.

5.19.5 CPUC Draft Environmental Measures

The CPUC recommended a draft environmental measure for utilities and service systems. The recommended environmental measure has been included in Section 5.19.6 Applicant-Proposed Measures.

5.19.6 Applicant-Proposed Measures

5.19.6.1 Utilities and Service Systems Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components to reduce potential impacts to a less-than-significant level:

- **APM UTIL-1**: **Induction Study.** An induction study would be conducted to evaluate the potential effects of the Proposed Project on pipelines in its vicinity. The study would include applicable standards of the NESC pertaining to the need for interference analysis and anti-corrosion/cathodic protection. The study would model the electrical interference effects on pipelines during different electrical conditions, such as maximum load and fault conditions. Additionally, the study would perform a coating stress voltage and alternating current (AC) density analysis on the pipelines. The induction study would recommend AC mitigation methods based on the findings. All recommendations of the study would be incorporated into the final engineering and design for the Proposed Project.

5.19.7 PG&E Construction Measures

5.19.7.1 Utilities and Service Systems PG&E Construction Measures

No Construction Measures are proposed for utilities and service systems because impacts would be less than significant.

5.19.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to utilities and service systems associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area would not create a demand for water, wastewater, and solid waste services that could not be met by existing service system capacities nor require the relocation of existing electrical infrastructure. As such, no additional mitigation measures or APMs would be required. If modification of the proposed Collinsville Substation is required in

the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				✓

This section describes the wildfire risk in the area of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the potential impacts that may result during construction, as well as operations and maintenance (O&M) of the Proposed Project.

5.20.1 Environmental Setting

The Proposed Project would cross Solano, Sacramento, and Contra Costa counties in California. The proposed LSPGC Collinsville Substation would be located near the unincorporated community of Collinsville, which is in southeastern Solano County. The proposed Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would extend from the proposed LSPGC Collinsville Substation and connect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. The proposed LSPGC 230 kV Overhead Segment would travel from the proposed LSPGC Collinsville Substation over land and connect to an in-river structure at the northern edge of the Sacramento River. The in-river structure would transition the proposed LSPGC 230 kV Overhead Segment to the proposed LSPGC 230 kV Submarine Segment, which would run beneath the Sacramento-San Joaquin River Delta (Delta) waterways until reaching a proposed onshore underground utility vault located on the southern edge of the Sacramento River in the City of Pittsburg. The proposed utility vault would transition the proposed LSPGC 230 kV

Submarine Segment to the proposed LSPGC 230 kV Underground Segment, which would extend and terminate at PG&E's existing Pittsburg Substation.

5.20.1.1 High Fire Risk Areas and State Responsibility Areas

Within California, Fire Hazard Severity Zones (FHSZs) are designated by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE uses a three-tiered ranking system to assess the threat to people based on factors such as fire history, fuel, terrain, and typical fire weather for the area. The tiers, from lowest to highest threat, are termed moderate, high, and very high threat (CAL FIRE 2023). FHSZs are administered by the federal, state, or local government that is financially responsible for preventing and suppressing wildfires in a given area, and are categorized into the following three groups:

- Federal Responsibility Areas: The federal government is financially responsible for wildfire suppression.
- State Responsibility Areas (SRAs): The state is financially responsible for wildfire suppression.
- Local Responsibility Areas (LRAs): Cities or counties are financially responsible for wildfire suppression.

According to the California Board of Forestry and Fire Protection, the Proposed Project would be located in an LRA (California Board of Forestry and Fire Protection 2023). The Proposed Project would not be located in an FHSZ designated as moderate, high, or very high threat (CAL FIRE 2023). The closest FHSZ designated as high to the Proposed Project is approximately 2 miles southwest of PG&E's existing Pittsburg Substation. The existing substation is approximately 3 miles northeast of a moderate FHSZ and 8 miles northeast of a very high FHSZ.

The California Public Utilities Commission (CPUC) created a statewide High Fire Threat District (HFTD) map to show areas where there is an increased risk for utility-associated wildfires (CPUC 2021a). The Proposed Project would not be located in an HFTD. The closest HFTD to the Proposed Project is approximately 3 miles south of PG&E's existing Pittsburg Substation; it is classified as Tier 2, which is an area with a higher risk of fire and impacts from utility-related wildfires.

5.20.1.2 Fire Risk

CloudFire Inc. prepared a wildfire risk analysis of the Proposed Project, which is provided in Attachment 5.20-A: Wildfire Technical Report. As described in the report, wildfire behavior modeling was conducted for the Proposed Project using ELMFIRE, a fire behavior mapping and analysis program that computes potential fire behavior characteristics (e.g., spread rate, flame length, fire line intensity, etc.) over a study area with inputs, such as elevation, slope, wind direction and speed, and Scott/Burgan fuels modeling. As shown in Figure 5.20-1: Scott & Burgan Surface Fuel Models, the predominant surface fuel models in the Proposed Project area north of the Sacramento River are low load, dry climate grass, and agricultural. The dominant surface fuel model in the vicinity of PG&E's existing Pittsburg Substation is urban/developed.

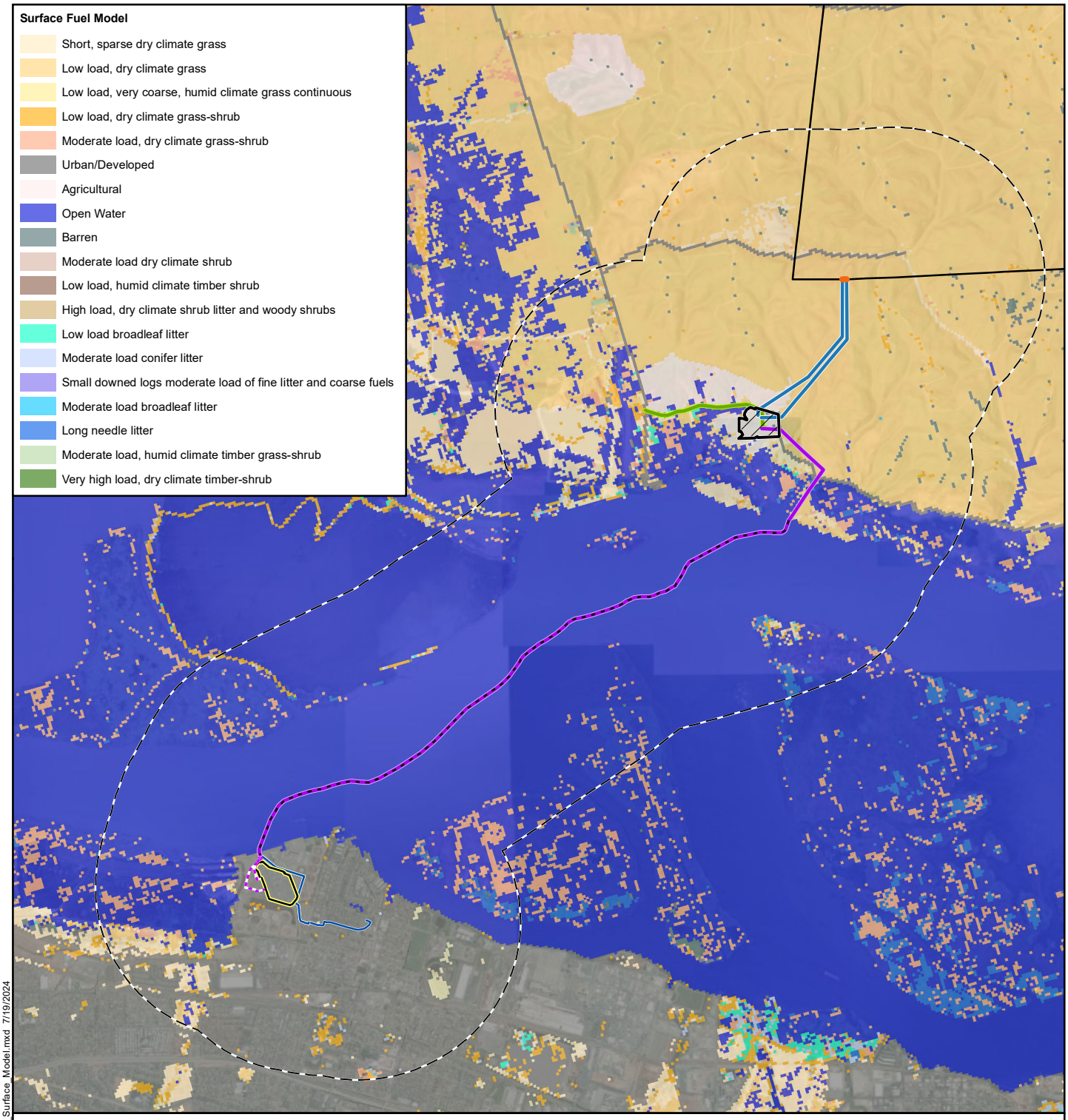

Figure 5.20-1: Scott & Burgan Surface Fuel Models **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

1:60,000
0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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Figure 5.20-2: Wildland Urban Interface Areas depicts the wildland urban interface (WUI) data in the Proposed Project vicinity. WUI is the area where houses meet or intermingle with undeveloped wildland vegetation, making them of higher concern for human-environment conflicts, such as wildland fires. This figure shows that the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection would be in the vicinity of areas designated as very low density to the north and west of the Proposed Project components. The proposed LSPGC Collinsville Substation would be adjacent and west of an area designated as low density. PG&E's existing Pittsburg Substation is within an area classified as low density.

The Proposed Project would be sited in a low-fire-risk area. The Proposed Project would not be located within or in the vicinity of CPUC HFTDs or very high FHSZs. Fire threat for most areas near the Proposed Project is not rated, meaning it is less than the minimum fire threat category (low). Figure 5.20-3: Fire Threat depicts moderate fire threat areas adjacent to the proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment. Fire threat immediately east of the proposed PG&E 500 kV Interconnection is a mosaic of low/moderate/high, most likely caused by elevated topographical slope values in that area.

5.20.1.3 Fire Occurrence

A wildfire is defined in Section 51177(j) of the California Government Code as "an unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to extinguish the fire." CAL FIRE defines a "large fire" as being 300 acres or greater (CAL FIRE 2022). Further, Section 5.20.1.2 of the CPUC Guidelines requires identification of recent (i.e., within the past 10 years) large fires that have occurred within the Proposed Project vicinity.

The CAL FIRE Wildfire Perimeters database was reviewed for large fires within the Proposed Project vicinity. No large fires north of the Sacramento River in the vicinity of the Proposed Project have occurred. Approximately 4 miles south of PG&E's existing Pittsburg Substation, the 2013 Kirker Fire burned 478 acres. Additionally, the 2021 Kirker Fire burned 84 acres, and the 2022 Kirker Fire burned 85 acres in similar areas approximately 4 miles south of PG&E's existing Pittsburg Substation. In 2021, the Port Fire burned 57 acres, and the Willow Fire burned 29 acres approximately 6 miles west of PG&E's existing Pittsburg Substation in 2022. The CAL FIRE Wildfire Perimeters database lists the cause of the Port Fire as unknown and the cause of the Willow Fire as equipment use. The fire perimeters are depicted in Figure 5.20-4: Historical Fire Occurrence.

5.20.1.4 Spread Rate and Flame Length

Fire potential modeling was conducted using the ELMFIRE open-source operational fire spread model. Based on the climatological analysis, head fire spread rate and flame length were modeled across the Proposed Project area under near-worst-case conditions as follows:

- 1-hour fuel moisture: 2 percent
- 10-hour fuel moisture: 3 percent
- 100-hour fuel moisture: 4 percent
- Live herbaceous fuel moisture: 30 percent
- Live woody fuel moisture: 60 percent

- 20-foot sustained wind speed: 20 miles per hour

Outputs from this modeling are shown in Figure 5.20-5: Modeled Head Fire Spread Rate and Figure 5.20-6: Modeled Head Fire Flame Length. These results indicate that along the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and PG&E 500 kV Interconnection, spread rate and flame length are expected to be low to moderate. Given the preponderance of low-load grass fuels in and along the Proposed Project, such fires are suppressible as supported by the lack of large fire history in the area. Additionally, these near-worst-case spread rates and flame lengths are unlikely to cause significant damage to the few assets at risk located near the Proposed Project (CloudFire 2023). The modeling also shows that the flame spread rate and length is low near PG&E's existing Pittsburg Substation.

5.20.1.5 Values at Risk

Section 5.20.1.4 of the CPUC Guidelines requires identification of "values at risk along the proposed alignment. Values at risk may include: structures, improvements, rare habitat, other values at risk, (including utility-owned infrastructure) within 1000 feet of the project." The primary value at risk is agricultural areas/crops, and the Proposed Project components north of the Sacramento River would be located near few structures beyond existing utility infrastructure and wind turbines. The following transmission lines are located in the Proposed Project area:

- PG&E 500 kV transmission lines,
- The Trans Bay Cable,
- PG&E 230 kV transmission lines, and
- PG&E 115 kV transmission lines.

The Proposed Project would be in the vicinity of the following non-operational power plant and pipelines:

- The non-operational Pittsburg Power Plant is adjacent to PG&E's existing Pittsburg Substation.

- One natural gas pipeline operated by California Gas Transmission is approximately 1 mile south of PG&E's existing Pittsburg Substation.

- Multiple hazardous liquid pipelines are approximately 0.4 mile south of PG&E's existing Pittsburg Substation.

- One gas transmission pipeline crosses the Delta and Lower Sherman Island approximately 0.6 mile east of the proposed LSPGC 230 kV Submarine Segment. The proposed PG&E 500 kV Interconnection would parallel this pipeline along an unnamed access road off Talbert Lane for approximately 0.4 mile.

A residential neighborhood is located approximately 0.4 mile east of PG&E's existing Pittsburg Substation.

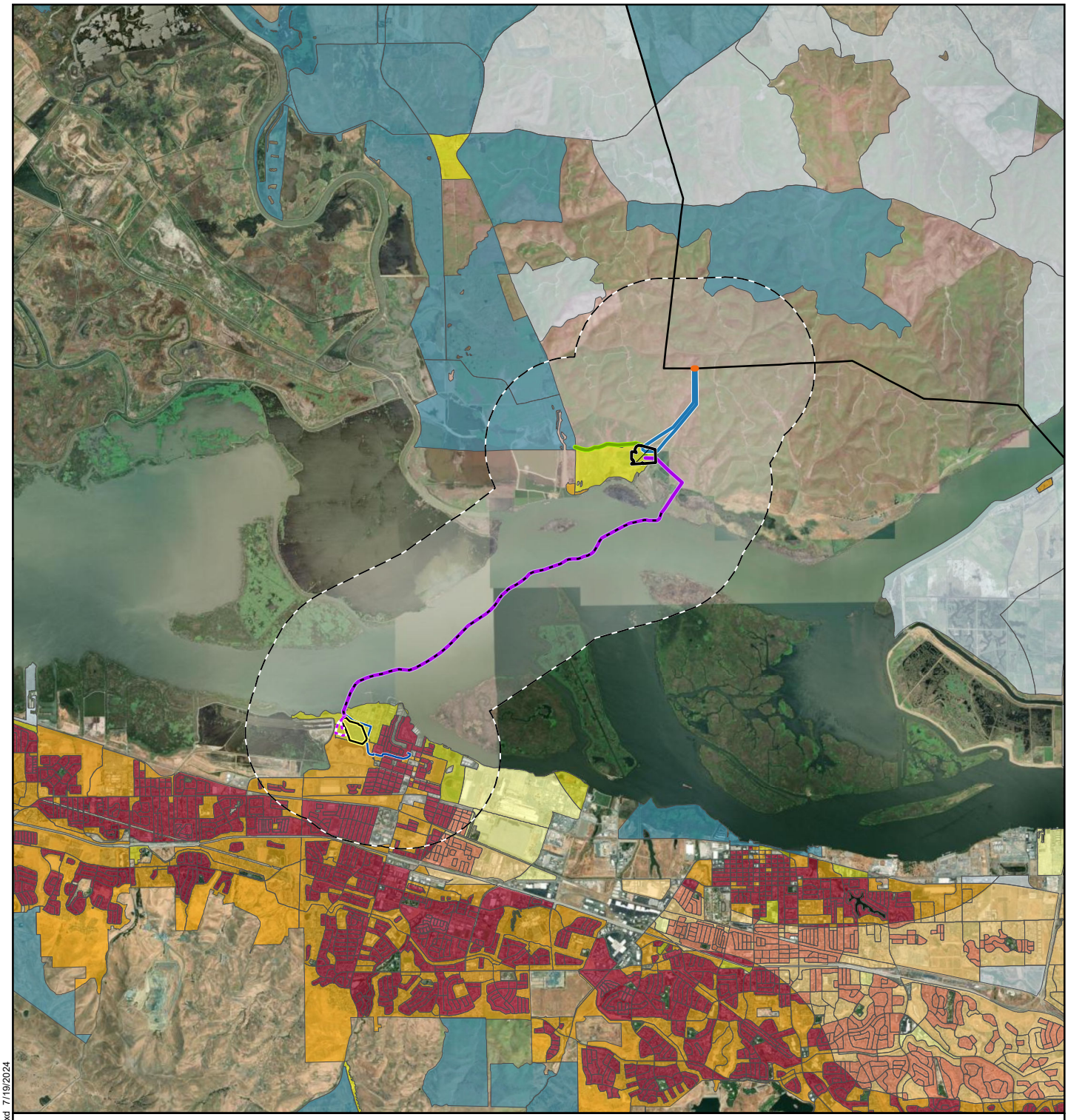

Figure 5.20-2: Wildland Urban Interface Areas — **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

2020 WUI Designations

- Very Low Density Vegetation
- Very Low Density No Vegetation
- Very Low Density No Vegetation
- Low Density Intermix
- Low Density Interface
- Medium Density Interface
- Medium Density Intermix
- Medium Density No Vegetation
- High Density No Vegetation
- High Density Interface

Source: CloudFire 2024

1:100,000

0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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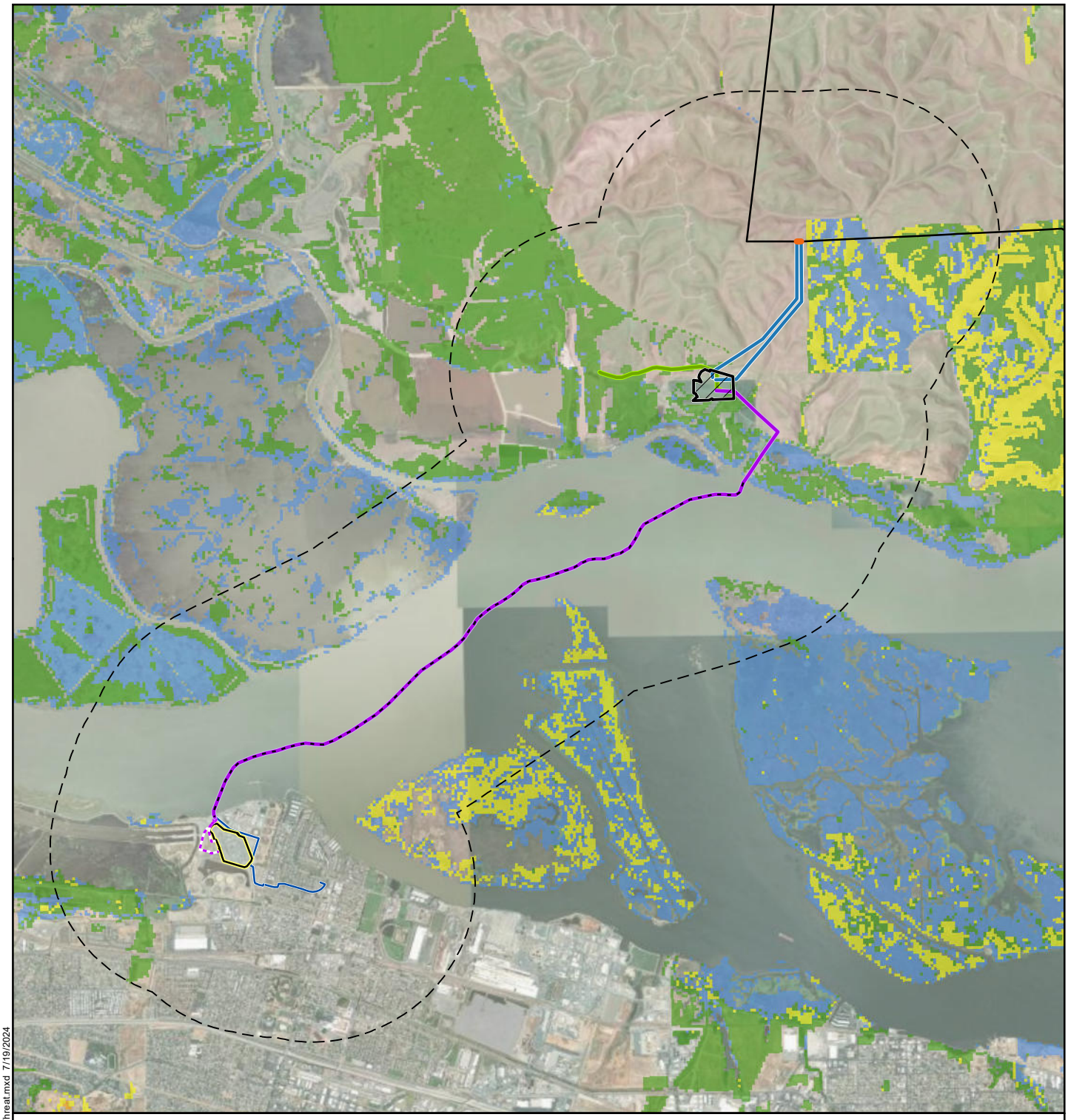

Figure 5.20-3: Fire Threat — **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

Fire Resource Assessment Program Fire Threat

- Low
- Moderate
- High
- Very High

1:60,000

0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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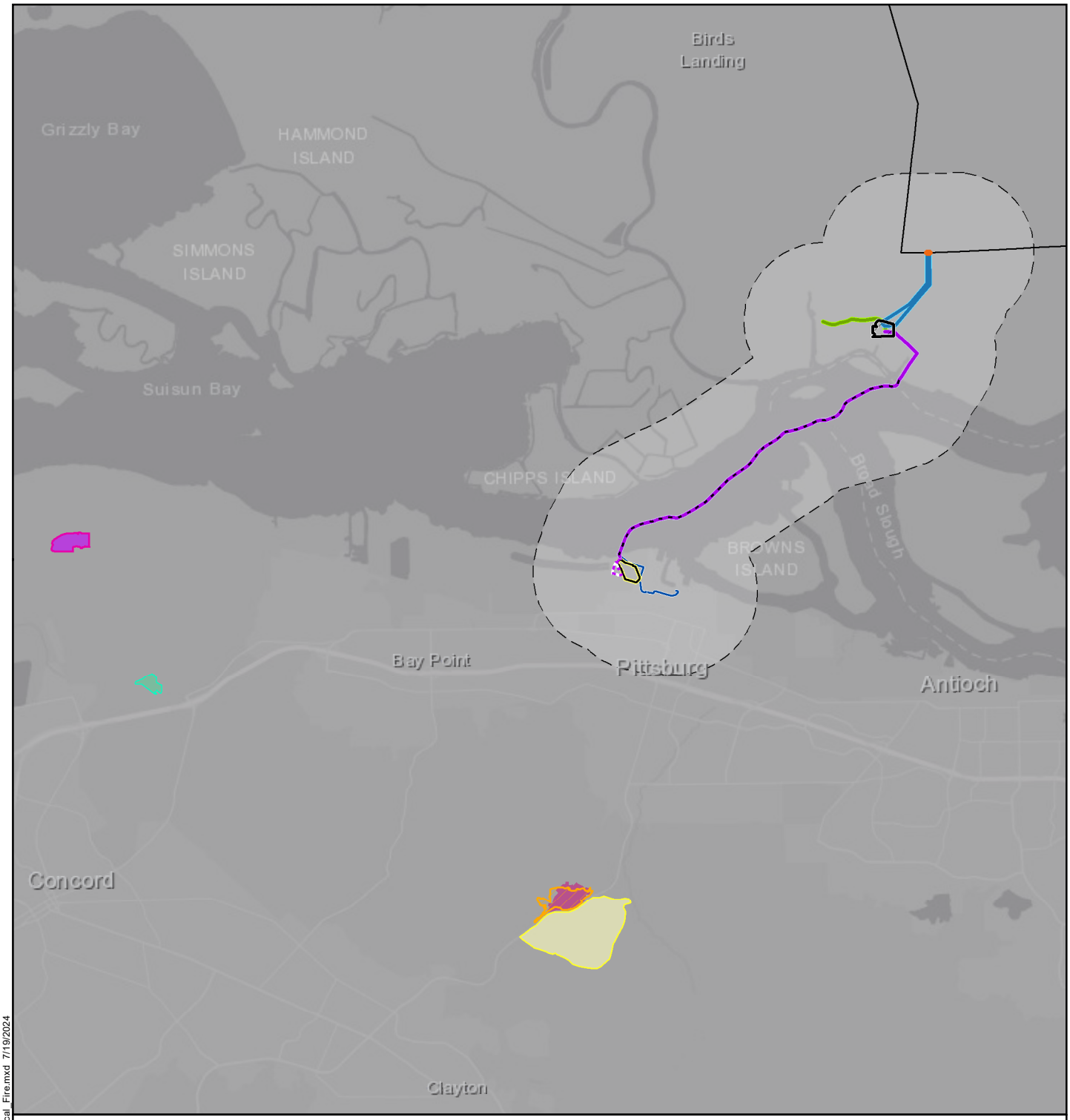

Figure 5.20-4: Historical Fire Occurrence — **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- 1-Mile Buffer
- The 2022 Kirker Fire
- The 2021 Kirker Fire
- The 2013 Kirker Fire
- The Willow Fire
- The Port Fire

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0 6,000 12,000 Feet

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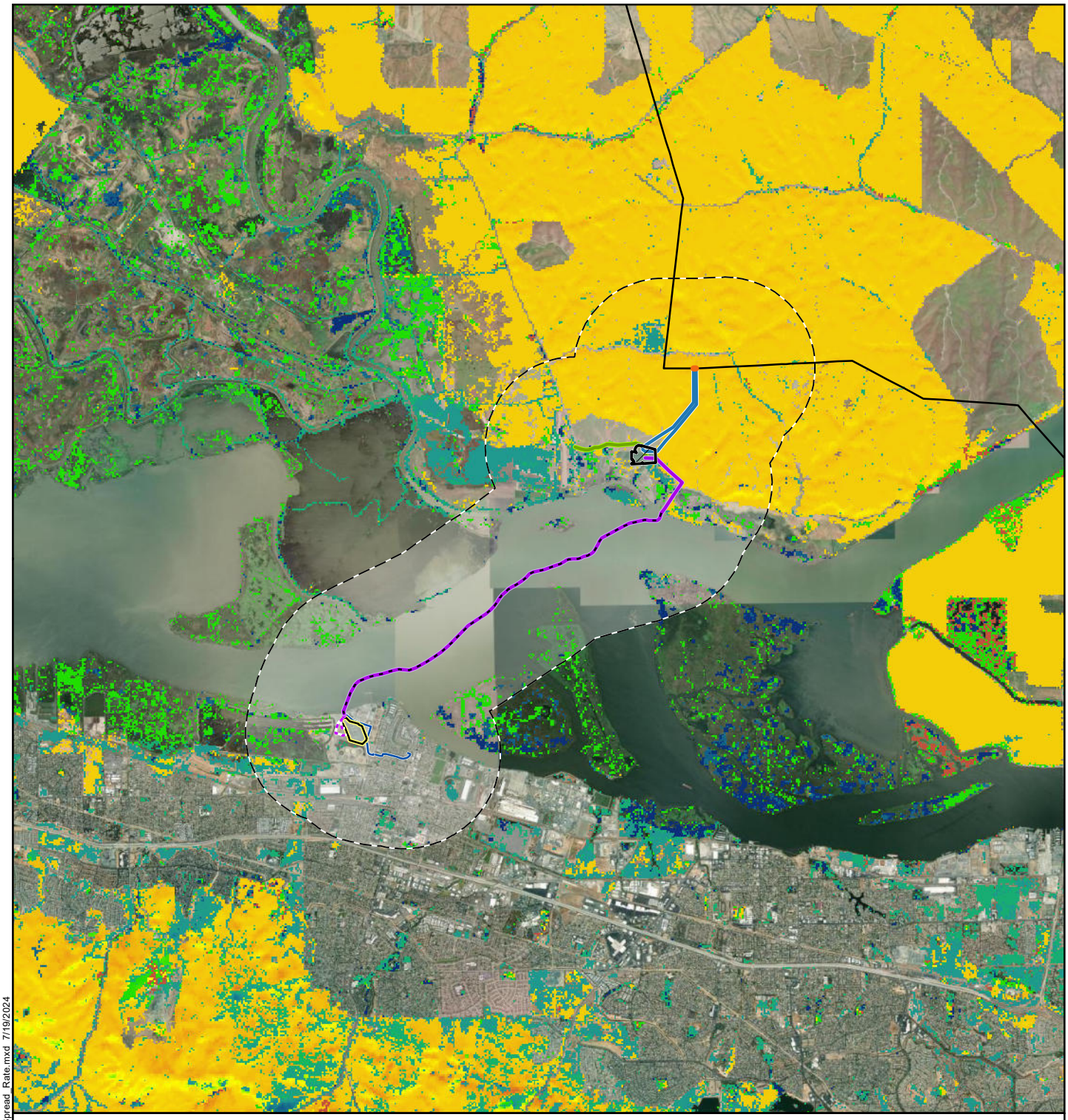

Figure 5.20-5: Modeled Head Fire Spread Rate **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

Head fire spread rate (ft/min)

High : 200

Low : 0

Source: CloudFire 2024

1:100,000

0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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Figure 5.20-6: Modeled Head Fire Flame Length **Collinsville 500/230 Kilovolt Substation Project**

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Proposed LSPGC Collinsville Substation Site
- Existing PG&E Pittsburg Substation
- 1-Mile Buffer

Head fire flame length (ft)

High : 20

Low : 0

Source: CloudFire 2024

1:100,000

0 4,000 8,000 Feet

LSPOWER GRID CALIFORNIA INSIGNIA ENVIRONMENTAL

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As discussed in Section 5.4 Biological Resources, the Proposed Project would be located near six sensitive natural communities that meet the California Department of Fish and Wildfire designated sensitive natural communities standard.

The *Frankenia salina* Herbaceous Alliance, *Rosa californica* Shrubland Alliance, *Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance, *Schoenoplectus americanus* Herbaceous Alliance, and the *Schoenoplectus acutus/rosa californica* Association would be within 1,000 feet of the Proposed Project.

5.20.1.6 Evacuation Routes

The wildfire risk analysis report did not identify any roads in the vicinity of the Proposed Project that lack a means of secondary egress. Emergency planning and response documents from Solano, Sacramento, and Contra Costa counties and documents from cities located within the counties were reviewed to identify evacuation routes near or within the Proposed Project, as discussed further in the subsections that follow.

5.20.1.6.1 Solano County Evacuation Routes

The Solano County Emergency Operation Plan Evacuation Annex was reviewed, and the plan did not identify specific evacuation routes. The Solano County Office of Emergency Services does not identify and publish evacuation routes within the county. The City of Rio Vista, located within Solano County and in the vicinity of the Proposed Project, does not prepare and publish evacuation plans containing specific evacuation routes.

5.20.1.6.2 Sacramento County Evacuation Routes

The Sacramento County Office of Emergency Service Evacuation Zones map and Sacramento County Evacuation Plan were reviewed. The Sacramento County Evacuation Plan identifies State Route 160, located approximately 5 miles east of the proposed LSPGC 230 kV Overhead Segment, as a major route out of and through Sacramento County.

5.20.1.6.3 Contra Costa County Evacuation Routes

The Safety Element of the Contra Costa County General Plan and the county's Hazard Mitigation Plan (HMP) were reviewed, and the plans did not contain specific evacuation route information. Within Contra Costa County, the proposed LSPGC 230 kV Underground Segment would be located within the City of Pittsburg. The HMP for the City of Pittsburg was reviewed, and the plan did not contain information on specific evacuation routes.

5.20.1.7 LSPGC 2023-2025 Wildfire Mitigation Plan

LSPGC developed a Wildfire Mitigation Plan (WMP) in 2023. The primary goal of the WMP is to describe how LSPGC will construct, maintain, and operate its electrical equipment in a manner that will keep its customers and communities safe by minimizing the risk of catastrophic wildfire. LSPGC has WMP objectives in the following WMP categories for 3- and 10-year time periods:

- Grid Design, Operations, and Maintenance;

- Vegetation Management and Inspections;
- Situational Awareness and Forecasting;
- Emergency Preparedness; and
- Community Outreach and Engagement.

5.20.2 Regulatory Setting

Federal, state, and local laws and regulations were reviewed for relevancy to the Proposed Project.

5.20.2.1 Regulatory Setting

5.20.2.1.1 Federal

No federal regulations related to wildfire are relevant to the Proposed Project.

5.20.2.1.2 State

California Fire Code

The California Fire Code (24 California Code of Regulations [CCR] 9) is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, and premises (California Building Standards Commission 2022).

California Public Utilities Commission Standards

General Order 95

CPUC General Order (GO) 95 applies to construction and reconstruction of overhead electric lines in California. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. Section 35 of GO 95 covers all aspects of design, construction, and O&M of electrical power lines, as well as fire safety hazards. The CPUC has promulgated various rules to implement the fire safety requirements of GO 95, including the following:

- GO 95, Rule 18A, which requires utility companies to place a high priority on the correction of significant fire hazards in high fire-threat areas of California and that each utility company establish an auditable maintenance program.

- GO 95, Rule 31.1, which generally requires that overhead electrical lines be designed, constructed, and maintained in accordance with accepted good practices for the given conditions known at the time.

- GO 95, Rules 31.2, 80.1A, and 90.1B, which set the minimum frequency for inspections of aerial communication facilities located in close proximity to power lines in high fire-threat areas throughout California.

- GO 95, Rule 35, Table 1, Case 14, which requires increased radial clearances between bare-line conductors and vegetation in high fire threat areas of southern California.

- GO 95, Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires.

- GO 95, Rule 43.2.A.2, which requires that for lines located within Tier 2 or Tier 3 zones, the wind loads required in Rule 43.2.A.1 be multiplied by a wind load factor of 1.1.

- GO 95, Appendix E, which authorizes increased time-of-trim clearances between bare line conductors and vegetation in high fire-threat areas of southern California.

General Order 165

GO 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "patrol" inspections, which are defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards; and these inspections must occur at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every 5 years for all overhead conductor and cables, transformers, switching/protective devices, and regulators/capacitors. By July 1 of each year, each utility subject to this GO must submit an annual report of its inspections for the previous year under penalty of perjury.

GO 165, Appendix A, Table 1 also requires more frequent patrol inspections of overhead power line facilities in rural, high fire threat areas of southern California.

General Order 166

GO 166 applies to all electric utilities subject to the jurisdiction of the CPUC with regard to matters relating to electric service reliability and/or safety. This standard requires that utility companies outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. Fire Prevention Plans created by utility companies are required to identify specific parts of the utility's service territory where fire-exacerbating conditions may occur simultaneously. Fire mitigation planning and reporting requirements are outlined in the following standards:

- GO 166, Standard 1.E requires each electric utility in southern California to develop and submit a plan to reduce the risk of fire ignitions by overhead facilities in high fire threat areas during extreme fire-weather events.

- GO 166, Standard 11 requires that utilities report annually to the CPUC regarding compliance with GO 166.

California Code of Regulations

Title 8, Section 5194 Hazard Communication

The Division of California Occupational Safety and Health (Cal/OSHA) protects workers and the public from safety hazards. Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including preparation of emergency action and fire prevention plans.

Cal/OSHA also enforces hazard communication program regulations. Cal/OSHA standards are generally more stringent than federal regulations. Construction workers and operational employees associated with the Proposed Project would be subject to these requirements.

Title 14, Sections 1250 to 1258

Title 14, Sections 1250 to 1258 of the CCR provide clarification for when and where the electric pole and tower firebreak clearance standards and electric conductor clearance standards outlined in California Public Resources Code (PRC) Sections 4292 to 4296 apply. Sections 1252 to 1258 are summarized in the following:

- Section 1252 states that the Director of CAL FIRE will apply PRC Sections 4292 to 4296 in any mountainous land, forest-covered land, brush-covered land, or grass-covered land within SRAs unless specifically exempted by Title 14, Sections 1255 and 1257 of the CCR.

- Section 1253 states that the minimum firebreak and clearance provisions of PRC Sections 4292 to 4296 are applicable during the declared CAL FIRE fire season for a respective county. The Director will post the declaration on the CAL FIRE website.

- Section 1254 specifies that the firebreak clearances required by PRC Section 4292 are applicable within an imaginary cylindroidal space of 10 feet measured horizontally from the outer circumference of the specified pole or tower on which a switch, fuse, transformer, or lightning arrester is attached. The clearance space is applicable to dead-end and corner poles unless the pole or tower is exempt from minimum clearance requirements by provisions of Title 14, Section 1255 of the CCR or PRC Section 4296. Flammable vegetation and materials located wholly or partially within the firebreak space will be removed according to the height and distance specifications in Section 1254.

- Section 1255 describes the conditions for which minimum clearance provisions of PRC 4292 are not required around poles and towers, including line junction, corner, and dead-end poles and towers.

- Section 1256 states that the minimum clearance required by PRC Section 4293 will be maintained with the specified distances measured at a right angle to the conductor axis at any location outward throughout an arc of 360 degrees. Minimum clearance includes any position through which the conductor may move, considering the size and material of the conductor and any position through which the vegetation may sway.

- Section 1257 outlines conditions where conductors are exempt from the minimum clearance provisions of PRC Section 4293 that are applicable in SRAs.

- Section 1258 states that when electric conductors and subordinate elements are fastened to living, sound trees (commonly referred to as tree lines), the requirements of PRC Sections 4292 and 4293 will apply the same as to a pole or tower line.

California Public Utilities Code Division 4.1, Chapter 6, Sections 8385 to 8389

Chapter 6, Wildfire Mitigation was added to Division 4.1 of the Public Utilities Code in 2016. Sections 8385 to 8389 of the chapter establish wildfire mitigation requirements for privately and publicly owned utility companies. The chapter mandates that each electrical corporation constructs, maintains, and operates its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment. Each electrical corporation is required annually to prepare and submit a WMP to the CPUC's Wildfire Safety Division (WSD) for review and approval. Beginning in 2020, the WMPs are required to cover at least a 3-year period. As of 2021, the WSD transitioned to the Office of Energy Infrastructure and Safety (CPUC 2021b). Furthermore, Chapter 6 of the Public Utilities Code outlines requirements for the qualifications of electrical line clearance tree trimmers.

Health and Safety Code Section 13009

Section 13009 of the Health and Safety Code permits CAL FIRE to file civil actions to recover fire suppression costs from a party who causes a fire either negligently or in violation of a law. CAL FIRE established a Civil Cost Recovery Program to satisfy the statute's intent to assign financial responsibility to culpable parties and to prevent fires through deterrence.

California Public Resources Code Sections 4292 and 4293

Section 4292 of the California PRC states the following:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line…shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

PRC Section 4293 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
> b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
> c) For any line which is operating at 110,000 or more volts, 10 feet

> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

National Weather Service Red Flag Fire Warning and Weather Watches

Like PRC Sections 4292 and 4293, red flag warnings and fire-weather watches aim to prevent fire events and reduce the potential for substantial damage. When extreme fire weather or behavior is present or predicted in an area, a red flag warning or fire-weather watch may be issued to advise local fire agencies that these conditions are present. The National Weather Service issues red flag warnings and fire-weather watches, and CAL FIRE has provided safety recommendations for preventing fires, including clearing and removing vegetation, and ensuring the proper use of equipment.

2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in California. The goals are meant to establish—through local, state, federal, and private partnerships—a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire. In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area (CAL FIRE 2019).

Power Line Fire Prevention Field Guide 2021 Edition

CAL FIRE, PG&E, Southern California Edison Company, San Diego Gas & Electric Company, and other California electric utilities have mutually developed a comprehensive field guide for their personnel. Its purpose is to provide information and guidance to the personnel of the fire service agencies and electrical operators for minimum uniform application within the areas of their respective jurisdiction and franchise responsibilities. In addition to the safety of the public, the guide details fire hazard reduction maintenance procedures for the safety of conductors and certain hardware (CAL FIRE 2021).

5.20.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC GO 131-D, Section XIV.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities

> constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Proposed Project. Therefore, this section includes a summary for local related policies, plans, or programs for informational purposes.

Solano County

Sonoma-Lake-Napa Unit Strategic Fire Plan

The 2023 Strategic Fire Plan of CAL FIRE's Sonoma-Lake-Napa Unit focuses on goals set forth to provide safety and protection to its firefighters and civilians, reduce property losses and firefighting cost, and enhance the ecosystem health in Colusa, Lake, Napa, Solano, Sonoma, and Yolo counties. The plan includes pre-fire management priorities and tactics and an ignition management plan.

Solano County Emergency Operations Plan

The 2017 Solano County Emergency Operations Plan (EOP) "addresses Solano County's planned response to extraordinary emergency situations associated with natural, technological and human caused emergencies or disasters within or affecting Solano County" (Solano County 2017). The EOP provides an overview of existing hazards that Solano County is susceptible to and reviews the county's established operations that aim to effectively address impacts associated with hazards.

Solano County Multi-Jurisdictional Hazard Mitigation Plan

The 2022 Solano County Multi-Jurisdictional HMP includes a risk assessment of hazards in Solano County and mitigation strategies to reduce the effects of those hazards. The high-priority hazards identified in the HMP include climate change, drought, earthquake, high winds, extreme weather, slope failure, and wildfire. One essential goal of the Solano County HMP is to "minimize damage to critical infrastructure and property and minimize interruption of essential services and activities" (Solano County 2022).

Solano County General Plan

The Public Health and Safety Element of the Solano County General Plan establishes policies and programs to protect the community from risks associated with wildfire hazards. The Public Health and Safety Element includes the following policies:

- HS.P-20: Require that structures be built in fire defensible spaces and minimize the construction of public facilities in areas of high or very high wildfire risk.
- HS.P-21: Prohibit non-farm-related development and road construction for public use in areas of extreme wildfire risk.

- HS.P-23: Work with fire districts including the Sonoma-Lake-Napa Fire Unit, other agencies and property owners to ensure consistency with related plans including the Unit Fire Plan and the Solano County Emergency Operations Plan, and to coordinate efforts to prevent wildfires and grassfires through fire protection measures such as consolidation of efforts to abate fuel buildup, access to firefighting equipment, and provision of water service.

Sacramento County

Amador-El Dorado Unit 2023 Strategic Fire Plan

The 2023 Strategic Fire Plan of CAL FIRE's Amador-El Dorado Unit aims to support objects such as fuels reduction, the development of safe ingress and egress routes, and fire safe clearances standards around structures in Amador, El Dorado, Alpine, Sacramento, and portions of San Joaquin County.

Sacramento County Emergency Operations Plan

The 2022 Sacramento County EOP serves as the "principal guide for the County's response, management, and recovery from real or potential emergencies and disasters within its designated geographic boundaries" (Sacramento County 2022). The EOP guides the county's response to large-scale disasters and extraordinary emergency situations. The EOP summarizes the existing hazards in Sacramento County, identifies the county's capability of responding to hazards, and reviews mitigation measures to reduce the impacts of hazards.

Sacramento County Multi-Jurisdictional Local Hazard Mitigation Plan

The 2021 Sacramento County Multi-Jurisdictional Local HMP presents goals and actions to reduce or eliminate the impacts of hazards on people and property. The HMP assesses the existing hazards in the county and identifies the hazards most likely to occur, which include floods from localized storm water, severe weather conditions, subsidence, and wildfire. One of the primary goals of the Sacramento County HMP is to "provide protection for critical facilities, infrastructure, utilities, and services from hazard impacts, to include hardening and other efforts to establish redundancy and reliability, to prevent or minimize loss, and to facilitate recovery" (Sacramento County 2021).

Sacramento County General Plan

The Safety Element of the Sacramento County General Plan (amended 2017) establishes policies and programs to protect the community from risks associated with wildfire hazards. The Safety Element includes the following policies:

- SA-23: The County shall require that all new development meets the local fire district standards for adequate water supply and pressure, fire hydrants, and access to structures by firefighting equipment and personnel.

- SA-24: The County shall require, unless it is deemed infeasible to do so, the use of both natural and mechanical vegetation control in lieu of burning or the use of chemicals in areas where hazards from natural cover must be eliminated, such as levees and vacant lots.

- SA-27: The County shall require, where appropriate, the use of fire resistant landscaping and building materials for new construction developments that are cost effective.

- SA-28: The County shall encourage and require, to the maximum extent feasible, automatic fire sprinkler systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

- SA-29: The County and fire districts will work together to regulate hazardous materials to mitigate emergency responses.

Contra Costa County

Santa Clara Unit 2023 Strategic Fire Plan

The 2023 Strategic Fire Plan of CAL FIRE's Santa Clara Unit documents an assessment of the fire situation in the unit, includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions within five counties (Santa Clara, Alameda, Contra Costa, San Joaquin, and Stanislaus) of CAL FIRE Santa Clara.

Contra Costa County Emergency Operations Plan

The 2015 Contra Costa County EOP provides "the basis for a coordinated response before, during and after an emergency affecting Contra Costa County" (Contra Costa County 2015). The EOP guides the county's response to large-scale disasters and extraordinary emergency situations and identifies the mechanisms in place to effectively respond to natural hazards in Contra Costa County, such as earthquakes, landslides, and floods. The Contra Costa County EOP covers the City of Pittsburg.

Contra Costa County Hazard Mitigation Plan

The 2018 Contra Costa County HMP identifies "long-term and short-term policies, programs, projects, and other activities to alleviate death, injury, and property damage that can result from a disaster" (Contra Costa County 2018). The HMP assigns ranks to natural hazards in Contra Costa County, with the highest-ranked hazards being earthquakes and landslides. The HMP stresses the importance of protecting utilities, including transmission lines, from damage associated with natural hazards to ensure essential services remain available to Contra Costa County residents during disasters. The Contra Costa County HMP covers the City of Pittsburg.

Contra Costa General Plan

The Public Facilities/Services Element of the Contra Costa County General Plan establishes policies for fire services. The Public Facilities/Services Element includes the following policies:

- 7-62: The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in all central business district (CBD), urban and suburban areas. (These areas are defined in Section 4).

- 7-65: Needed upgrades to fire facilities and equipment shall be identified as part of project environmental review and area planning activities, in order to reduce fire risk and improve emergency response in the County.

- 7-72: Special fire protection measures shall be required in high risk uses (e.g. mid-rise and high-rise buildings, and those developments in which hazardous materials are used and/or stored) as conditions of approval or else be available by the district prior to approval.

- 7-79: Local fire agencies shall be encouraged to identify and monitor uses involving the handling and storage of hazardous materials.

City of Pittsburg General Plan

The City of Pittsburg General Plan's Health and Safety Chapter and Public Facilities Chapter were reviewed, and no wildfire-related policies relevant to the Proposed Project were identified.

5.20.3 Impact Questions

5.20.3.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For wildfire, the CEQA Environmental Checklist asks if the Proposed Project is located in or near SRAs or lands classified as very high FHSZs, would the Proposed Project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?

- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Proposed Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

5.20.3.2 Additional CEQA Impact Questions

Pursuant to the CPUC's Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for wildfire.

5.20.4 Impact Analysis

5.20.4.1 Wildfire Impact Analysis

5.20.4.1.1 If located in or near SRA lands or lands classified as very high FHSZ, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction

LSPGC and PG&E Proposed Project Components

No Impact. The LSPGC and PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. The closest SRA lands are approximately 2 miles southwest of PG&E's existing Pittsburg Substation, and the closest very high FHSZ is approximately 8 miles southwest of PG&E's existing Pittsburg Substation. Construction of the LSPGC and PG&E Proposed Project components would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan because these components would be located in sparsely populated regions of Solano and Sacramento counties, and construction of the LSPGC and PG&E Proposed Project components in Contra Costa County would be limited to a small area. As described in Section 5.9 Hazards, Hazardous Materials, and Public Safety, the EOPs of Solano County, Sacramento County, and Contra Costa counties serve as guidance for response to large-scale disasters and extraordinary emergency situations. The plans do not describe or recommend specific evacuation routes within the counties. Given the proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, LSPGC 230 kV Submarine Segment, PG&E 500 kV Interconnection, and PG&E 12 kV Distribution Line being located in a sparsely populated region of Solano and Sacramento counties, these components would have no impact on the implementation of the Solano County EOP or Sacramento County EOP. Due to the limited scope of the proposed LSPGC 230 kV Underground Segment, construction would have no impact on the implementation of the Contra Costa County EOP.

The proposed LSPGC Telecommunications Line may require temporary lane closures. Temporary closures would be coordinated with local jurisdictions and emergency service providers through the encroachment permit process and any required traffic control plans. It is anticipated that these permits would require the application of appropriate traffic control measures and implementation of a traffic control plan during this work to ensure that potential changes to emergency service ratios would be minimized, egress would be maintained, and emergency access would be maintained. Therefore, no impact would occur.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously discussed, the LSPGC and PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. The LSPGC and PG&E Proposed Project components would be operated and monitored remotely. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted, and a small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed

LSPGC 230 kV Submarine Segment would not require planned maintenance. Routine maintenance activities would likely not impair the implementation of or physically interfere with the counties' EOPs due to the small crew size and frequency of dispatch. Maintenance of the PG&E Proposed Project components would be incorporated into PG&E's existing programs, and maintenance activities would continue as they currently do in the area. Therefore, no impact would occur.

5.20.4.1.2 If located in or near SRA lands or lands classified as very high FHSZ, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction

LSPGC Components

No Impact. As previously discussed, the LSPGC Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. The wildfire modeling analysis in Attachment 5.20-A: Wildfire Technical Report shows that the elevation along the Proposed Project ranges from sea level to approximately 300 feet. The LSPGC Proposed Project components would be sited in a low fire risk area. Given the low-load grass fuels in and along the Proposed Project and the lack of large fire history in the area, fires would be uniquely suppressible (CloudFire 2023).

As discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety, construction activities have the potential to start a fire due to the increased presence of vehicles, equipment, and human activity in areas of elevated fire hazard severity. In particular, heat or sparks from construction vehicles or equipment have the potential to ignite dry vegetation. However, construction of the Proposed Project would not exacerbate wildfire risks with implementation of the Proposed Project-specific Construction Fire Prevention Plan (CFPP), prepared in accordance with applicant-proposed measure (APM) FIRE-1. The CFPP would identify Proposed Project-specific activities that could exacerbate fire risks, as well as measures (e.g., tools and procedures) to address said risks.

Few residents are located in the vicinity of the LSPGC Proposed Project components north of the Sacramento River, and these facilities would not contain occupants. Although residents are in the vicinity of the proposed LSPGC 230 kV Underground Segment and LSPGC Telecommunications Line, these components would be constructed in an area where the fire threat is less than the minimum fire threat category (CloudFire 2023). Therefore, the LSPGC Proposed Project components would not potentially expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slope, prevailing winds, or other factors; and no impact would occur.

PG&E Components

No Impact. The PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ and would be sited in a low fire risk area. While construction activities have the potential to start a fire, construction of the PG&E Proposed Project

components would follow standard fire risk management procedures, in accordance with PG&E's Construction Measure (CM) FIRE-1. These procedures require that equipment and vehicles would be equipped with spark arrestors, a backpack pump filled with water, a shovel, and a fire extinguisher, as well as training for crew members regarding safe work practices, work permit programs, and fire response. Few people live in the vicinity of the PG&E Proposed Project components, the facilities would not contain occupants, and the components would not potentially expose people to pollutants from wildfire. Thus, no impact would occur.

Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously discussed, the LSPGC and PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. O&M of the Proposed Project would primarily be managed remotely, with only small crews dispatched to perform inspections and maintenance. Maintenance of the PG&E Proposed Project components would be incorporated into PG&E's existing programs, and maintenance activities would continue as they currently do in the area. Existing transmission infrastructure is in the area, and the addition of the Proposed Project facilities would therefore not introduce a new fire risk in the area. As required by the California Office of Energy Infrastructure Safety, LSPGC and PG&E would each implement their respective WMPs, which address wildfire risk analysis, risk-informed decision making, risk evaluation, grid design, O&M, vegetation management, situational awareness, emergency preparedness, community outreach and engagement, and public safety power shutoffs. As a result, no impact would occur.

5.20.4.1.3 If located in or near SRA lands or lands classified as very high FHSZ, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction, Operations and Maintenance

LSPGC Components

No Impact. As previously discussed, the LSPGC Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. As described in Chapter 3 – Project Description, the Proposed Project would involve the construction of new transmission and distribution lines. These construction activities have the potential to exacerbate fire risk or cause temporary impacts to the environment due to the increased presence of vehicles, equipment, and human activity in areas of elevated fire hazard severity.

Under Section 35 of GO 95, the CPUC regulates all aspects of design and construction of electrical power lines and fire safety hazards for utilities subject to its jurisdiction (CPUC 2020). In addition, Fire Prevention Standards for Electric Utilities (14 CCR Sections 1250-1258) provide definitions, maps, specifications, and clearance standards for projects under the jurisdiction of PRC Sections 4292 and 4293 in SRAs. LSPGC would create a fire break around the proposed LSPGC Collinsville Substation in accordance with all applicable state and federal regulations.

During construction activities that are considered "hot work" (e.g., welding, grinding, or any other activity that creates hot sparks), a 10-foot buffer around that activity would be implemented, and vegetation would be cleared to ensure sparks do not create a fire hazard. For activities that do not produce sparks but still have the potential to produce a fire hazard (e.g., ground rod or ground wire installation), a 5-foot buffer would be cleared of vegetation, and additional details (i.e., handling sparks) would be provided in the CFPP. Therefore, no impact would occur.

O&M of the LSPGC Proposed Project components would primarily be managed remotely, with only small crews dispatched to perform inspections and maintenance. Thus, O&M would not introduce a new risk as existing transmission facilities exist in the vicinity of the Proposed Project and also require regular inspections and maintenance. In addition, LSPGC would implement the fire prevention practices for maintenance activities as described in its WMP. As a result, no impact would occur.

PG&E Components

No Impact. As previously discussed, PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. The Proposed Project would involve the construction of new transmission and distribution lines, which would have the potential to exacerbate fire risk or cause temporary impacts to the environment due to the increased presence of vehicles, equipment, and human activity in areas of elevated fire hazard severity. However, construction would be conducted in accordance with CM FIRE-1, which would ensure that PG&E would follow standard procedures for fire risk management, safety, and response. Maintenance of the PG&E Proposed Project components would be incorporated into PG&E's existing programs, and maintenance activities would continue as they currently do in the area. Therefore, no impact would occur.

5.20.4.1.4 If located in or near SRA lands or lands classified as very high FHSZ, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

No Impact. As previously discussed, the LSPGC and PG&E Proposed Project components would not be located within SRA lands or lands classified as very high FHSZ. The Proposed Project would be located in a primarily uninhabited area with very little potential for impacts to the public or structures in the event of runoff, flooding, or landslides. The Proposed Project sites would be graded to maintain the direction of natural drainage. The proposed LSPGC Collinsville Substation pad would be sloped to allow for sheet-flow from north to south to facilitate drainage to a proposed stormwater detention basin on the southern side of the substation. As described in Section 5.10 Hydrology and Water Quality, the proposed LSPGC Collinsville Substation pad would be sloped to allow flows to continue in a way that is similar to pre-construction conditions and not change the potential for flooding or landslides. The proposed LSPGC Collinsville Substation would have an approximate slope of 1 percent from north to south.

The proposed LSGPC 230 kV Overhead Segment, LSPGC 230 kV Submarine Segment, and LSPGC 230 kV Underground Segment would be partially located within a 100-year Federal Emergency Management Agency flood hazard zone with a 1-percent chance of flooding annually and a 26-percent chance of flooding over a 30-year period. Approximately 0.3 mile of the proposed LSPGC Telecommunications Line would be located in an area with a 0.2-percent chance of flooding annually and 0.2 mile of the alignment would be located in an area with a 1-percent chance of flooding annually. The LSPGC and PG&E Proposed Project components would not increase the existing flood risk level as they would be installed underground or designed to allow flood flows to flow through or around them. In addition, a stormwater detention basin would be installed on the southern portion of the proposed LSPGC Collinsville Substation to facilitate the return of water to the groundwater basin. A Storm Water Pollution Prevention Plan (SWPPP), which would include erosion-reducing measures and site stabilization procedures, would be prepared and implemented in accordance with the requirements of the General Construction Permit.

O&M of the LSPGC and PG&E Proposed Project components would primarily be managed remotely, with only small crews dispatched to perform inspections and maintenance. O&M activities would not change the slope of the Proposed Project area or affect any existing drainages. Thus, O&M of the LSPGC and PG&E Proposed Project components would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Thus, no impact would occur.

5.20.4.2 Behavior Modeling

Section 5.20.4.2 of the CPUC Guidelines requires fire behavior modeling to support the analysis of wildfire risk. To meet this requirement, a wildfire analysis was conducted using the ELMFIRE open-source operational fire spread model. The results of the fire behavior model indicate that spread rate and flame length are expected to be low to moderate along the LSPGC and PG&E Proposed Project components' alignments. The dominance of low-load grass fuels in and along the LSPGC and PG&E Proposed Project components and the lack of large fire history in the area support that fires in the area are suppressible.

5.20.4.3 Wildfire Management

During O&M of the Proposed Project, LSPGC and PG&E would implement their current WMPs to manage wildfire risk in the area. LSPGC's and PG&E's 2023-2025 WMPs are provided in Attachment 3-B: Wildfire Mitigation Plans. No special procedures for wildfire management, beyond those addressed in the WMPs or required by regulation, are included as part of the Proposed Project. The LSPGC and PG&E Proposed Project components would not be located in a CPUC-identified HFTD. Therefore, enhanced inspections described in the WMPs would not apply.

5.20.5 CPUC Draft Environmental Measures

The CPUC recommended a draft environmental measure for wildfire associated with the preparation of a CFPP. The recommended environmental measure is included in Section 5.20.6 Applicant-Proposed Measures as APM FIRE-1.

5.20.6 Applicant-Proposed Measures

5.20.6.1 Wildfire Applicant-Proposed Measures

The following APM would be implemented for the LSPGC Proposed Project components:

- **APM FIRE-1: Construction Fire Prevention Plan.** A Proposed Project-specific CFPP would be prepared and submitted to the CPUC for review prior to initiation of construction. The CFPP would be fully implemented throughout the construction period and would include, at a minimum, the following:

  – The purpose and applicability of the CFPP.
  – Responsibilities and duties.
  – Preparedness training and drills.
  – Procedures for fire reporting, response, and prevention that include the following:

    - Identification of daily site-specific risk conditions,
    - The tools and equipment needed on vehicles and to be on hand at sites,
    - Reiteration of fire prevention and safety considerations during tailboard meetings, and
    - Daily monitoring of the red flag warning system with appropriate restrictions on types and levels of permissible activity.

  – Coordination procedures with federal and local fire officials.
  – Crew training, including fire safety practices and restrictions.
  – Method(s) for verifying that all CFPP protocols and requirements are being followed.

  A Proposed Project Fire Marshal or similar qualified position would be established to enforce all provisions of the CFPP, as well as perform other duties related to fire detection, prevention, and suppression for the Proposed Project. Construction activities would be monitored to ensure implementation and effectiveness of the CFPP.

5.20.7 PG&E Construction Measures

5.20.7.1 Wildfire PG&E Construction Measures

The following CM would be implemented for the PG&E Proposed Project components:

- **CM FIRE-1: Fire Risk Management.** PG&E would follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Proposed Project personnel would be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads would have federally approved or State-approved spark arrestors. All off-road vehicles would be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens would be used when welding. In addition, during fire “red flag” conditions (as determined by CAL FIRE), welding would be curtailed. Every fuel truck would carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials would be removed from equipment parking and storage areas.

5.20.8 Potential Future Substation Expansion

As described in Section 3.3.6 Future Expansions and Equipment Lifespans, the California Independent System Operator (CAISO) requirements for the Proposed Project include providing sufficient space within the proposed LSPGC Collinsville Substation property to incorporate potential future incremental modification of the substation to support increased future renewable energy generating capacity on the electrical grid. If implemented, the potential future modification would require the proposed LSPGC Collinsville Substation's western fence line to be extended approximately 220 feet to add approximately 4 acres to the site's footprint. The potential modification would be determined by CAISO planning or as needed by interconnection agreements. The estimated timeframe would be approximately 10 years after the energization of the proposed LSPGC Collinsville Substation.

The impacts to wildfire risk associated with the potential modification of the proposed LSPGC Collinsville Substation would be similar in nature as the Proposed Project buildout because the modification area remains in the Proposed Project footprint, which is within an area defined as a low fire risk. As such, the potential modification would not result in increased wildfire risk, and no additional mitigation measures or APMs would be required. If modification of the proposed LSPGC Collinsville Substation is required in the future, LSPGC would seek the appropriate permit(s) from the CPUC, and a project-level CEQA analysis would be prepared to evaluate impacts associated with the modification.

5.21 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?			✓	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			✓	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

This section provides an analysis of the mandatory findings of significance associated with the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project).

5.21.1 Impact Questions

5.21.1.1 CEQA Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For mandatory findings of significance, the CEQA Environmental Checklist asks if the Proposed Project would:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the

number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

- Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

- Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

5.21.2 Additional CEQA Impact Questions

Pursuant to the California Public Utility Commission's (CPUC's) Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, there are no additional CEQA impact questions required for mandatory findings of significance.

5.21.3 Impact Analysis

5.21.3.1 Mandatory Findings of Significance Impact Analysis

5.21.3.1.1 Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. As discussed in Section 5.4 Biological Resources, the LSPGC Proposed Project components would result in less-than-significant impacts to existing habitats, wetlands, and waterways with implementation of applicant-proposed measures (APMs). All LSPGC Proposed Project components, with the exception of the proposed LSPGC 230 kV Submarine Segment (Terrestrial Proposed Project Components), would temporarily impact approximately 0.8 acre of three sensitive natural communities and would permanently impact less than 0.1 acre of one sensitive natural community. Further, construction of the Terrestrial Proposed Project Components would cause a loss of areas that contain suitable microhabitat conditions for special-status plants. Wetland areas supporting special-status plants and sensitive vegetation communities would be avoided by construction activities to the maximum extent feasible in accordance with APM BIO-4, reducing the likelihood of occurrence and the potential risk to special-status plants that may be found in the vicinity of wetland habitats to a less-than-significant level. Pre-construction surveys would be conducted during the appropriate blooming period to identify and avoid impacts to special-status plants, in accordance with APM BIO-5. All construction activities that could result in take of special-status plants would be monitored by a qualified biologist in accordance with APM BIO-6 to ensure avoidance. In addition, vehicles

would be cleaned prior to their first arrival on site to reduce the potential to spread noxious weeds, in accordance with APM BIO-7. All terrestrial areas that would be temporarily disturbed by Proposed Project activities would be restored to approximate pre-construction conditions or better in accordance with APMs BIO-2 and GEO-1.

The Proposed Project's impacts on salt marsh harvest mouse (*Reithrodontomys raviventris*), northwestern pond turtle (*Actinemys marmorata*), avian and bat species, and aquatic species would be less than significant with the incorporation of APMs BIO--2, BIO-3, BIO-6, and BIO-8 through BIO-25, which would require the following:

- All workers would attend a Worker's Environmental Awareness Program (WEAP) training informing all construction personnel of the resource protection and avoidance measures.
- All temporarily disturbed areas would be restored in accordance with a Proposed Project-specific restoration plan.
- Any construction activities within suitable special-status species habitat that may impact sensitive biological resources would be monitored by a qualified biologist.
- Vehicles would adhere to a speed limit of 15 miles per hour (mph) on unpaved access roads without a posted speed limit, Proposed Project-specific construction routes, and within temporary work areas to reduce the potential for animal mortality.
- All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species.
- All work areas would be clearly delineated and construction activities restricted to delineated work areas.
- Prior to initial vegetation clearance and ground-disturbing activities, a biologist would conduct pre-construction surveys of the Proposed Project work area for special-status wildlife.
- A nesting bird survey would be conducted in the area where construction work would occur when it is not feasible to avoid construction during the nesting or breeding season.
- All lighting would be selectively placed, shielded, and directed downward and away from sensitive habitat and resources to the maximum extent practicable.
- Vegetation and tree removal would be minimized to the extent feasible.
- An in-water work window of July 1 to November 30 would be enacted to minimize potential impacts to fish during in-water work.

- To minimize the potential for fish to be entrained by the Proposed Project, any pumps or water intakes used by the Proposed Project would be screened in accordance with the following California Department of Fish and Wildlife (CDFW) and National Oceanic and Atmospheric Administration National Marine Fisheries Service screening requirements for water diversions within the Sacramento-San Joaquin River Delta (Delta).

- In-water pile driving would be conducted with a vibratory hammer to the greatest extent feasible; however, when installation with an impact hammer is required, additional measures would be employed.

- To reduce the potential effects of invasive species in the Delta, aquatic vessels would follow all maritime regulations relating to the exchange of ballast water to prevent the spread of invasive species from outside ports, any in-water fill materials would be new and not salvaged from areas outside of San Francisco Bay, and any pumps or in-water equipment that may be needed during construction would be cleaned and dried for at least 72 hours prior to first being used on the Proposed Project.

- An aquatic spill prevention and control plan would be developed and implemented for the Proposed Project throughout all phases of construction.

- Prior to installation of submarine cables and if the cable alignment would cross an area of known contamination, an aquatic sediment screening and testing program would be developed to evaluate the risk of exposing hazardous sediments to the marine environment.

- Where possible, the in-river components of the Proposed Project would include the installation of light-transmitting surfaces allowing for a minimum of 40 percent light transmission to the waters below. In the event that light-transmitting surfaces cannot be installed for safety, structural, or accessibility reasons, the Proposed Project would mitigate for areas permanently shaded by the overwater structure.

The LSPGC Proposed Project components would cross potentially jurisdictional wetlands and waters; however, implementation of APM BIO-4, as well as compliance with permits and authorizations issued for the Proposed Project, would ensure impacts would be less than significant. A Proposed Project-specific Storm Water Pollution Prevention Plan (SWPPP) would be developed and implemented; the SWPPP would include best management practices (BMPs) to prevent erosion and sedimentation into wetlands and streams and would protect water quality during construction. APM BIO-4 would require avoiding or minimizing impacts to all jurisdictional waters and riparian habitat by siting activities outside of these areas to the extent feasible. Although the proposed LSPGC 230 kV Submarine Segment would cross the Delta, which is a jurisdictional water, LSPGC would work closely with the United States (U.S.) Army Corps of Engineers, State Water Resources Control Board, and CDFW to obtain the appropriate permits and to ensure that impacts to waters of the U.S. and waters of the state are adequately compensated for, resulting in less-than-significant impacts.

As discussed in Section 5.5 Cultural Resources, only one previously recorded resource, historic transmission lines within the proposed Area of Potential Impacts/Area of Potential Effects (API/APE), is recommended as eligible for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). Six new resources were recorded within the proposed API/APE that are not being recommended as eligible for listing in the NRHP or CRHR. The LSPGC Proposed Project components would not result in direct or indirect effects to the NRHP-nominated resource that is adjacent to the proposed API/APE or to the transmission line that is recommended as eligible for the NRHP/CRHR. The cables of the proposed LSPGC 230 kV Submarine Segment would be located over 150 feet from the three potentially significant submerged resources located within the proposed API/APE. As a result, these resources would be avoided by the proposed LSPGC 230 kV Submarine Segment. A submerged paleolandform was identified within the proposed API/APE and would be crossed by the proposed LSPGC Submarine Segment; however, the probability is low for the presence of cultural material in the paleolandform. The LSPGC Proposed Project components' impacts on cultural resources would be less than significant with the incorporation of APMs CUL-1 through CUL-4, which would require the following:

- All workers on the Proposed Project site would attend a WEAP training informing all construction personnel of how to identify potential cultural resources and human remains during the construction process, applicable laws and regulations pertaining to historic preservation, and proper procedures following a discovery.

- Cultural resources surveys would be performed for any portion of the Proposed Project area not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys would be subject to a 50-foot buffer around the boundary of each respective resource and designated as environmentally sensitive areas.

- All work within 50 feet of a potential discovery would be halted until a qualified archaeologist inspects the discovery and determines whether further investigation is required.

- Prior to construction, the paleolandform would be evaluated through coring and soil analysis. If this analysis indicates the potential for cultural resources, a Paleolandform Monitoring Plan would be developed, approved by the CPUC, and implemented during submarine cable installation within 500 feet of the potential cultural resources.

Overall, the LSPGC Proposed Project components would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major period of California history or prehistory. Therefore, less-than-significant impacts would occur.

PG&E Components

Less-than-Significant Impact. As discussed in Section 5.4 Biological Resources, the PG&E Proposed Project components would result in less-than-significant impacts to existing habitats, wetlands, and waterways with implementation of PG&E's Construction Measures (CMs). No sensitive natural communities overlap proposed permanent impact areas for PG&E Proposed Project components; however, construction of the PG&E Proposed Project components would cause a loss of areas that contain suitable microhabitat conditions for special-status plants. Wetland areas supporting special-status plants and sensitive vegetation communities would be avoided by construction activities to the maximum extent feasible in accordance with CM BIO-4, reducing the likelihood of occurrence and the potential risk to special-status plants in the vicinity of wetland habitats to a less-than-significant level. Occurrences of special-status plant species would be avoided to the extent practicable and PG&E Proposed Project activities would occur in special-status plant habitat after senescence, in accordance with CM BIO-5. Any covered activities within covered species habitat that require work over a period of 2 weeks or greater would be monitored by a qualified biologist in accordance with CM BIO-6 to ensure avoidance. In addition, vehicles would be cleaned prior to entering a new work site to reduce the potential to spread noxious weeds, in accordance with CM BIO-7. If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew would revegetate the area in accordance with CM BIO-2.

The Proposed Project's impacts on salt marsh harvest mouse, northwestern pond turtle, and avian and bat species would be less than significant with the incorporation of CMs BIO-2, BIO-3, BIO-6, and BIO-8 through BIO-13, which would require the following:

- All workers would attend a WEAP training informing all construction personnel of the resource protection and avoidance measures.
- Areas would be revegetated where covered activities disturb more than 0.1 acre of habitat for a covered species in grasslands.
- Any covered activities within covered species habitat that require work over a period of 2 weeks or more would be monitored by a qualified biologist.
- Vehicles would adhere to a speed limit of 15 mph on unpaved access roads, Proposed Project-specific construction routes, and within temporary work areas to reduce the potential for animal mortality.
- All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species.
- All work areas would be clearly delineated and construction activities restricted to delineated work areas.
- During the nesting or breeding season, nesting bird surveys would be conducted in the vicinity of planned construction activities, as appropriate.

- All lighting would be selectively placed, shielded, and directed downward and away from sensitive habitat and resources to the maximum extent practicable.

- Exclusion zones and damage to adjacent trees would be avoided to the extent practicable when it is necessary to fell trees.

The PG&E Proposed Project components would cross potentially jurisdictional wetlands and waters; however, implementation of CM BIO-4, as well as compliance with permits and authorizations issued for the Proposed Project, would ensure impacts would be less than significant. CMs BIO-1, BIO-2, and BIO-4 would require avoiding or minimizing impacts to all jurisdictional waters and riparian habitat by siting activities outside of these areas to the extent feasible, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts.

As discussed in Section 5.5 Cultural Resources, only one previously recorded resource, historic transmission lines within the proposed API/APE, is recommended as eligible for listing in the NRHP or CRHR. Six new resources were recorded within the proposed API/APE that are not being recommended as eligible for listing in the NRHP or CRHR. The PG&E Proposed Project components would not result in direct or indirect effects to the NRHP-nominated resource that is adjacent to the proposed API/APE or to the transmission line that is recommended as eligible for the NRHP/CRHR. The PG&E Proposed Project components' impacts on cultural resources would be less than significant with the incorporation of CMs CUL-1 through CUL-3, which would require the following:

- All workers on the Proposed Project site would attend a WEAP training informing all construction personnel of types of cultural resources or fossils that could occur at the Proposed Project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource, human remain, or fossil discovery; and penalties for disturbing cultural or paleontological resources.

- Sites would be marked with flagging tape, safety fencing, and/or sign designating it as an "environmentally sensitive area" to ensure that PG&E construction crews and heavy equipment would not intrude on these sites during construction.

- All work within 50 feet of a potential discovery would be halted until a qualified cultural resources specialist or designated representative can inspect the discovery and determine whether further investigation is required.

Overall, the PG&E Proposed Project components would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major period of California history or prehistory. Therefore, less-than-significant impacts would occur.

5.21.3.1.2 Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Construction, Operations and Maintenance

LSPGC and PG&E Proposed Project Components

Less-than-Significant Impact. As discussed in Chapter 7 – Cumulative and Other CEQA Considerations, the LSPGC and PG&E Proposed Project components would result in less-than-significant cumulatively considerable impacts related to the analyzed environmental resource categories. Therefore, the Proposed Project would not have environmental effects that are individually limited but cumulatively considerable, and the impact would be less than significant.

5.21.3.1.3 Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Construction, Operations and Maintenance

LSPGC Components

Less-than-Significant Impact. In general, impacts to human beings are associated with air quality, geologic hazards, hazards and hazardous materials, noise, and traffic safety impacts. As discussed in Section 5.3 Air Quality, during construction of the LSPGC Proposed Project components, uncontrolled average daily emissions would exceed Bay Area Air Quality Management District (BAAQMD) applicable thresholds for nitrogen oxides (NO_x) in 2026 and 2027; however, all other emissions would be below applicable thresholds. Implementation of APMs AIR-1 and AIR-2 would reduce impacts related to air quality by requiring all construction equipment with a rating between 100 and 750 horsepower (hp) to use engines compliant with the U.S. Environmental Protection Agency (EPA) Tier 4 non-road engine standards and implementing measures, as needed, that reduce fugitive dust emissions during construction.

As presented in Section 5.7 Geology, Soils, and Paleontological Resources, the LSPGC Proposed Project components would not result in environmental impacts that would have substantial direct or indirect effects on human beings with respect to geologic hazards as they would not introduce habitable structures; as such, they would not pose substantial risk of loss, injury, or death from potential fault rupture. Furthermore, the LSPGC Proposed Project components would be designed to be consistent with CPUC General Order (GO) 95 and the California Building Code, which would ensure adequate service and safety of persons engaged in the construction, operation and maintenance (O&M), or use of overhead electrical lines and to the public in general. In addition, APM GEO-1 would be implemented to further reduce impacts related to geologic hazards. APM GEO-1 would minimize disturbance to soils to ensure the soil structure in the Proposed Project area is maintained.

As discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety, the LSPGC Proposed Project components' potential for hazards from hazardous materials or accidents would be less than significant as they would include design specifications and follow O&M procedures

that minimize potential impacts to hazards, hazardous materials, and public safety. In addition, APM BIO-3 would require all workers on the Proposed Project site to attend a WEAP training informing them how to identify potentially hazardous wastes and stained and odiferous soils, as well as proper storage of hazardous materials.

Five sensitive receptors are identified in proximity to the LSPGC Proposed Project components. The nearest sensitive receptors to the proposed LSPGC Collinsville Substation are three residential areas (R1, R2, and R3) and one cemetery (R4). R1 is approximately 1,790 feet southeast, R2 is approximately 4,175 feet southwest, and R3 is approximately 4,280 feet west-southwest of the proposed LSPGC Collinsville Substation. R4 is the Saint Charles Borromeo Catholic Cemetery along Abruzzini Hill Road, and it is approximately 4,700 feet west-northwest of the proposed LSPGC Collinsville Substation. The nearest residence (R1) to the proposed LSPGC 230 kV Overhead Segment is approximately 555 feet south. The nearest receptor to the proposed LSPGC 230 kV Underground Segment and PG&E's existing Pittsburg Substation is a residential area (R5) on Halsey Court that is composed of single-family residences, approximately 2,100 feet southeast. Multiple residences, a private school, and a community center are located within approximately 20 feet of the proposed LSPGC Telecommunications Line. As discussed in Section 5.13 Noise, construction would not have the potential to generate significant short-term groundborne vibration or groundborne noise at the nearest sensitive receptors. The LSPGC Proposed Project components would not exceed the noise level limit at any property boundary during O&M. Therefore, impacts relating to noise would be less than significant.

As discussed in Section 5.17 Transportation, the LSPGC Proposed Project components would not result in transportation impacts related to increased vehicle miles traveled (VMT) and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). In addition, the LSPGC Proposed Project components would not result in any noticeable long-term or permanent increases in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, would not be a development project, and would not result in any land use changes. Neither the construction phase nor the O&M phase of the LSPGC Proposed Project components would generate any permanent traffic hazards. Therefore, impacts with respect to traffic safety would be less than significant.

Overall, as presented throughout Chapter 5 – Environmental Impact Assessment, the direct and indirect impacts of the Proposed Project's construction and O&M would be less than significant for all resource areas. Therefore, the LSPGC Proposed Project components would not cause a substantial adverse direct or indirect effect on human beings, and impacts would be less than significant.

PG&E Components

Less-than-Significant Impact. In general, impacts to human beings are associated with air quality, geologic hazards, hazards and hazardous materials, noise, and traffic safety impacts. As discussed in Section 5.3 Air Quality, during construction of the PG&E Proposed Project components, uncontrolled average daily emissions would exceed BAAQMD applicable thresholds for NO_X in 2026 and 2027; however, all other emissions would be below applicable thresholds. Implementation of CMs AIR-1 and AIR-2 would reduce impacts related to air quality by requiring all construction equipment with a rating between 100 and 750 hp to use engines

compliant with the U.S. EPA Tier 4 non-road engine standards and implementing measures that reduce fugitive dust emissions during construction.

As presented in Section 5.7 Geology, Soils, and Paleontological Resources, the PG&E Proposed Project components would not result in environmental impacts that would have substantial direct or indirect effects on human beings with respect to geologic hazards as they would not introduce habitable structures; as such, they would not pose substantial risk of loss, injury, or death from potential fault rupture. Furthermore, the PG&E Proposed Project components would be designed to be consistent with CPUC GO 95 and the California Building Code, which would ensure adequate service and safety of persons engaged in the construction, O&M, or use of overhead electrical lines and to the public in general. In addition, CM GEO-1 would be implemented to further reduce impacts related to geologic hazards. CM GEO-1 would minimize siting on soft and loose soils to ensure the soil structure in the Proposed Project area is maintained.

As discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety, the PG&E Proposed Project components' potential for hazards from hazardous materials or accidents would be less than significant as they would include design specifications and follow O&M procedures that minimize potential impacts to hazards, hazardous materials, and public safety. In addition, CM BIO-3 would require all workers on the Proposed Project site to attend a WEAP training informing them how to identify potentially hazardous wastes and stained and odiferous soils, as well as proper storage of hazardous materials.

The nearest sensitive receptor (R1) to the proposed PG&E 500 kV Interconnection is approximately 1,950 feet south. The nearest receptor to PG&E's existing Pittsburg Substation is a single-family residential area (R5) on Halsey Court, which is approximately 2,100 feet southeast of the substation. As discussed in Section 5.13 Noise, construction would not have the potential to generate significant short-term groundborne vibration or groundborne noise at the nearest sensitive receptors. The PG&E Proposed Project components would not exceed the noise level limit at any property boundary during O&M. Therefore, impacts relating to noise would be less than significant.

As discussed in Section 5.17 Transportation, the PG&E Proposed Project components would not result in transportation impacts related to increased VMT and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). In addition, the PG&E Proposed Project components would not result in any noticeable long-term or permanent increases in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, would not be a development project, and would not result in any land use changes. Neither the construction phase nor the O&M phase of the PG&E Proposed Project components would generate any permanent traffic hazards. Therefore, impacts with respect to traffic safety would be less than significant.

Overall, as presented throughout Chapter 5 – Environmental Impact Assessment, the direct and indirect impacts of the Proposed Project's construction and O&M would be less than significant for all resource areas. Therefore, the PG&E Proposed Project components would not cause a substantial adverse direct or indirect effect on human beings, and impacts would be less than significant.

CHAPTER 6 – COMPARISON OF ALTERNATIVES

This chapter presents the results of a comparative analysis of the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project) and the Alternative Substation in terms of potential environmental impacts. Descriptions of the alternatives are provided in Chapter 4 – Description of Alternatives. As described in Chapter 4 – Description of Alternatives, the alternatives were developed and evaluated based on objectives that were in part informed by the California Independent System Operator's objectives and analysis included in its 2021-2022 Transmission Plan.

6.1 ALTERNATIVES COMPARISON METHODOLOGY

6.1.1 Comparison of Ability of Alternatives to Avoid or Reduce a Potentially Significant Impact

As presented in Chapter 5 – Environmental Impact Assessment, the Proposed Project would not result in any significant and unavoidable impacts. Thus, an alternative to avoid or reduce such an impact is not required. In accordance with the California Public Utilities Commission's (CPUC's) Proponent's Environmental Assessment Checklist, LSPGC elected to compare alternatives based on the resource areas in which the Proposed Project would result in impacts that would be less than significant with the implementation of LSPGC's applicant-proposed measures (APMs). Based on the analysis in Chapter 5 – Environmental Impact Assessment, the following California Environmental Quality Act (CEQA) resource areas include LSPGC's APMs and, where applicable, Pacific Gas and Electric Company's (PG&E's) Construction Measures (CMs) to reduce impacts to a less-than-significant level:[1]

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards, Hazardous Materials, and Public Safety
- Tribal Cultural Resources
- Utilities and Service Systems

As presented in Chapter 4 – Description of Alternatives, LSPGC identified one alternative to the Proposed Project that would include an alternative substation location, with one 500 kV Interconnection Alternative route that would connect the Substation Alternative to PG&E's

[1] APMs were included for Section 5.10 Hydrology and Water Quality, Section 5.15 Public Services, Section 5.16 Recreation, and Section 5.17 Transportation to reduce potential impacts from the proposed LSPGC 230 kV Submarine Segment and Telecommunications Line. These resource areas were not included in this chapter because alternatives for the submarine component and telecommunications line were not identified nor analyzed. Despite the fact than an APM was included in Section 5.20 Wildfire, this resource area was not included in this chapter because none of the alternatives would be located in in or near state responsibility areas or lands classified as very high fire hazard severity zones.

existing Vaca Dixon-Tesla 500 kV Transmission Line, and one 230 kV Overhead Transmission Line Alternative that would extend from the Substation Alternative toward the northern shore of the Sacramento River. This alternative, inclusive of the 500 kV and 230 kV transmission lines, is hereafter referred to as the Alternative Project. The Alternative Project was found to meet all Proposed Project's objectives; therefore, it was carried forward for analysis and comparison to the Proposed Project under the respective subheadings that follow. In addition, a variation for the 500 kV Transmission Line was identified and has been analyzed against the Proposed Project's 500 kV Transmission Line route.

This comparative analysis includes only those facilities proposed on the north side of the Sacramento River, where the proposed LSPGC 230 kV Overhead Segment would connect to a proposed in-river transition structure (adjacent to the north shore of the Sacramento River). As PG&E's existing Pittsburg Substation on the south side of the river is a fixed location and the underwater cable has limited options between the two points, alternatives in and on the south side of the river were not analyzed.

6.2 ALTERNATIVES ANALYSIS

6.2.1 Descriptions

6.2.1.1 Proposed Project

The Proposed Project includes the proposed LSPGC Collinsville Substation that is located near the unincorporated community of Collinsville in southeastern Solano County. The proposed PG&E 500 kV Interconnection would connect the proposed LSPGC Collinsville Substation to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line, and the proposed LSPGC 230 kV Overhead Segment would extend from the proposed LSPGC Collinsville Substation to the north shore of the Sacramento River.

6.2.1.2 Alternative Project

The Alternative Project consists of one Substation Alternative that is located adjacent to and south of Talbert Lane, approximately 0.9 mile east of Collinsville Road, and a 500 kV transmission line that connects the Substation Alternative to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line. This 500 kV transmission line alternative is approximately 530 feet long. In addition, the 230 kV Overhead Transmission Line Alternative would extend from the Substation Alternative for approximately 1.8 miles to the north side of the Sacramento River.

6.2.2 Comparison

Table 6-1: Project Alternatives Comparison compares the relative impact of the Proposed Project to the Alternative Project. As demonstrated by the information presented in Table 6-1: Project Alternatives Comparison, the Alternative Project's transmission lines would be collectively shorter than those of the Proposed Project by approximately 1.07 miles, resulting in potentially less impacts to air quality, biological resources, cultural resources, and utilities and service systems due to less ground disturbance. However, the Alternative Project would be located in much steeper terrain, requiring more substantial grading and subsequently greater air pollutant emissions during construction. The Alternative Project would also result in greater permanent

Table 6-1: Project Alternatives Comparison

CEQA Impact Criterion	Proposed Project	Alternative Project
Aesthetics		
Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.)	**Less-than-Significant Impact (with APMs and CMs).** During construction, fugitive dust generated by construction activities could affect visibility in the Proposed Project vicinity. As described in Section 5.3 Air Quality, LSPGC's APM AIR-2 and PG&E's CM AIR-2 would require fugitive dust control measures, consistent with Bay Area Air Quality Management District and Sacramento Metropolitan Air Quality Management District requirements. In addition, PG&E's CM GEO-1 would mitigate for soft or loose soils to prevent dust emissions. These measures would be implemented during the Proposed Project construction and would reduce the potential for dust emissions. LSPGC's APM AES-1 would be implemented to ensure construction staging areas are sited away from public view where possible, and temporary staging and work areas are maintained in a clean and orderly state to reduce impacts associated with temporary, minor ground disturbances. Similarly, PG&E's CM AES-1 would maintain all work areas in a clean and orderly state. Following the completion of construction, LSPGC's APM GEO-1 would ensure that LSPGC Proposed Project components' staging and temporary work areas would be returned to pre-construction conditions, including regrading and revegetation or repaving of disturbed areas to match pre-existing contours and conditions. As a result, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The Alternative Project would be located in an area of much steeper terrain than the Proposed Project, thus requiring substantially more grading. The additional grading would result in more air pollutant emissions than what would be generated by Proposed Project construction. Regardless, the same LSPGC APMs and PG&E CMs to reduce air pollutant emissions would be implemented for the Proposed Project and the Alternative Project. The same impacts associated with construction staging areas would occur regardless of their location. The collective 500 kV transmission line would be approximately 2.07 miles shorter than the collective 500 kV transmission lines associated with the Proposed Project, but the 230 kV Overhead Transmission Line Alternative would be 1 mile longer than that of the Proposed Project. However, this minor reduction in length would not change the overall visual impact associated with the new facilities. Both the Proposed Project and the alternative would implement APMs to return temporarily disturbed areas to pre-construction conditions. Thus, with the implementation of LSPGC's APMs and PG&E's CMs, impacts would be less than significant.
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	**Less-than-Significant Impact (with APMs and CMs).** Most construction would take place during daylight hours; however, at limited times, some construction activities may be required or finished at night, and these activities would require lighting for safety. Staging areas may be lit for staging and security, and lighting in these areas would be directed on site and shielded to reduce light escape, in accordance with LSPGC's APM AES-1 and BIO-12 and PG&E's CM BIO-11. With the implementation of LSPGC's APM and PG&E's CM, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The same impacts would occur, and the same LSPGC APMs and PG&E CMs would be implemented regardless of the Proposed Project location. There would be no difference between this alternative and the Proposed Project for this criterion, and impacts would be less than significant with the implementation of the APM.
Air Quality		
Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	**Less-than-Significant Impact (with APMs and CMs).** Proposed Project construction would require the use of off-road construction equipment, on-road vehicles, and one light-duty helicopter. These vehicles would generate emissions that could contribute to existing or projected violations of the ambient air quality standards for ozone (O_3), particulate matter with a mean diameter of less than 10 microns (PM_{10}), and PM with a mean diameter of less than 2.5 microns ($PM_{2.5}$). To reduce these construction emissions, LSPGC's APM AIR-1 and PG&E's CM AIR-1 would require construction equipment with a rating between 100 and 750 horsepower to use engines compliant with Environmental Protection Agency Tier 4 non-road engine standards. In addition, ground disturbance associated with grading and the installation of access roads and transmission line structures would generate fugitive dust. LSPGC's APM AIR-2 and PG&E's CM AIR-2, which require fugitive dust emissions to be controlled during construction, would be implemented. With the implementation of LSPGC's APMs and PG&E's CMs, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** Construction of the Alternative Project would require the use of off-road construction equipment, on-road vehicles, and one light-duty helicopter. These vehicles would generate emissions that could contribute to existing or projected violations of the ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$. These emissions would be the same or very similar to those of the Proposed Project as the same equipment would be used. In addition, LSPGC's APMs and PG&E's CMs would be implemented to reduce these emissions to a less-than-significant level. The Alternative Project would be located in an area of much steeper terrain than that of the Proposed Project, requiring substantially more grading. The additional grading would result in more air pollutant emissions than what would be generated by Proposed Project's construction. However, impacts from construction of the Alternative Project's transmission lines would be slightly lower than that of the Proposed Project because the Alternative Project transmission lines would collectively be approximately 1.07 miles shorter and would therefore require less ground disturbance to construct. Regardless, impacts would be expected to be less than significant with the implementation of LSPGC's APMs and PG&E's CMs.

CEQA Impact Criterion	Proposed Project	Alternative Project
Would the project expose sensitive receptors to substantial pollutant concentrations?	**Less-than-Significant Impact (with APMs and CMs).** The nearest sensitive receptors to the planned construction activities in Solano County are 18 residences along Collinsville Road. These residences are located approximately 0.8 mile southwest of the proposed substation site. Emissions from construction vehicles and ground disturbance have the potential to impact these sensitive receptors. However, with implementation of LSPGC's APMs AIR-1 and AIR-2 and PG&E's CMs AIR-1 and AIR-2, which were previously discussed, impacts to sensitive receptors would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The nearest sensitive receptor to the Alternative Substation Site would be approximately 1.4 miles to the southwest; however, the Alternative 230 kV Overhead Transmission Line would be located a similar distance from the sensitive receptors as the Proposed Project. Fugitive dust emissions from the Alternative Project would be higher due to the increased grading that would be required in the steeper terrain; however, tailpipe emissions from heavy equipment and vehicle use for the Alternative Project would be roughly the same as those for the Proposed Project because the same equipment would be used. Emissions might be greater for the Alternative Project; however, impacts would be less than significant with the implementation of LSPGC's APMs and PG&E's CMs.
Biological Resources		
Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	**Less-than-Significant Impact (with APMs and CMs).** Construction of the Proposed Project would result in a temporary and permanent loss of habitat. However, temporary areas would be restored in accordance with LSPGC's APM GEO-1 and reseeded in accordance with LSPGC's APM BIO-2 and PG&E's CM BIO-2. Vegetation removal would also be minimized in accordance with LSPGC's APM BIO-16. To reduce impacts to special-status species and natural communities, LSPGC's APM BIO-3 and PG&E's CM BIO-3 would ensure that Worker's Environmental Awareness Programs (WEAPs) would be implemented to educate all construction and operations workers on site-specific biological and non-biological resources and proper work practices to avoid harming plants or wildlife during construction or operations and maintenance (O&M) activities. In accordance with LSPGC's APMs BIO-11 and BIO-13, pre-construction surveys would be conducted so that special-status species and their nests could be identified and avoided. In addition, vehicles would be cleaned prior to arriving on site in order to reduce the potential to spread noxious weeds, in accordance with LSPGC's APM BIO-7 and PG&E's CM BIO-7. Throughout construction, vehicles would stay on established roadways and within disturbance areas, and the speed limit would be limited to 15 miles per hour, in accordance with LSPGC's APM BIO-8 and PG&E's CM BIO-8, to minimize the risk of vehicle strikes. All construction activities that could result in take of special-status plants or bird nests would be monitored by a qualified biologist, in accordance with LSPGC's APM BIO-6. Similarly, PG&E's CM BIO-6 would require compliance inspections by a biological monitor at regular intervals. Nighttime lighting within the work area would be shielded, oriented downward, and directed away from habitat suitable for western pond turtle occupation, in accordance with LSPGC's APM BIO-12. All excavated holes/trenches that are not filled at the end of a workday would be covered, or a wildlife escape ramp would be installed to prevent the inadvertent entrapment of wildlife species, in accordance with LSPGC's APM BIO-9 and PG&E's CM BIO-9. LSPGC's APM BIO-10 would ensure that construction activities would be restricted to delineated work areas to prevent inadvertent impacts to habitats and wildlife outside of work areas. PG&E's CM BIO-10 would minimize the activity footprint and the amount of time spent at a work location to reduce potential take of species. With the implementation of LSPGC's APMs and PG&E's CMs, impacts would be less than significant. All Proposed Project facilities would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee [APLIC] 2006). The risks of collision and electrocution associated with this increase would be minimized by spacing conductors and ground wires sufficiently so that raptors cannot contact two conductors or one conductor and a ground wire, and by designing and constructing towers to reduce the risk of avian collision. Thus, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** Both the Proposed Project and Alternative Project would be located in the same habitat types. The same impacts would occur and the same LSPGC APMs and PG&E CMs would be implemented regardless of the specific substation and transmission line locations due to the uniformity of habitat in the area. The Alternative Project's transmission lines would result in slightly less impacts to biological resources as a result of their shorter length, thus requiring less ground disturbance and fewer structures. With the implementation of LSPGC's APMs and PG&E's CMs, impacts would be less than significant.

CEQA Impact Criterion	Proposed Project	Alternative Project
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	**Less-than-Significant Impact (with APMs and CMs).** The Proposed Project would result in temporary and permanent loss of sensitive natural communities. To avoid and minimize potential impacts to sensitive natural communities from construction activities (e.g., native vegetation clearing and grubbing, grading, and earth-moving), pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and sensitive natural communities for avoidance would be implemented in accordance with LSGPC's APMs BIO-1 and BIO-4, when feasible, as well as WEAPs, in accordance with LSPGC's APM BIO-3 and PG&E's CM BIO-3, to ensure contractor understanding and implementation of these protective measures. In addition, mitigation strategies (e.g., special-status plant species restoration) are addressed in LSPGC's APM BIO-2. Implementation of LSPGC's APM BIO-4 and PG&E's CM BIO-4 would ensure minimization of impacts to special-status natural communities and sensitive resources occurring in the Proposed Project area. Thus, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** Both the Proposed Project and Alternative Project are located in an area with the same vegetative cover and natural communities. The same impacts would occur, and the same LSPGC APMs and PG&E CMs would be implemented regardless of the specific substation and transmission line locations due to the uniformity of habitat in the area. The Alternative Project's transmission lines would result in slightly less impacts to biological resources as a result of its shorter length, and it would require less ground disturbance and less permanent impacts as a result of fewer structures. However, it would result in greater impacts to jurisdictional wetlands as it would require at least one more structure to be placed in a wetland. Regardless, with the implementation of LSPGC's APMs and PG&E's CMs, impacts would be less than significant.
Would the project have a substantial adverse effect on state or federally protected wetlands and waters, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?	**Less-than-Significant Impact (with APMs and CMs).** The Proposed Project would result in temporary and permanent impacts to jurisdictional wetlands. All necessary permits and authorizations would be obtained prior to construction. All conditions of approval identified in permits and authorizations would be implemented for the Proposed Project. Further, LSPGC's APMs BIO-1, BIO-2, BIO-4, and GEO-1 would be implemented and would require avoidance or minimization of impacts to all jurisdictional waters and riparian habitat by siting activities outside these areas and performing restoration for temporary impacts. PG&E's CMs BIO-1 and BIO-4 would maintain a buffer from the edge of wetlands, streams, or other waterways and avoidance of sensitive resources. With the implementation of LSPGC's APMs and PG&E's CMs and compliance with permits and authorizations issued for the Proposed Project, impacts on potentially jurisdictional wetlands and waters would be less than significant.	**Less-than-Significant Impact (with APMs).** The Alternative Project would result in temporary and permanent impacts to jurisdictional wetlands. However, the Alternative Project would potentially result in greater impacts to jurisdictional wetlands as the 230 kV Overhead Transmission Line Alternative would require at least one more structure to be installed in a wetland as a result of an angle point location. LSPGC's APMs, similar to those of the Proposed Project, would be implemented regardless of the specific substation location or transmission line routes. As a result, impacts would be less than significant.
Cultural Resources		
Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	**Less-than-Significant Impact (with APMs and CMs).** The Proposed Project would not result in direct or indirect effects to the NRHP-nominated resource that is adjacent to the proposed Area of Potential Impacts/Area of Potential Effects (API/APE) or to the transmission line that is recommended as eligible for the National Register of Historic Places/California Register of Historical Resources (NRHP/CRHR). Excavation associated with construction of the proposed LSPGC Collinsville Substation and associated transmission lines could result in damage or destruction to unknown historical resources. To address this potential impact, WEAPs would be prepared to train construction personnel on the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features), in accordance with LSPGC's APM CUL-1 and PG&E's CM CUL-1. Additionally, per LSPGC's APM CUL-2, cultural resource surveys would be conducted prior to construction for any LSPGC Proposed Project component areas that were not previously surveyed, which may include areas where landowner permission was not obtained and/or new or modified staging areas, pull sites, or other work areas. PG&E's CM CUL-2 would require marking environmentally sensitive areas; avoidance of sites, where feasible; and implementation of measures to reduce impacts to less-than-significant levels where avoidance is not possible. During construction, LSPGC's APM CUL-3 would be implemented so that if previously unidentified cultural resources are uncovered during excavation, a qualified archaeologist would inspect the discovery and determine whether further investigation is required. PG&E's CM CUL-3 would be implemented so that a cultural resource specialist (CRS) or other qualified designee would assess the significance of the find and develop appropriate treatment measures, as necessary. With implementation of LSPGC's APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3, no substantial adverse changes related to a historical resource are anticipated and impacts to historical resources would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** Construction of the Alternative Project would have a similar potential to adversely affect unknown resources, though potentially to a slightly lesser degree due to the shorter transmission line length associated with the alternative. Regardless, the same LSPGC APMs and PG&E CMs would be implemented to reduce impacts to a less-than-significant level.

CEQA Impact Criterion	Proposed Project	Alternative Project
Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	**Less-than-Significant Impact (with APMs and CMs).** The pedestrian survey of the Proposed Project area did not identify significant archaeological resources within or adjacent to the proposed API/APE; however, excavation associated with Proposed Project construction could result in damage or destruction to unknown archaeological resources. With implementation of LSPGC's APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3, no substantial adverse changes related to an archaeological resource are anticipated and impacts to archaeological resources would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The pedestrian survey of the Alternative Project area did not identify significant archaeological resources; however, excavation associated with Alternative Project construction could result in damage or destruction to unknown archaeological resources. Construction of the Alternative Project would have a similar potential to adversely affect unknown resources, though potentially to a slightly lesser degree due to the shorter transmission line length associated with the alternative. Regardless, the same LSPGC APMs and PG&E CMs would be implemented to reduce impacts to a less-than-significant level.
Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	**Less-than-Significant Impact (with APMs and CMs).** If human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease within a 50-foot radius of the remains, and cultural resource staff and construction supervisors would be notified, as required by LSPGC's APM CUL-3. Similarly, in accordance with PG&E's CM CUL-3, all work would be halted within a 50-foot radius and the CRS or designated representative would be notified if human remains are inadvertently discovered. These procedures would ensure that the remains are treated in accordance with Section 15064.5(d) and (e) of the CEQA Guidelines, California Health and Safety Code Section 7050.5, and Public Resources Code (PRC) Sections 5097.98 and 5097.99; and impacts to human remains during construction would be reduced to a less-than-significant level.	**Less-than-Significant Impact (with APMs and CMs).** Construction of the Alternative Project would have a similar potential to adversely affect human remains, though potentially to a slightly lesser degree due to the shorter transmission line length associated with the alternative. Regardless, the same LSPGC APMs and PG&E CMs would be implemented to reduce impacts to a less-than-significant level.
Geology, Soils, and Paleontological Resources		
Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides?	**Less-than-Significant Impact (with APMs and CMs).** Proposed Project facilities could be affected by earthquakes, strong ground shaking, or seismic failure. To avoid impacts that may result from seismic activity, LSPGC's APM GEO-1 would be implemented and would require adherence to and implementation of all design recommendations and parameters established in the Proposed Project-specific geotechnical engineering report. Additionally, the Proposed Project would be designed to be consistent with the design and engineering standards contained in CPUC General Order (GO) 95 and the California Building Code (CBC). PG&E's CM GEO-1 would minimize construction in soft or loose soils, where feasible. Therefore, construction and O&M of the Proposed Project would have a less-than-significant impact related to the rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides with the implementation of LSPGC's APM GEO-1 and PG&E's CM GEO-1. As a result, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The potential for the Alternative Project and the Proposed Project to be affected by earthquakes, strong ground shaking, or seismic failure would be the same regardless of location as the region has the same risks and issues. Regardless of the facility locations, all design recommendations in the geotechnical engineering report would be adhered to. As a result, impacts would be less than significant with the implementation of one or more LSPGC APMs and PG&E CMs.
Would the project result in substantial soil erosion or the loss of topsoil?	**Less-than-Significant Impact (with APMs and CMs).** The Proposed Project would cause the permanent loss of approximately 10 acres of land designated as Grazing Land. Although topsoil reuse is not feasible within the fenced substation area or in the locations of permanent structures, Storm Water Pollution Prevention Plan measures would apply to exterior temporary work areas, and topsoil would be conserved to minimize the potential for topsoil erosion. In accordance with LSPGC's APM GEO-1, topsoil loss would be minimized to the extent feasible by keeping vehicles and construction equipment within the limits of the Proposed Project, salvaging topsoil in temporary work areas where grading is required, avoiding saturated soils, restoring temporarily disturbed areas, and keeping vegetation and soil disturbance to a minimum. PG&E's CM GEO-1 would minimize construction in soft or loose soils, where feasible. As a result, impacts during construction would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The impacts of the Alternative Project would be slightly less than those of the Proposed Project due to the reduced length of the transmission lines, resulting in less ground disturbance and potential for topsoil loss. However, ground disturbance for the transmission lines would be limited to access roads and structure locations. Thus, impacts would not vary much between the Proposed Project and the Alternative Project. In addition, the same LSPGC APMs and PG&E CMs would be implemented regardless of the specific substation location and transmission line routes. As a result, impacts would be less than significant.
Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	**Less-than-Significant Impact (with APMs and CMs).** Portions of the Proposed Project would be located on soils that could be considered unstable. In accordance with LSPGC's APM GEO-1, the Proposed Project would implement all recommendations from the Proposed Project-specific geotechnical engineering report. PG&E's CM GEO-1 would minimize construction in soft or loose soils, where feasible. Additionally, the Proposed Project would be designed to be consistent with the design and engineering standards contained in CPUC GO 95 and the CBC. Impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant as a result.	**Less-than-Significant Impact (with APMs and CMs).** The Alternative Project would be located on soil that could be considered unstable. As with the Proposed Project, all recommendations from site-specific geotechnical engineering report would be implemented. Additionally, the Alternative Project would be designed to be consistent with the design and engineering standards contained in CPUC GO 95 and the CBC. Therefore, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant with the implementation of one or more LSPGC APMs and PG&E CMs.

CEQA Impact Criterion	Proposed Project	Alternative Project
Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	**Less-than-Significant Impact (with APMs and CMs).** Portions of the Proposed Project would be located on soils that could have expansive characteristics, as they are classified as Hydrologic Group D. Expansive soils along the Proposed Project would be unlikely to create geotechnical issues because new structures would be installed at depths of 10 to 50 feet (depending on the pole/structure type and location). Thus, the structures would be buried below shallow, expansive soils, as defined in the Uniform Building Code (1994). Therefore, the Proposed Project is not anticipated to pose substantial risks to life or property. Furthermore, all recommendations from the Proposed Project-specific geotechnical engineering report would be implemented consistent with LSPGC's APM GEO-1. PG&E's CM GEO-1 would minimize construction in soft or loose soils, where feasible. As a result, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The Alternative Project would also be located on soil that could be considered expansive. As with the Proposed Project, all recommendations from site-specific geotechnical engineering report would be implemented. Additionally, the Alternative Project would be designed to be consistent with the design and engineering standards contained in CPUC GO 95 and the CBC, and depths of structures would be below shallow expansive soils. PG&E's CM GEO-1 would minimize construction in soft or loose soils, where feasible. Therefore, impacts associated with expansive soils would be less than significant with the implementation of one or more LSPGC APMs and PG&E CMs.
Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	**Less-than-Significant Impact (with APMs and CMs).** While there are no documented paleontological resources within the Proposed Project area, fossils have been uncovered within 3 miles of the Proposed Project, and the Montezuma Formation (Qmz) and Pleistocene alluvial fan deposits (Qpf) underlying the Proposed Project have the potential to yield fossils. As a result, construction activities involving trenching or excavation have the potential to uncover fossils. Implementation of LSPGC's APMs PALEO-1 and PALEO-2 would ensure that potential impacts to paleontological resources resulting from Proposed Project construction would be less than significant. LSPGC's APM PALEO-1 and PG&E's CM PALEO-1 would require that all field personnel receive a WEAP training that details the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Proposed Project area, the role of the paleontological monitor, steps to follow if a fossil discovery is made, and contact information for the Proposed Project paleontologist. LSPGC's APM PALEO-2 and PG&E's CM PALEO-2 would require a paleontological monitor to be present during initial ground-disturbing activities in areas mapped as the Pleistocene alluvial fan deposits (Qpf) and Montezuma Formation (Qmz). If a paleontological resource is discovered, the monitor would have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. As a result, impacts would be less than significant.	**Less-than-Significant Impact (with APMs and CMs).** The Alternative Project area is underlain by the same deposits as the Proposed Project. These deposits have the potential to yield fossils. Similar to the Proposed Project, LSPGC's APMs and PG&E's CMs would be implemented to ensure construction personnel are trained to identify potential paleontological resources, paleontological monitoring would be conducted where appropriate, and any finds would be appropriately evaluated and treated. As a result, impacts would be less than significant.
Greenhouse Gas Emissions		
Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	**Less-than-Significant Impact (with APMs and CMs).** The SMAQMD recommends an annual construction-related greenhouse gas threshold of 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$) and construction activities within the SMAQMD are anticipated to generate approximately 339.6 $MTCO_2e$. Therefore, these emissions would be below the applicable threshold, and impacts would be less than significant. To further reduce impacts, LSPGC's APM GHG-1 and PG&E's CM GHG-1 would be implemented and would require vehicles and equipment be properly maintained, construction debris be recycled, and line power be used in lieu of diesel generators when feasible.	**Less-than-Significant Impact (with APMs and CMs).** The same impacts would occur, and the same LSPGC APM and PG&E CM would be implemented regardless of the specific location. There would be little difference between this alternative and the Proposed Project for this criterion because the same equipment would be used for construction, generating roughly the same air pollutant emissions. Impacts would be less than significant.
Hazards, Hazardous Materials, and Public Safety		
Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?	**Less-than-Significant Impacts (with APMs and CMs).** Transport of heavy materials using helicopters could create a significant hazard to the public or environment. LSPGC's APM HAZ-1 and PG&E's CM HAZ-3 would require compliance with all applicable Federal Aviation Administration regulations, coordination of helicopter operations with local airports, and management of helicopter landing zones to minimize impacts to local residents. As a result, impacts would be less than significant.	**Less-than-Significant Impacts (with APMs and CMs).** The same impacts would occur, and the same LSPGC APM and PG&E CM would be implemented regardless of the specific location. There would be little difference between this alternative and the Proposed Project for this criterion because the same helicopters would be used for construction. Impacts would be less than significant.

CEQA Impact Criterion	Proposed Project	Alternative Project
Tribal Cultural Resources		
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resource, or in a local register of historical resources as defined in PRC Section 5020.1(k)?	**Less-than-Significant Impact (with APMs and CMs).** Potential impacts to unrecorded tribal cultural resources could occur as a result of ground-disturbing activities. LSPGC's APM CUL-1 through APM CUL-3 and PG&E's CM CUL-1 through CM CUL-3 would reduce impacts to less than significant if previously unidentified tribal cultural resources are encountered during construction as a result of training construction crews on the identification of potential resources and avoiding and/or treating any resources found. As a result, impacts would be less than significant with the implementation of LSPGC's APMs and PG&E's CMs.	**Less-than-Significant Impact (with APMs and CMs).** As with the Proposed Project, potential impacts to unrecorded tribal cultural resources could occur as a result of ground-disturbing activities. Construction of the Alternative Project would have slightly less potential to adversely affect unknown tribal cultural resources due to it being approximately 1.07 miles shorter than the Proposed Project. However, the same LSPGC APMs and PG&E CMs would be implemented to reduce impacts to a less-than-significant level.
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1?	**Less-than-Significant Impact (with APMs and CMs).** As described in response to the previous question, impacts to potential tribal cultural resources, which could occur from ground disturbance, would be reduced to a less-than-significant level through implementation of LSPGC's APMs CUL-1 through CUL-3 and PG&E's CMs CUL-1 through CUL-3.	**Less-than-Significant Impact (with APMs and CMs).** As with the Proposed Project, potential impacts to unrecorded tribal cultural resources could occur as a result of ground-disturbing activities. Construction of the Alternative Project would have a slightly lower potential to adversely affect unknown tribal cultural resources due to it being approximately 1.07 miles shorter than the Proposed Project. However, the same LSPGC APMs and PG&E CMs would be implemented to reduce impacts to a less-than-significant level.
Utilities and Service Systems		
Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental impacts?	**Less-than-Significant Impact (with APMs).** Numerous utility lines (e.g., overhead electric transmission and distribution lines, underground natural gas pipelines, and underground hazardous liquid pipelines) are located throughout the Proposed Project area. All utility companies with utilities located within or crossing the Proposed Project right-of-way would be notified in order to locate and mark existing underground utilities along the entire length of the Proposed Project at least 14 days prior to construction. Construction methods would be adjusted, as appropriate, to ensure that the integrity of existing utility infrastructure is not compromised. In addition, LSPGC's APM UTIL-1 would require that an induction study be conducted prior to construction to evaluate the potential effects of the LSPGC Proposed Project components on pipelines in the vicinity. The recommendations of this study would be incorporated into the LSPGC Proposed Project components' design. As a result, the impact would be less than significant.	**Less-than-Significant Impact (with APMs).** The same impacts would occur and the same LSPGC APM would be implemented regardless of the specific location. Construction of the Alternative Project would have a slightly lower potential to adversely affect underground utility lines due to its transmission lines being approximately 1.07 miles shorter than those of the Proposed Project. However, the same LSPGC APM would be implemented to reduce impacts to a less-than-significant level.

impacts to wetlands as at least one additional structure would be required to be located in wetlands. All other impacts would be the same for both the Proposed Project and the Alternative Project.

6.3 500 KV INTERCONNECTION VARIATION

6.3.1 Description

One 500 kV interconnection route variation has also been carried forward for comparison to the Proposed Project's PG&E 500 kV interconnection. The 500 kV Interconnection Variation would begin at the proposed LSPGC Collinsville Substation and extend approximately 1.2 miles along the same route as the Proposed Project's 500 kV interconnection route. However, with the 500 kV Interconnection Variation, the eastern 500 kV transmission line would extend an additional 300 feet before turning and traveling for approximately 0.5 mile to interconnect to PG&E's existing Vaca Dixon-Tesla 500 kV Transmission Line.

6.3.2 Comparison

The 500 kV Interconnection Variation would parallel the proposed 500 kV route but would be approximately 300 feet longer. The same APMs would be implemented, and the impacts would be similar except for the slight increase in impacts associated with the route being longer, requiring more ground disturbance than that of the 500 kV route associated with the Proposed Project. This minor addition in ground disturbance would increase air pollutant emissions, potentially disturb more habitat for special-status species, and slightly increase the risk of potentially disturbing unknown cultural resources. However, these potential increases would be minor and would be reduced to a less-than-significant level with the implementation of LSPGC's APMs and PG&E's CMs.

6.4 CONCLUSION

While the Alternative Project's transmission lines would collectively be approximately 1.07 miles shorter than those of the Proposed Project, thus resulting in less ground disturbance and less impacts to resources, the Proposed Project was determined to be preferred over the Alternative Project because the Substation Alternative would require substantially more grading than the Proposed Project, and greater impacts to jurisdictional wetlands would potentially result from the Alternative Project's transmission lines. As would be the case with the Proposed Project, all potentially significant impacts for the Alternative Project can be reduced to a less-than-significant level with implementation of LSPGC's APMs and PG&E's CMs.

The 500 kV Interconnection Variation would result in an increased length of approximately 300 feet compared to the Proposed Project. Thus, the impacts from the 500 kV Interconnection Variation would be similar, but slightly greater than the Proposed Project due to the longer length.

CHAPTER 7 – CUMULATIVE AND OTHER CEQA CONSIDERATIONS

7.1 CUMULATIVE IMPACTS

This chapter analyzes the potential cumulative impacts related to the LS Power Grid California, LLC (LSPGC) Collinsville 500/230 Kilovolt (kV) Substation Project (Proposed Project). The California Environmental Quality Act (CEQA) requires lead agencies to consider the cumulative impacts of proposals under their review. CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." According to CEQA Guidelines Section 15130(a)(1), "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." According to Section 15130(b)(5), the cumulative impacts analysis should "examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects."

CEQA Guidelines Section 15130(a)(3) also states that an environmental document may determine that a project's contribution to a significant cumulative impact would be rendered less-than-cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

In conducting a cumulative impacts analysis, the proper frame of reference is the temporal span and spatial areas in which the project would cause impacts. In addition, Section 15130(b)(1) requires that a discussion of cumulative impacts must include either:

- A list of past, present, and probable future projects, including, if necessary, those outside the lead agency's control; or

- A summary of projections contained in an adopted local, regional, or statewide plan—or related planning document—that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of greenhouse gas (GHG) emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information, such as a regional modeling program. Any such document will be referenced and made available to the public at a location specified by the lead agency.

The following subsections discuss whether the Proposed Project could result in significant short-term or long-term environmental impacts when combined with present, planned, and probable future projects in the area. Short-term impacts are generally associated with construction of the Proposed Project and cumulative projects, while long-term impacts are those that result from operations and maintenance (O&M) of the Proposed Project features or O&M of the cumulative projects.

7.1.1 List of Cumulative Projects

Review of the following resources identified present and future projects within 1 mile of the Proposed Project in accordance with CEQA Guidelines Section 15130(b)(1)(A):

- Governor's Office of Planning and Research CEQAnet Web Portal,
- California Public Utilities Commission (CPUC) Current Project webpage,
- California Department of Transportation Project Portal,
- National Oceanic and Atmospheric Administration National Marine Fisheries Service West Coast Region website,
- Solano County Planning Commission's 2022, 2023, and 2024 meeting agendas,
- Sacramento-San Joaquin Delta Conservancy website and 2023 Annual Report,
- Sacramento County Planning Projects Viewer,
- California Department of Water Resources (DWR) Suisun Projects webpage and Delta Projects webpage,
- San Francisco Bay Conservation and Development Commission's Issued Permits and Received Permit Applications,
- City of Pittsburg Planning Commission's Current Project Pipeline, and
- Contra Costa County Department of Conservation and Development's Major Project List.

The present and future projects are depicted in Figure 7-1: Proposed Project and Cumulative Projects and listed in Table 7-1: Planned and Proposed Project within 1 Mile.

7.1.2 Geographic Scope

The type of resource influences the appropriate geographic scope of analysis for cumulative impacts. Table 7-2: Geographic Scope of Analysis for Resources describes the relevant geographic scope of analysis for each resource type that is analyzed for cumulative impacts in Section 7.1.3 Cumulative Impact Analysis.

7.1.3 Cumulative Impact Analysis

7.1.3.1 Aesthetics

A cumulatively considerable impact on aesthetics could result if the Proposed Project would contribute to a significant cumulative impact related to a substantial and adverse change in the overall character of the area; include structures that substantially differ from the character of the vicinity; or result in the addition of a substantial cumulative amount of light and/or glare. At the project level, no impacts related to scenic vistas or scenic resources were identified. No scenic vistas are within the Proposed Project area, and the Proposed Project would be located approximately 5 miles west of the nearest scenic highway. Therefore, cumulative impacts on scenic vistas or scenic resources are not analyzed.

As discussed in Section 5.1 Aesthetics, the Proposed Project would not be a source of significant light or glare. Due to the implementation of measures to reduce light escape during construction and O&M, light would not likely combine with the effects of lighting from other projects in the vicinity. The Solano 4 Wind Project will introduce permanent sources of light and glare through

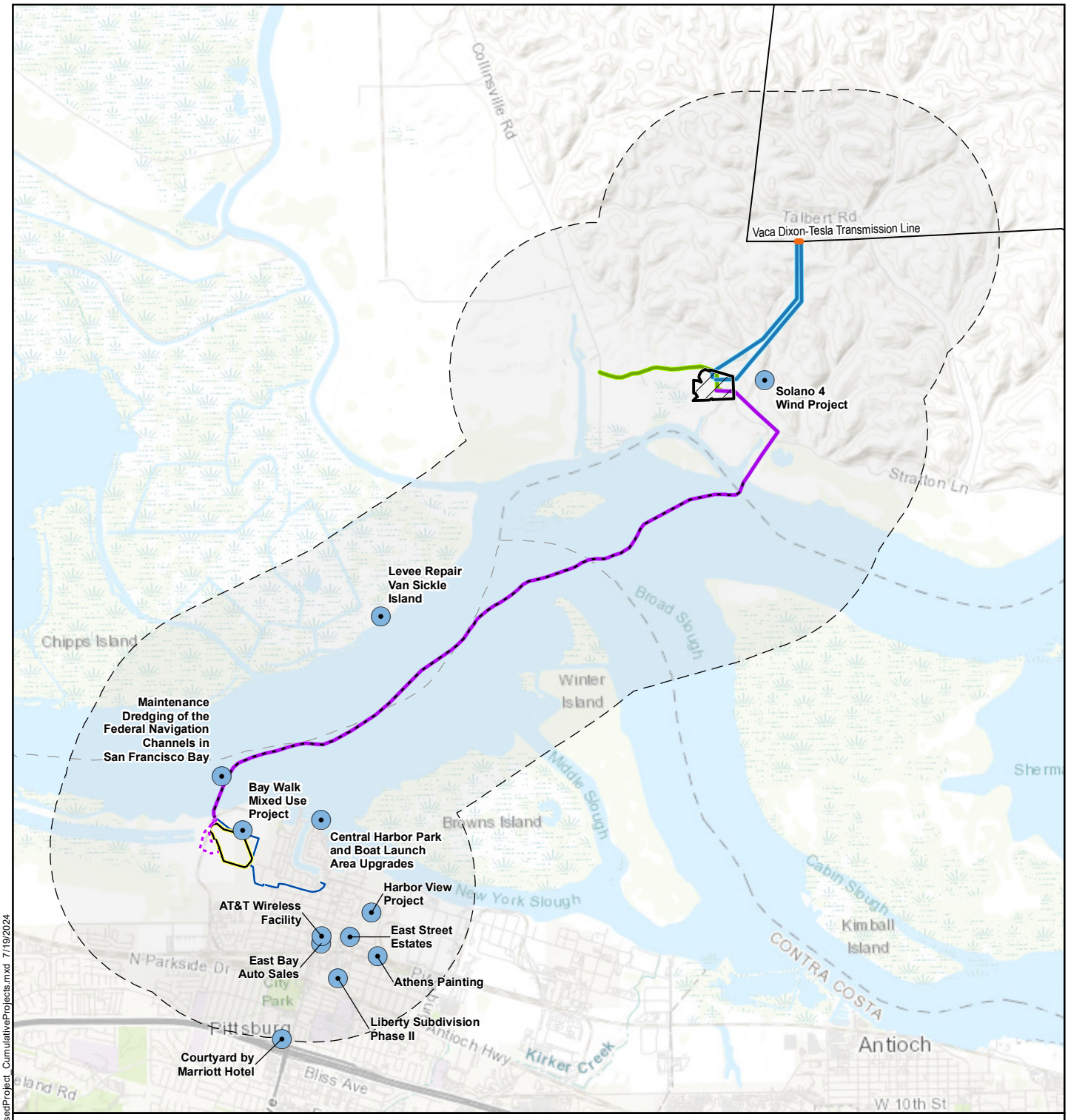

Figure 7-1: Proposed Project and Cumulative Projects

Collinsville 500/230 Kilovolt Substation Project

- Proposed LSPGC 230 kV Overhead Segment
- Proposed LSPGC 230 kV Submarine Segment
- Proposed LSPGC 230 kV Underground Segment
- Proposed PG&E 500 kV Interconnection
- Proposed PG&E 12 kV Distribution Line
- Existing PG&E 500 kV Transmission Line to be Removed
- Existing PG&E Vaca Dixon-Tesla Transmission Line
- Proposed LSPGC Telecommunications Line
- Existing PG&E Pittsburg Substation
- Proposed LSPGC Collinsville Substation Site
- 1-Mile Buffer
- Planned and Proposed Projects within 1 Mile

1:60,000

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Table 7-1: Planned and Proposed Project within 1 Mile

Project Name and Type	Project Description and Location	Proximity to the Proposed Project Area	Project Status	Anticipated Construction Schedule	Construction Overlap?
Solano 4 Wind Project	Decommissioning of 59 existing WTGs and construction of up to 22 new WTGs across the Solano 4 East and Solano 4 West sites, which total 2,549 acres. The project will also construct associated electrical collection lines and access roads. The project will make minor upgrades to the existing Russel Substation. The Solano 4 West site is located in Collinsville between Talbert Lane and the north side of the Sacramento River. The Solano 4 East site is located north of and adjacent to Toland Lane, approximately 4 miles southwest of Rio Vista.	The proposed LSPGC Collinsville Substation, LSPGC 230 kV Overhead Segment, and Pacific Gas and Electric Company (PG&E) 500 kV Interconnection would be located within the Solano 4 West site.	Under Construction	April 2023 through mid-2024	No
Bay Walk Mixed Use Project	Construction of a mixed-use development project on more than 1,046 acres in Pittsburg. The project would include the construction of 698 residential units during phase I, 445 residential units during phase II, and 561 residential units during phase III.	The Bay Walk Mixed Use Project would be adjacent to and border PG&E's existing Pittsburg Substation.	Proposed[1]	Information Not Available (INA)[2]	Potentially
AT&T Rooftop Wireless Facility	Construction of a wireless rooftop facility at 985 Railroad Avenue in Pittsburg.	The project would be located approximately 0.3 mile southeast of the proposed LSPGC Telecommunications Line.	Planned	INA	Potentially

[1] Proposed projects are currently under review of a planning commission or agency.
[2] Construction schedules were either not publicly available or were in the planning process with a construction schedule yet to be determined.

Project Name and Type	Project Description and Location	Proximity to the Proposed Project Area	Project Status	Anticipated Construction Schedule	Construction Overlap?
Levee Repair Van Sickle Island	Restoration of earthen levees to pre-disaster capacity and function for six sites on Van Sickle Island. The project would involve compacting dirt and gravel and installing rip rap and additional compacted soils. Sites 1 and 6 are along the Montezuma Slough coast of Van Sickle Island. Sites 2, 3, and 4 are along the Sacramento River coast of Van Sickle Island. Site 5 borders Spoonbill Creek.	The levee repairs at sites 2, 3, and 4 along the Sacramento River would be located approximately 0.4 mile northwest of the proposed LSPGC 230 kV Submarine Segment.	Proposed	INA	Potentially
Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay	Annual dredging of federal navigation channels by the United States (U.S.) Army Corps of Engineers (USACE). The dredging path includes the Suisun Bay Channel from Martinez to Pittsburg.	The dredging path is approximately 0.4 mile offshore of PG&E's existing Pittsburg Substation, and the proposed LSPGC 230 kV Submarine Segment would cross the dredging path.	Planned[3]	2024 Fiscal Year	No
Central Harbor Park and Boat Launch Area Upgrades	Installation of accessible paths, new restrooms, picnic tables, security infrastructure, and a play structure at Central Harbor Park and upgrades to the boat launch facility.	The park construction and boat launch upgrades would occur approximately 0.4 mile northeast of the proposed LSPGC Telecommunications Line.	Planned	Summer 2024 through end of 2026	Potentially
East Bay Auto Sales	Construction of an approximately 798-square-foot sales office, 576-square-foot repair garage, and 10,772 square feet of surface parking at 1025 Railroad Avenue in Pittsburg.	The project would be located approximately 0.4 mile southeast of the proposed LSPGC Telecommunications Line.	Proposed	INA	Potentially

[3] Planned projects have gone before a planning commission or other agency and received a recommendation from the commission or agency staff that has furthered or will likely further the project's progress.

Project Name and Type	Project Description and Location	Proximity to the Proposed Project Area	Project Status	Anticipated Construction Schedule	Construction Overlap?
Harbor View Project	Subdivision and development of approximately 20.5 acres. The development would include 227 residential units and commercial space. Additionally, a park would be created and utility lines along the project frontage on East 3rd Street would be removed and replaced underground. The project is located at 420 East 3rd Street in Pittsburg.	The Harbor View Project would be located approximately 0.4 mile east of the proposed LSPGC Telecommunications Line.	Proposed	INA	Potentially
East Street Estates	Construction of eight single-family dwellings in an existing subdivision located on East 9th Street in Pittsburg.	The project would be located approximately 0.4 mile southeast of the proposed LSPGC Telecommunications Line.	Proposed	INA	Potentially
Liberty Subdivision Phase II	Construction of 17 single-family homes at 360 Central Avenue in Pittsburg.	The project would be located approximately 0.6 mile southeast of the proposed LSPGC Telecommunications Line.	Planned	INA	Potentially
Athens Painting	Construction of two premanufactured commercial warehouse buildings, one approximately 2,000 square feet and the second approximately 1,950 square feet, to establish a contractor painting business at 1000 Harbor Street in Pittsburg.	The project would be located approximately 0.6 mile southeast of the proposed LSPGC Telecommunications Line.	Planned	INA	Potentially
Courtyard by Marriott Hotel	Construction of a hotel with 125 guest rooms on an approximately 2.75-acre lot on Railroad Avenue in Pittsburg.	The project would be located approximately 1 mile south of the proposed LSPGC Telecommunications Line.	Under Construction	October 2022 through July 2024	No

Sources: AECOM 2019; City of Pittsburg 2022a, 2022b, 2023a, 2023b, 2023c; 2023d, 2023e; Federal Emergency Management Agency (FEMA) 2023; Sacramento Municipal Utility District 2023; The East Bay 100 2022; USACE 2023; URS Group, Inc. 2015.

Table 7-2: Geographic Scope of Analysis for Resources

Resource Type	Approximate Radius of Geographic Scope (miles)	Explanation
Aesthetics	1	The geographic scope of analysis for cumulative aesthetics impacts includes the Proposed Project's viewshed, described in Section 5.1 Aesthetics, and encompasses a 1-mile radius to consider the main public roads, residents, and recreation areas in the vicinity of the Proposed Project. Roadway motorists, residents, and recreational users are the primary types of potentially affected viewer groups.
Agriculture and Forestry Resources	Not Applicable	Section 5.2 Agriculture and Forestry Resources concluded that the Proposed Project would not impact agriculture and forestry resources at the project level; thus, an analysis of cumulative impacts on agriculture and forestry resources was not conducted.
Air Quality	1	The San Francisco Bay Area Air Basin covers approximately 7,000 square miles and is the geographic scope for cumulative impacts. Cumulative impacts on sensitive receptors, workers, and odors are analyzed within a 1-mile radius due to the more localized nature of the impacts.
Biological Resources	1	The geographic scope of analysis for cumulative impacts on biological resources is a 1-mile radius around the Proposed Project, which encompasses the immediate surrounding area and habitat, wildlife corridors, or other sensitive natural communities beyond the Proposed Project.
Cultural Resources	1	The geographic scope of analysis for cumulative cultural resource impacts depends on the type of resource. Typically, prehistoric and historic resources are located subsurface, and cumulative impacts are thus considered on a more localized level that encompasses the Proposed Project vicinity described in Section 5.5 Cultural Resources. The geographic scope for historic built environment resources and tribal cultural resources (TCRs) includes a 1-mile search radius around the Proposed Project.
Energy	1	The geographic scope for cumulative impacts on energy usage is a 1-mile radius due to the prevalence of undeveloped land in the vicinity of the Proposed Project components north of the Sacramento River and the small footprint of the Proposed Project's connection to PG&E's existing Pittsburg Substation south of the Sacramento River.

Resource Type	Approximate Radius of Geographic Scope (miles)	Explanation
Geology, Soils, and Paleontological Resources	1	The geographic scope for cumulative impacts on geology, soils, and paleontological resources varies. Section 5.7 Geology, Soils, and Paleontological Resources identifies faults within 10 miles of the Proposed Project. Cumulative seismic impacts are evaluated within a smaller radius of 1 mile as the vicinity of the Proposed Project north of the Sacramento River is largely uninhabited, and Proposed Project components south of the Sacramento River are limited to a relatively small geographic area. Table 5.7-2: Mapped Soil Units and Soil Properties Crossed by the Proposed Project in Section 5.7 Geology, Soils, and Paleontological Resources describes mapped soil units and soil properties. The geographic scope for paleontological resources is considered at a localized level because impacts are often site-specific and not additive across a landscape.
Greenhouse Gas Emissions	See explanation	The geographic scope of cumulative impacts for GHGs is the state of California because GHGs are regulated at the state level.
Hazards, Hazardous Materials, and Public Safety	1	The geographic scope for cumulative impacts on hazards and public safety encompasses the 1-mile radius used in the Phase 1 Environmental Site Assessment and Corridor Report.
Hydrology and Water Quality	See explanation	The proposed LSPGC Collinsville Substation and LSPGC 230 kV Overhead Segment would be located adjacent to the Sacramento River, and the proposed LSPGC 230 kV Submarine Segment would travel under the Sacramento River and San Joaquin River. Due to the connectivity of hydrological systems, the geographic scope for cumulative analysis includes the San Francisco Bay Basin, Sacramento River Basin, and Solano Subbasin of the Sacramento Valley Groundwater Basin.
Land Use and Planning	1	The geographic scope for cumulative impacts on land use varies from more localized to county level. The geographic scope for this cumulative analysis is consistent with the 1-mile radius used to identify land use designations in Section 5.11 Land Use and Planning as the land use in the greater area surrounding the Proposed Project does not significantly vary in comparison to the land use within a 1-mile radius of the Proposed Project. Land in the immediate and greater area surrounding the Proposed Project components north of the Sacramento River is characterized by undeveloped land and existing wind development. The immediate and larger area surrounding PG&E's existing Pittsburg Substation is characterized by existing industrial, business, and residential developments.

Resource Type	Approximate Radius of Geographic Scope (miles)	Explanation
Mineral Resources	1	The proposed LSGPC 230 kV Submarine Segment would cross a sand and gravel mining operation in Suisun Bay. The geographic scope for cumulative impacts on mineral resources encompasses a 1-mile radius surrounding the Proposed Project due to the absence of other mines and mineral resource zones beyond a 1-mile radius.
Noise	1	The geographic scope for cumulative impacts on sensitive receptors is the Proposed Project and adjacent areas, as well as a 1-mile radius because noise attenuates with distance at an approximate rate of 6 decibels with every doubling of distance from the source of the noise.
Population and Housing	Not Applicable	Section 5.14 Population and Housing concluded that the Proposed Project would not impact population and housing at the project level; thus, an analysis of cumulative impacts on population and housing was not conducted.
Public Services	1	The geographic scope for cumulative impacts on public services includes a 1-mile radius around the Proposed Project due to the limited development north of the Sacramento River and the existing urban character of the area surrounding PG&E's existing Pittsburg Substation.
Recreation	1	The geographic scope for cumulative impacts on recreation includes areas within a 1-mile radius of the Proposed Project area. The radius encompasses portions of Suisun Marsh, Lower Sherman Island Wildlife Area, and multiple parks.
Transportation	< 1	The geographic scope for cumulative impacts on transportation encompasses the roads adjacent to the Proposed Project area. Many of the nearby roads provide access to wind farms. The main roads near the Proposed Project include State Route 12 (a major arterial road) and other roadways such as Shiloh Road, Talbert Laten, Stratton Lane, Collinsville Road, and Montezuma Hills Road.
Tribal Cultural Resources	1	The geographic scope for TCRs includes the area within a 1-mile radius of the Proposed Project, consistent with the radius of the record search described in 5.18 Tribal Cultural Resources.
Utilities and Service Systems	1	The geographic scope for cumulative impacts on utilities and service systems includes the areas served by the providers described in Section 5.19 Utilities and Service Systems within a 1-mile radius of the Proposed Project.
Wildfire	1	The geographic scope, on a broader scale, for cumulative impacts on wildfires includes Solano, Sacramento, and Contra Costa counties. On a finer scale, the Proposed Project and a surrounding 1-mile radius were assessed for potential cumulative impacts on evacuation routes.

the installation of lighting to comply with Federal Aviation Administration (FAA) requirements. The lighting installed on the Wind Turbine Generators (WTGs) will be higher and separated from existing sources of light surrounding the Solano 4 Wind Project (AECOM 2019).

As the Proposed Project lighting would be confined to the proposed LSPGC Collinsville Substation, the substation lighting would be unlikely to combine with the effects of the Solano 4 Wind Project lighting due to the height difference of the structures. Other projects described in Table 7-1: Planned and Proposed Project within 1 Mile would not be in the immediate vicinity of the proposed LSPGC Collinsville Substation and thus would not combine with the effects from the substation's lighting. Therefore, the Proposed Project would not contribute to a cumulative impact on light or glare.

As discussed in Section 5.1 Aesthetics, construction of the Proposed Project would have a less-than-significant impact on the visual character or quality of the surroundings. The construction of the Solano 4 Wind Project is not anticipated to overlap with construction of the Proposed Project. As the Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, Levee Repair Van Sickle Island project, and construction of the present and future projects within the City of Pittsburg would be spread out within a 1-mile radius surrounding the Proposed Project and construction activities would be unlikely to occur simultaneously for the entire construction period of the Proposed Project, the construction of the Proposed Project would have a less-than-significant contribution to cumulative impacts on the visual character or quality of the surroundings.

Once constructed, the Proposed Project would have a perceptible visual impact. The Proposed Project infrastructure would stand in contrast to the existing landscape and WTGs. The proposed LSPGC Collinsville Substation would clutter the existing view. However, the area surrounding the Proposed Project includes existing transmission infrastructure, wind turbines, and urban development. The mean height for existing WTGs is 396 feet in the Solano 4 Wind Project area, and hundreds of WTGs exist in the Solano Wind Resources Area (AECOM 2019).

As discussed in Section 5.1 Aesthetics, the existing visual character and quality of the site is presently degraded by the presence of WTGs, and thus the Proposed Project's contribution to further degradation of the landscape would be less than significant. The Proposed Project area within and adjacent to PG&E's existing Pittsburg Substation has existing transmission infrastructure, a non-operational power plant, residential developments, and industrial developments; and the Proposed Project would not result in a significant change to that landscape. Besides the Solano 4 Wind Project, the Proposed Project would be unlikely to combine with the visual effects of other present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile. The Levee Repair Van Sickle Island project would repair existing low-profile levees composed of dirt and gravel and thus would not change the visual character of the area (FEMA 2023). The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would not impact the surrounding visual character as the results of the dredging would not be visible above the surface of the water (URS Group Inc., 2015). Viewers would be unlikely to view the Bay Walk Mixed Use Project, AT&T Rooftop Wireless Facility, Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, Athens Painting, or Courtyard by Marriott Hotel and the Proposed Project simultaneously as the proposed LSPGC 230 kV

Underground Segment and Telecommunications Line would both be buried below ground and the LSPGC and PG&E Proposed Project components north of the Sacramento River would be more than 1 mile from the aforementioned projects. Therefore, the Proposed Project's incremental contribution to a cumulatively considerable impact on aesthetics would be less than significant.

7.1.3.2 Agriculture and Forestry Resources

As discussed in Section 5.2 Agriculture and Forestry Resources, the LSPGC and PG&E Proposed Project components would result in no impacts under all agriculture and forestry resource-related CEQA criteria during construction activities or O&M. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact on agriculture and forestry resources.

7.1.3.3 Air Quality

A cumulatively considerable impact could result if the Proposed Project would obstruct or conflict with the implementation of an applicable air quality plan, increase criteria air pollutants (CAPs), expose sensitive receptors to pollutant concentrations, or release other emissions that would adversely impact a substantial number of people. As presented in Section 5.3 Air Quality, the LSPGC and PG&E Proposed Project components would have a less-than-significant impact on air quality and no impact on air quality plans at the project level. Thus, cumulative impacts to air quality plans are not analyzed.

The nearest sensitive receptors are 18 residences along Collinsville Road, approximately 0.4 mile south of the proposed PG&E 12 kV Distribution Line and approximately 1 mile southwest of the proposed LSPGC Collinsville Substation. With respect to dust, all applicable construction and demolition projects within the Sacramento Metropolitan Air Quality Management District (SMAQMD) must comply with Rule 403 fugitive dust standards. Furthermore, Rule 6 of the Bay Area Air Quality Management District (BAAQMD) sets standards for dust suppression. Fugitive dust from construction of the Solano 4 Wind Project could violate applicable air quality standards. The Solano 4 Wind Project will implement a fugitive dust control plan to reduce fugitive dust emissions (AECOM 2019). While projects occurring adjacent to the Proposed Project could combine with the Proposed Project to create cumulatively greater dust, each project would independently comply with the allowable discharge rate and standards, and it is anticipated that other projects would implement mitigation measures if exceedance of standards would be likely. Therefore, potential cumulative impacts from dust would be less than significant.

Potential cumulative impacts from CAP emissions are also anticipated to be less than significant. Significance thresholds for CAPs are developed with respect to the fact that impacts from these pollutants are inherently cumulative. Therefore, projects with emissions below the established thresholds are understood to have less-than-significant project-level and cumulative impacts. Thus, cumulative impacts from CAP emissions would be less than significant for the Proposed Project because the Proposed Project's emissions are below the thresholds developed by the BAAQMD. Therefore, the Proposed Project's incremental contribution to cumulative air quality impacts would be less than significant.

7.1.3.4 Biological Resources

A significant cumulative impact on biological resources could result if the LSPGC and PG&E Proposed Project components would contribute to cumulative impacts related to sensitive habitat or species, sensitive habitat/natural communities, or wildlife movement corridors. At the project level, no impacts related to local policies, ordinances, and plans protecting biological resources were identified; therefore, the LSPGC and PG&E Proposed Project components would not contribute to cumulative impacts on local policies, ordinances, and plans protecting biological resources. Cumulative impacts on marshland and the Sacramento-San Joaquin River Delta (Delta) management plans are discussed in Section 7.1.3.11 Land Use. As discussed in Section 5.4 Biological Resources, project-level impacts were found to be less than significant due to the following:

- No observations of special-status species in the Proposed Project vicinity during the field survey;
- The small footprint of the LSPGC and PG&E Proposed Project components in relation to local and global ranges and populations of these species; and
- The human activity already occurring in the region.

LSPGC's applicant-proposed measure (APM) BIO-3 and PG&E's Construction Measure (CM) BIO-3 would require Workers Environmental Awareness Program (WEAP) training. LSPGC's APMs BIO-19 and BIO-23 would reduce potential impacts and would require in-water pile-driving mitigation measures and implementation of aquatic spill prevention control measures, respectively. It is anticipated that other projects would mitigate impacts to biological resources and comply with applicable federal, state, and local laws and regulations that protect biological resources. The Solano 4 Wind Project Draft Environmental Impact Report (DEIR), for instance, describes a number of wildlife avoidance measures and WEAP training (AECOM 2019). The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would implement mitigation measures to avoid entrainment of special-status fish species (URS Group, Inc. 2015). It is anticipated the Levee Repair Van Sickle Island project would also mitigate impacts to biological resources as Van Sickle Island, through the passing of the Suisun Marsh Preservation Act, was dedicated to preserving wetlands (Reclamation District No. 1607 2024). The Bay Walk Mixed Use Project, Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, AT&T Rooftop Wireless Facility, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, Athens Painting, and Courtyard by Marriott Hotel would be located in an urban area that is not suitable habitat. Therefore, the Proposed Project's contribution to cumulative biological resources impacts would be less than significant.

7.1.3.5 Cultural Resources

A significant cumulative impact on cultural resources could result if the LSPGC and PG&E Proposed Project components would contribute to cumulative direct or indirect impacts on significant historical or archaeological resources, and/or inadvertently discovered human remains. As discussed in Section 5.5 Cultural Resources, only one previously recorded resource, historic transmission lines within the proposed Area of Potential Impacts/Area of Potential Effect (API/APE), is recommended as eligible for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). Six new resources were recorded within the proposed API/APE that are not being recommended as eligible for listing in

the NRHP or CRHR. The Proposed Project would not result in direct or indirect effects to the NRHP-nominated resource that is adjacent to the proposed API/APE or to the transmission line that is recommended as eligible for the NRHP/CRHR. The cables of the proposed LSPGC 230 kV Submarine Segment would be located over 150 feet from the three potentially significant submerged resources located within the proposed API/APE. As a result, these resources would be avoided by the proposed LSPGC 230 kV Submarine Segment. Additionally, a submerged paleolandform was identified within the proposed API/APE; however, the probability is low for the presence of cultural material. No prehistoric or ethnohistoric archaeological resources or TCRs were located during the surveys.

While the possibility exists that subsurface resources or remains could be unearthed during construction, the Proposed Project includes LSPGC's APM CUL-3 and PG&E's CM CUL-3 to reduce impacts, and the APM and CM outline avoidance and investigation procedures in the instance of an inadvertent discovery. Prior to construction, the paleolandform identified within the proposed API/APE would be evaluated through coring and soil analysis, and, if analysis indicates the potential for cultural resources, a Paleolandform Monitoring Plan would be developed, approved by the CPUC, and implemented during submarine cable installation within 500 feet of the potential cultural resources in accordance with APM CUL-4. While present and future projects could also encounter subsurface resources or remains, the existing regulations and plans, as well as standard mitigation measures, would reduce potentially significant impacts to less-than-significant levels. In addition, impacts to cultural resources are site-specific, and as such are not expected to combine with the development of other projects to cumulatively increase the risk of impacting subsurface resources or remains. Potential impacts are evaluated on a case-by-case basis. Therefore, the Proposed Project's incremental contribution to cumulative cultural resources impacts would be less than significant.

7.1.3.6 Energy

As discussed in Section 5.6 Energy, the LSPGC and PG&E Proposed Project components would have no impact with respect to conflicts with state or local plans for renewable energy and with respect to adding capacity for the purpose of serving a non-renewable energy source. Therefore, the LSPGC and PG&E Proposed Project components would not contribute to a cumulatively significant impact for either of these criteria. With respect to adverse environmental impacts resulting from wasteful, inefficient, or unnecessary consumption of energy resources, the Proposed Project would have a less-than-significant impact at the project level because the construction and O&M would utilize a relatively small amount of energy and fossil fuels. The Proposed Project's usage of diesel fuel would represent less than 1 percent of the combined 2022 diesel fuel sales for Solano, Sacramento, and Contra Costa counties. The Proposed Project's usage of gasoline fuel would represent an even smaller fraction of the combined gasoline sales across the counties. The LSPGC and PG&E Proposed Project components would require fossil fuel for the operation of vehicles used in periodic maintenance and site checks and would constitute an even smaller percentage of total fuel usage in the state. Therefore, the Proposed Project's incremental contribution to energy impacts would not be cumulatively considerable, and the Proposed Project's impacts to cumulative energy resources would be less than significant.

7.1.3.7 Geology, Soils, and Paleontological Resources

A significant cumulative impact on geology and soils could result if the LSPGC and PG&E Proposed Project components would contribute to cumulative impacts related to exacerbating the potential of seismic activity, unstable soils, or lateral spreading. A significant cumulative impact on paleontological resources could result if the LSPGC and PG&E Proposed Project components contributed to cumulative impacts on significant resources, sites, or unique geologic features. At the project level, impacts to geology, soils, and paleontological resources were determined to be less than significant.

As discussed in Section 5.7 Geology, Soils, and Paleontological Resources, the proposed LSPGC 230 kV Submarine Segment, LSPGC 230 kV Underground Segment, and LSPGC Telecommunications Line would cross the Rio Vista fault; and the Proposed Project would be located within 10 miles of six other faults. The LSPGC and PG&E Proposed Project components would adhere to and implement all design recommendations and parameters established in the Proposed Project's Geotechnical Engineering Report (which would be submitted to the CPUC) to reduce the exposure of people or structures to seismic ground shaking. It is anticipated that present and future projects would also incorporate standard engineering practices and follow all relevant design requirements to minimize hazards from seismic shaking. Therefore, the Proposed Project's contribution to cumulative impacts related to the creation of seismic ground-shaking hazards would be less than significant.

The proposed LSPGC 230 kV Overhead Segment and PG&E 12 kV Distribution Line would cross areas of high liquefaction potential. The proposed LSPGC 230 kV Underground Segment would be in an area of very high liquefaction potential. The LSPGC and PG&E Proposed Project components would not be located within a landslide zone, and no records of landslides were found in the Proposed Project area. The LSPGC and PG&E Proposed Project components would implement all recommendations from Proposed Project-specific geotechnical investigation reports. Additionally, the LSPGC and PG&E Proposed Project components would be designed to be consistent with the design and engineering standards contained in CPUC General Order 95 and the California Building Code. At the Proposed Project level, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant as geotechnical report recommendations would be incorporated into the LSPGC and PG&E Proposed Project components' design. It is anticipated that the projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would adhere to design and engineering standards and implement recommendations from geotechnical investigations. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse.

Construction activities related to the LSPGC and PG&E Proposed Project components would include grading, which would cause erosion and the loss of topsoil. The LSPGC and PG&E Proposed Project components would implement a Storm Water Pollution Prevention Plan (SWPPP), which would include best management practices (BMPs) to minimize erosion and comply with state storm water regulations and the terms of ministerial grading permits from the Solano County to minimize soil erosion. Furthermore, LSPGC's APM GEO-1 would be implemented to minimize the loss of topsoil to the extent feasible. As the Proposed Project grading would take place north of the Sacramento River, the Bay Walk Mixed Use Project,

Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, AT&T Rooftop Wireless Facility, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, Athens Painting, or Courtyard by Marriott Hotel would not combine with the erosion or topsoil loss effects of the Proposed Project because these projects would be located south of the Sacramento River in the City of Pittsburg. The Levee Repair Van Sickle Island project would be unlikely to cause appreciable erosion as the topography of Van Sickle Island is flat. The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would occur in water and thus would not affect erosion or loss of topsoil. The Proposed Project could combine with potential impacts from the Solano 4 Wind Project; however, the Solano 4 Wind Project will implement a SWPPP and BMPs that include erosion control measures (AECOM 2019). Due to the projects' adherence to regulations and implementation of practices to reduce soil erosion and loss of topsoil, the Proposed Project would result in a less-than-significant cumulative impact on topsoil loss and erosion.

Portions of the proposed LSPGC 230 kV Overhead Segment and LSPGC Telecommunications Line would occur on soil that could potentially be considered expansive, but construction practices would bury structures below the shallow expansive soil to reduce substantial risk to life or property. It is anticipated that present and future projects would take similar measures to avoid locating structures on expansive soils. Therefore, the LSPGC and PG&E Proposed Project components would not significantly contribute to cumulative impacts related to expansive soils.

At the level of the Proposed Project, no septic tank or alternative wastewater disposal system would be used; thus, the LSPGC and PG&E Proposed Project components would not contribute to cumulative impacts related to the capacity of soil to adequately support the use of septic tanks or alternative wastewater disposal systems.

Encountering paleontological resources is unlikely; however, the existing regulations and plans, as well as standard mitigation measures, in place to protect paleontological resources would reduce potentially significant impacts to less-than-significant levels. It is anticipated that present and future projects would follow similar best practices and abide by existing regulations. For instance, Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay and the Solano 4 Wind Project will implement mitigation measures to avoid potential adverse effects on inadvertently discovered paleontological resources (URS Group 2015; AECOM 2019). Thus, the Proposed Project's contribution to cumulative impacts on paleontological resources would be less than significant.

Therefore, the Proposed Project's contribution to cumulative geology, soils, and paleontological resources impacts would be less than significant.

7.1.3.8 Greenhouse Gas Emissions

As discussed in Section 5.8 Greenhouse Gas Emissions, GHG emissions directly generated during construction and O&M would result in a less-than-significant impact on the environment and no impact on plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The BAAQMD does not establish numerical thresholds for construction-related GHG emissions. However, the LSPGC and PG&E Proposed Project components' operational emissions would be below the BAAQMD's emissions thresholds, and the LSPGC and PG&E Proposed Project components would be below the SMAQMD's threshold for construction GHG

emissions. The Proposed Project would not emit operational GHGs within the SMAQMD area. The LSPGC and PG&E Proposed Project components' emissions would constitute approximately 30 percent of the SMAQMD's threshold. The LSPGC and PG&E Proposed Project components would have a less-than-significant cumulative contribution to GHG emissions within the SMAQMD during construction as the threshold standard applies individually to each project and the LSPGC and PG&E Proposed Project components' construction emissions would be well below the significance threshold. Similarly, the BAAQMD significance threshold for stationary projects during O&M applies to individual projects. As the operational GHG emissions of the LSPGC and PG&E Proposed Project components would constitute approximately 3 percent of the BAAQMD's significance threshold for a project's emissions, the Proposed Project would have a less-than-significant contribution to cumulative operational GHG impacts within the BAAQMD. Thus, the Proposed Project would have a less-than-significant contribution to cumulative impacts on GHG emissions.

7.1.3.9 Hazards, Hazardous Materials, and Public Safety

A significant cumulative impact on hazards, hazardous materials, and public safety could result if the LSPGC and PG&E Proposed Project components were to contribute to impacts related to the release, transport, use, or disposal of hazardous materials, substances, or waste. Additionally, a significant cumulative impact could occur if the LSPGC and PG&E Proposed Project components were to contribute to impacts related to wildland fires, emergency services, unexploded ordnances, air traffic, helicopter use, or shock hazards. At the project level, no impacts related to hazardous material sites compiled pursuant to Section 65962.5 of the California Government Code or unexploded ordnances were identified; as such, cumulative impacts for these issues are not evaluated.

As discussed in Section 5.9 Hazards, Hazardous Materials, and Public Safety, the LSPGC and PG&E Proposed Project components would not result in any significant impacts. Other projects within the geographic scope, including the projects listed in Table 7-1: Planned and Proposed Project within 1 Mile, could involve hazards and hazardous materials similar to those identified for the Proposed Project; however, it is anticipated that these projects would be required to follow applicable regulations for characterization, handling, and disposal of any hazards or hazardous materials. Therefore, potentially cumulative impacts from routine use, handling, and disposal of hazardous materials would be less than significant. The likelihood of upset, emergency, or other abnormal conditions occurring on multiple projects simultaneously is very low.

The proposed LSPGC Telecommunications Line would be installed underground along Halsey Way, adjacent to the property of St. Peter Martyr School. Handling of hazardous or acutely hazardous materials is not anticipated during installation of the telecommunications line, and installation of the cable would be timed when school is out of session. The present and future projects identified in Table 7-1: Planned and Proposed Project within 1 Mile would not be located in the immediate vicinity of St. Peter Martyr School. Therefore, the Proposed Project would not contribute to a cumulatively significant impact on a school.

The LSPGC and PG&E Proposed Project components would have a less-than-significant impact on emergency service response times and the implementation of the Emergency Operation Plans and Hazard Mitigation Plans of Solano County, Sacramento County, or Contra Costa County.

Temporary road and lane closures would occur during installation of the proposed LSPGC Telecommunications Line, emergency service providers would be notified, and appropriate traffic control measures would be implemented to maintain emergency access at all times. All present and future projects would likewise be required to coordinate with local jurisdictions to ensure emergency access is maintained at all times. For instance, the Solano 4 Wind Project will implement an emergency access plan and notify emergency service providers of anticipated roadway obstructions (AECOM 2019). Due to coordination with emergency service providers and the lack of other planned road closures in the vicinity of the LSPGC and PG&E Proposed Project components, the Proposed Project would not have a cumulatively significant impact on emergency services or the implementation of emergency services plans.

Implementation of the Construction Fire Prevention Plan (CFPP) and the implementation of associated fire prevention BMPs discussed in Section 5.20 Wildfire would reduce the risk of the LSPGC and PG&E Proposed Project components exacerbating wildfire risk and exposing people and structures to wildland fire. During O&M, the LSPGC and PG&E Proposed Project components would be monitored remotely, and LSPGC and PG&E would continue to implement best practices to reduce fire risk during maintenance activities. As described in Section 7.1.3.20 Wildfire, it is likely that only wildfire risk from the Solano 4 Wind Project could combine with wildfire risk from the LSPGC and PG&E Proposed Project components. The Solano 4 Wind Project will implement a grass fire control plan and monitor the WTGs remotely for signs of mechanical failure (AECOM 2019). Therefore, the LSPGC and PG&E Proposed Project components would have a less-than-significant contribution to cumulative impacts to wildland fire.

At the project level, the LSPGC and PG&E Proposed Project components would have a less-than-significant impact on air traffic or the creation of a safety hazard within an airport land use plan area. The existing WTGs in the vicinity of the Proposed Project, as well as the proposed WTGs under construction as part of the Solar 4 Wind Project, are far taller than the LSPGC and PG&E Proposed Project components. Furthermore, the WTGs are anticipated to be significantly taller than the project components of the other present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile. The FAA conducted an aeronautical study of the Solano 4 Wind Project components and found that the structures will have no substantial adverse effect on the safe use of airspace or the operation of air navigation facilities (AECOM 2019). Therefore, the LSPGC and PG&E Proposed Project components would not contribute to a cumulatively considerable impact on air traffic.

The present and future projects presented in Table 7-1: Planned and Proposed Project within 1 Mile do not describe details of planned helicopter use. As part of the Proposed Project, and in coordination with and to be approved by the FAA Flight Standards District Office, LSPGC would develop and implement a Helicopter Use and Safety Plan in accordance with Title 14, Parts 77 and 133 of the Code of Federal Regulations. It is anticipated that present and future projects would adhere to FAA standards and coordination requirements. Therefore, the Proposed Project's cumulative impact on the creation of hazards through use of helicopters would be less significant.

Therefore, the Proposed Project would have a less-than-significant cumulative impact on hazards, hazardous materials, and public safety.

7.1.3.10 Hydrology and Water Quality

A significant cumulative impact on hydrology and water quality could result if the LSPGC and PG&E Proposed Project components contributed to impacts related to water quality, depletion of groundwater supplies, interference with groundwater recharge, implementation of water management plans, or alterations to drainage patterns. At the project level, no impacts were identified that related to conflict with the implementation of a water quality control plan or sustainable groundwater management plan; as such, cumulative impacts for this issue are not evaluated.

As shown in Section 5.10 Hydrology and Water Quality, the LSPGC and PG&E Proposed Project components would not violate any water quality standards or waste discharge requirements, and no substantial changes to the existing drainage pattern would occur. Multiple present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would involve at least 1 acre of soil disturbance; therefore, a SWPPP would be prepared by each project as required by the state National Pollutant Discharge Elimination System General Permit for Discharges of Stormwater Associated with Construction Activity. These projects would also be subject to regulations that require compliance with water quality standards, including state and local water quality regulations. Compliance with existing laws, ordinances, regulations, and standards in place for the protection of water quality are designed to address potential effects at a regional level and, therefore, are designed and intended to mitigate potential adverse effects resulting from multiple discrete projects or locations (i.e., cumulative impacts). Furthermore, the LSPGC and PG&E Proposed Project components would result in a limited impervious footprint, and the majority of impervious surfaces would be confined to the Proposed Project area north of the Sacramento River. Other than the Solano 4 Wind Project, the majority of the other projects described in Table 7-1: Planned and Proposed Project within 1 Mile would be located south of the Sacramento River in the City of Pittsburg, and only a small portion of the Solano 4 Wind Project site will be occupied by concrete pads and compacted materials (AECOM 2019). Therefore, the LSPGC and PG&E Proposed Project components would not contribute to a cumulatively considerable impact on the rate or amount of surface runoff that could result in flooding or the impediment or redirection of flood flows.

The proposed LSPGC 230 kV Overhead Segment and LSPGC Telecommunications Line would be partially located within a flood hazard zone. A cumulatively considerable impact could occur if the Proposed Project and other projects released pollutants due to inundation. The chance of release of pollutants during the event of inundation of the LSPGC 230 kV Overhead Segment would be low. Modern cables are engineered to withstand flooding and do not contain hazardous materials; therefore, the release of pollutants due to inundation of the proposed LSPGC Telecommunications Line would be low. The nearby Solano 4 Wind Project will not house hazardous materials, and only access roads and power lines will be constructed in flood hazard areas. Therefore, the inundation of the Solano 4 Wind Project would not release pollutants (AECOM 2019). Other present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would either not occur in a flood hazard zone or would be unlikely to house hazardous materials. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact on the release of pollutants due to inundation.

Water required for construction of the LSPGC and PG&E Proposed Project components would be pumped from a nearby well that has sufficient supplies to meet the demand of the Proposed Project, purchased from private sources, and/or trucked on site from local water districts. The amount of water required for the LSPGC and PG&E Proposed Project components would represent approximately 0.08 percent of the approximately 23,000 acre-feet of groundwater pumped from the Solano Subbasin for agricultural purposes. Even in a scenario where the present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would be supplied primarily by groundwater, the water use of the LSPGC and PG&E Proposed Project components' impacts, combined with the impacts of the present and future projects, would have a less-than-significant cumulative impact on groundwater supplies due to the existing amount of groundwater pumping from the Solano Subbasin for agricultural use alone. The LSPGC and PG&E Proposed Project components would not have an appreciable effect on the groundwater recharge as the proposed LSPGC Collinsville Substation drainage system and bioretention basin would facilitate the return of water to the groundwater basin, and the footprints of the transmission structures would be relatively small.

Therefore, the Proposed Project's incremental contribution to cumulative hydrology and water quality impacts would be less than significant.

7.1.3.11 Land Use and Planning

A cumulatively significant impact could result if the LSPGC and PG&E Proposed Project components contributed to the division of an established community or caused a significant environmental impact due to a conflict with a land use plan, policy, or regulation. As discussed in Section 5.11 Land Use and Planning, the LSPGC and PG&E Proposed Project components would have no impact on an established community. Thus, it would not contribute to a cumulatively significant impact related to the division of an established community. The Proposed Project would be potentially inconsistent with the San Francisco Bay Conservation and Development Commission's (BCDC's) Suisun Marsh Protection Plan and the Delta Stewardship Council's (DSC's) Delta Plan. However, BCDC and California Department of Fish and Wildlife would be consulted prior to construction of the LSPGC and PG&E Proposed Project components to ensure consistency with the plans. The Solano 4 Wind Project DEIR and Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay Environmental Impact Assessment/Environmental Impact Report (EIA/EIR) did not identify a conflict with the Suisun Marsh Protection Plan or Delta Plan (AECOM 2019; URS Group Inc. 2015). It is anticipated that the Levee Repair Van Sickle Island project would be consistent with the Suisun Marsh Protection Plan and Delta Plan, which identify the improvement of levee systems as an objective (BCDC 1976; Delta Plan 2019). The other projects described in Table 7-1: Planned and Proposed Project within 1 Mile would be located outside of the boundary of Suisun Marsh, and thus would not come into conflict with the Suisun Marsh Protection Plan. Therefore, the present and future projects identified in Table 7-1: Planned and Proposed Project within 1 Mile would be unlikely to individually create a conflict with the Suisun Marsh Protection Plan. All present and future projects described in Table 7-1: Planned and Proposed Project within 1 Mile would occur within the legal boundaries of the Delta. However, it is anticipated that these project proponents would consult the appropriate agencies and file the necessary documentation to ensure consistency with the Delta Plan. Therefore, the Proposed Project's incremental contribution to potential cumulative impacts on a land use plan would be less than significant.

7.1.3.12 Minerals

As discussed in Section 5.12 Mineral Resources, the LSPGC and PG&E Proposed Project components would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The Proposed Project would have a less-than-significant impact on a known mineral source that would be of value to the region and the residents of the state. The proposed LSPGC 230 kV Submarine Segment would cross Lind Marine's sand and gravel dredging operation. As a result, construction may temporarily interfere with the dredging operation while the submarine cables would be installed. To reduce the potential impacts associated with construction, LSPGC has designed the submarine cable to minimize the crossing length within the mine and would be required to obtain a lease agreement and a lease encumbrance permit/agreement from the California State Lands Commission (CSLC) for encumbering on the existing mining lease. Through these permit processes, additional avoidance and minimization measures may be identified to further reduce the potential impacts. As a result, the planned construction activities would be coordinated with the CSLC and the current mining lease owner, and the loss of availability of sand and gravel would be less than significant. The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay EIA/EIR concluded that the dredging would not result in adverse impact on minerals (URS Group, Inc. 2015). No other present or future projects are anticipated to conflict with mineral resources. Therefore, the Proposed Project would not contribute to a cumulative impact on mineral resources.

7.1.3.13 Noise

A significant cumulative impact on noise and vibration would result if the LSPGC and PG&E Proposed Project components were to contribute to impacts related to exceedances of noise standards or groundborne vibration when evaluated within the context of present and future projects. At the project level, no impacts related to private air strips or airport land use plans were identified; as such, cumulative impacts for these issues are not evaluated.

For the LSPGC and PG&E Proposed Project components, both construction and operational noise and vibration levels were analyzed in Section 5.13 Noise. Construction of the Proposed Project would temporarily increase noise levels in the area. The increases would be temporary, intermittent, and occur only during daylight hours. Furthermore, noise from construction activities in Sacramento County and Contra Costa County is exempt from applicable standards during daytime hours. The LSPGC and PG&E Proposed Project components would comply with the noise standards for construction outlined in Solano County's noise ordinance. In addition, construction and operations-related vibration was determined to not be noticeable to the nearest sensitive receptor.

During O&M, noise from the LSPGC and PG&E Proposed Project components would not exceed Solano, Sacramento, and Contra Costa counties' noise standards. Noise increases from operation of the proposed LSPGC Collinsville Substation above existing ambient levels at the nearest receptor would not be perceptible to the average human ear. Noise from the proposed LSPGC 230 kV Overhead Segment and PG&E 500 kV Interconnection would not be audible at the nearest sensitive receptors. Therefore, at the project level, impacts to sensitive receptors would be less than significant. The remaining LSPGC and PG&E Proposed Project components would not generate noise during operation.

Overlap of construction with the projects listed in Table 7-1: Planned and Proposed Project within 1 Mile could further increase noise levels in the surrounding area. Sacramento and Contra Costa counties' standards exempt construction noise, provided that construction activities occur within the allowable days and times. Therefore, the cumulative construction noise levels would not exceed applicable noise standards. Few projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would occur in Solano County. The Solano 4 Wind Project is currently under construction, and the Levee Repair Van Sickle Island project is proposed in Solano County. However, the LSPGC and PG&E Proposed Project components would be distributed across a large area, which, given the attenuative nature of noise, results in low levels of noise where the boundary of other projects begin. This would be true of the other projects located within the geographic scope for noise impacts. Therefore, the Proposed Project's incremental contribution to potential cumulative noise impacts would be less than significant.

7.1.3.14 Population and Housing

As discussed in Section 5.14 Population and Housing, the LSPGC and PG&E Proposed Project components would result in no impacts under all population and housing-related CEQA criteria during construction activities or O&M because the LSPGC and PG&E Proposed Project components would not induce substantial population growth or displace residents or housing. Construction activities would be temporary, and the workforce would be relatively small; therefore, no permanent or long-term population growth in the local area would occur due to Proposed Project construction. As discussed in Section 7.2 Growth-Inducing Impacts, predicting the indirect or direct effects of increased transmission reliability and capability on population growth would be speculative. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact on population and housing.

7.1.3.15 Public Services

Cumulative impacts on public services (e.g., fire and police protection) could result when present and future projects combine to increase demand on public services facilities such that additional facilities must be constructed to maintain acceptable levels of service, and the construction of such facilities would result in a physical impact on the environment. As discussed in Section 5.15 Public Services, the LSPGC and PG&E Proposed Project components would result in no impacts to fire and police protection services during construction activities or O&M. Fire, emergency, and police services currently serve and would continue to serve the areas in and around the LSPGC and PG&E Proposed Project components, and they would not affect response times of fire, emergency services, or police protection. The construction and O&M of the LSPGC and PG&E Proposed Project components would result in a less-than-significant impact on schools, parks, and other public facilities. Temporary restrictions and closures in the Delta and Suisun Marsh during construction would be localized and would not restrict overall water-oriented recreational use. Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would maintain sufficient room for recreational vessels to maneuver around dredge equipment in most locations, and the EIA/EIR concluded that the impacts are expected to be negligible (URS Group, Inc. 2015). The proposed LSPGC Telecommunications Line would be installed underground along Halsey Way adjacent to St. Peter Martyr School. A segment of the proposed LSPGC Telecommunications Line would cross the Marina Community Center property. Installation of the cable would be timed when school is out of session and access to the Marina Community Center would be maintained during construction. The present and future

projects identified in Table 7-1: Planned and Proposed Project within 1 Mile would not be located in the immediate vicinity of St. Peter Martyr School or Marina Community Center. It is anticipated that the proponents of the present and future projects would take the necessary steps to mitigate impacts on access to public facilities. Furthermore, the LSPGC and PG&E Proposed Project components would not require the expansion of public facilities, such as parks, hospitals, or libraries. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact on public services.

7.1.3.16 Recreation

Cumulative impacts on recreation could occur if present and future projects would accelerate the deterioration of parks, construct or expand recreational facilities, reduce or prevent access to recreational areas, reduce the value of recreational areas, or cause damages to recreational trails or facilities. At the project level, the LSPGC and PG&E Proposed Project components would have a less-than-significant impact on the reduction or prevention of access to a designated recreation facility or area and no impact on all other recreation-related CEQA criteria during construction and O&M.

Construction of the proposed in-river transition structure would temporarily reduce access in the Delta waterways. Construction would temporarily reduce access to approximately 2 acres of the Delta for approximately 7 months. The transition structure's footprint would be approximately 5,200 square feet, and thus O&M of the proposed LSPGC Submarine Segment would prevent access to approximately 5,200 square feet of the Delta for recreation. Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay may potentially delay or temporarily impede watercraft during dredging activities. However, in most dredging locations, there would be sufficient room for recreational vessels to maneuver around dredging equipment, and thus impacts would be negligible (URS Group, Inc. 2015). It is anticipated that during construction, the Central Harbor Park and Boat Launch Area Upgrades would temporarily reduce access to the boat launch, which is an access point for recreational uses in the Delta waters; however, there are numerous access points to the waters of the Delta, and thus the project's impact would not be significant. The Solano 4 Wind Project DEIR concluded that the project would have no impact on recreation (AECOM 2019). Additionally, no other projects listed in Table 7-1: Planned and Proposed Project within 1 Mile are anticipated to temporarily or permanently impact access to or recreation in the Delta waters due to their locations.

The impacts of the LSPGC and PG&E Proposed Project components could combine with the temporary impacts of the Central Harbor Park and Boat Launch Area Upgrades and the potential temporary impacts from the Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay to create cumulatively considerable impacts on access to recreation in the Delta. However, the cumulative impacts would be less than significant as the impacts to recreational access from the maintenance dredging project and the boat launch upgrades would be temporary and limited in scope.

7.1.3.17 Transportation

Cumulative impacts to transportation have the potential to occur if multiple projects have a combined impact on transportation plans, hazards, emergency access, or public transit. At the project level, the LSPGC and PG&E Proposed Project components would have no impact on

walking or bicycle accessibility or delay of public transit. Therefore, cumulative impacts on walking and bicycle accessibility and public transit delays are not analyzed.

All projects would be required to implement similar traffic control measures required by Solano, Sacramento, and Contra Costa counties, and construction zones must provide emergency vehicle access to and, if applicable, through the construction zone at all times. Thus, there would be no adverse effects on emergency access at a particular site. In addition, construction traffic for the LSPGC and PG&E Proposed Project components would be temporary and would not permanently affect transportation issues such that a conflict with a program, plan, or other regulations would occur.

The LSPGC and PG&E Proposed Project components would be operated remotely; therefore, operation of the Proposed Project would not contribute to cumulatively considerable impacts on transportation. Quarterly inspections of the proposed LSPGC Collinsville Substation would be conducted. A small, specialized team would perform more extensive maintenance activities. Routine maintenance of the proposed LSPGC 230 kV Overhead Segment and LSPGC 230 kV Underground Segment would require approximately one trip per year by crews of one to four people. The proposed LSPGC 230 kV Submarine Segment would not require planned maintenance. PG&E's maintenance activities would continue as they currently do in the area and would not change. Furthermore, it is unlikely that the Proposed Project maintenance trips would coincide with maintenance for the projects described in Table 7-1: Planned and Proposed Project within 1 Mile. Additionally, the Bay Walk Mixed Use Project, Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, AT&T Rooftop Wireless Facility, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, Athens Painting, and Courtyard by Marriott Hotel would be located in existing developed areas. Projects such as the Courtyard by Marriott Hotel could increase traffic. However, due to the infrequency of LSPGC and PG&E Proposed Project component maintenance, the Proposed Project would not result in a significant cumulative impact on traffic or impede road access or safety. Van Sickle Island is separated from the Proposed Project area by Montezuma Slough, and it is anticipated that ongoing maintenance of the Levee Repair Van Sickle Island project would use different overland access routes, if any, from that of the Proposed Project. Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would be largely confined to in-water activities. Therefore, maintenance of the Proposed Project's incremental contribution to cumulative transportation impacts would not be cumulatively considerable and would be less than significant.

Therefore, the Proposed Project would have a less-than-significant cumulative impact on transportation.

7.1.3.18 Tribal Resources

A cumulatively considerable impact on TCRs could result if the LSPGC and PG&E Proposed Project components contributed to a substantial adverse change in the significance of a TCR. The CPUC would consult with eligible tribes under California Public Resources Code Section 21080.3.1 once LSPGC's Certificate of Public Convenience and Necessity application is complete. Under Assembly Bill 52, the CPUC must identify these resources during consultation. As described in Section 5.18 Tribal Cultural Resources, no recorded TCRs have been identified thus far within 1 mile of the LSPGC and PG&E Proposed Project components' disturbance area. Impacts would be avoided to previously unidentified TCRs encountered during construction to

the greatest extent possible through implementation of LSPGC's APMs CUL-1 and CUL-3 and PG&E's CMs CUL-1 and CUL-3. These LSPGC APMs and PG&E CMs would reduce impacts to less-than-significant levels if previously unidentified TCRs are encountered during construction by implementing WEAP training and establishing procedures for avoiding impacts in the event of an inadvertent discovery.

The cumulative projects identified in Table 7-1: Planned and Proposed Project within 1 Mile have the potential to uncover TCRs during ground-disturbing activities. However, all projects are required to comply with state regulations that protect TCRs. In addition, impacts to TCRs are site-specific, and are not expected to combine with the development of other projects to increase the risk of impacting TCRs. As the CPUC has not yet consulted eligible tribes, no determination regarding cumulative impacts to TCRs can be made at this time.

7.1.3.19 Utilities and Service Systems

Cumulative impacts to utilities or service systems have the potential to occur within the utility service areas if multiple projects have a combined impact on local utility services or infrastructure. At the project level, impacts to water supplies, wastewater treatment, solid waste, and corrosion would be less than significant; and the LSPGC and PG&E Proposed Project components would have no impact on compliance with federal, state, and local solid waste regulations.

The LSPGC and PG&E Proposed Project components and cumulative projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would require water and would generate wastewater and storm water during construction and O&M. As discussed in Section 5.19 Utilities and Service Systems, the LSPGC and PG&E Proposed Project components would require approximately 18 acre-feet (6 million gallons) of water for construction purposes. O&M of the LSPGC and PG&E Proposed Project components would require a fraction of the water used in construction and would not impact water supplies. The Solano 4 Wind Project requires approximately 55.3 acre-feet (18 million gallons) of water for construction, and O&M will require up to 4.5 acre-feet per year (AECOM 2019). Water use of the LSPGC and PG&E Proposed Project components would constitute a fraction of the water used to supply the Solano 4 Wind Project, and thus the Proposed Project would contribute to a less-than-significant cumulative impact on water use. The Proposed Project would use portable toilets during construction, and wastewater would be disposed of at a licensed facility. The Solano 4 Wind Project will not include development that would require wastewater treatment by a municipal service provider or construction of new storm water drainage facilities (AECOM 2019).

It is anticipated that the projects listed in Table 7-1: Planned and Proposed Project within 1 Mile (e.g., Levee Repair Van Sickle Island, Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, AT&T Rooftop Wireless Facility, and Athens Painting) would not require the relocation of new or expanded wastewater facilities as the nature of the projects entail remodeling existing structures, repairs, and dredging. The Bay Walk Mixed Use Project, Harbor View Project, East Street Estates, and Liberty Subdivision Phase II would introduce new housing units, and the Courtyard by Marriott Hotel would introduce new hotel rooms to the City of Pittsburg. These projects are currently undergoing or will undergo environmental review and permitting to ensure their needs can be met. As the construction of the LSPGC and PG&E

Proposed Project components would generate minimal wastewater and would not require the relocation or expansion of wastewater facilities, construction of the LSPGC and PG&E Proposed Project components would not contribute to a cumulatively significant impact on wastewater. Additionally, the LSPGC and PG&E Proposed Project components would have no impact on wastewater during O&M, and, therefore, the Proposed Project would not have a cumulatively considerable impact on wastewater facilities.

A bioretention basin would be constructed for the proposed LSPGC Collinsville Substation, and it is also anticipated that storm water runoff would leave the Proposed Project site and percolate into the surrounding soils. The LSPGC and PG&E Proposed Project components would implement BMPs outlined in the SWPPP and it is anticipated that the other planned and future projects would follow similar BMPs described in SWPPPs due to the footprints of the projects. Therefore, the Proposed Project would not have a cumulatively considerable impact on storm water utilities or systems during construction or O&M.

Electric power use during construction of the LSPGC and PG&E Proposed Project components and cumulative projects would not represent a substantial increase in existing usage and would be temporary. Operational electrical power requirements of the proposed LSPGC Collinsville Substation and cumulative projects would be served via existing local distribution lines. Further, the LSPGC and PG&E Proposed Project components and cumulative projects have been accounted for in grid forecasts and planning by the California Independent System Operator. Therefore, the Proposed Project would not have a cumulatively considerable impact on electrical utilities.

Based on the anticipated landfill capacity described in Section 5.19 Utilities and Service Systems, the Potrero Hills Landfill, Recology Hay Road Landfill, and Mt. Diablo Recycling Center would have sufficient capacity and availability to handle the disposal of waste generated by the LSPGC and PG&E Proposed Project components during construction. The present and future projects listed in Table 7-1: Planned and Proposed Project within 1 Mile would be required to comply with all applicable federal, state, and local laws regarding solid and hazardous waste. Thus, the total volume of waste that would be landfilled under the cumulative scenario is not expected to exceed the permitted capacity of available landfills. Therefore, the Proposed Project would not have a cumulatively considerable impact on waste disposal systems.

The Proposed Project's incremental contribution to cumulative utilities and service systems impacts would not be cumulatively considerable and would be less than significant.

7.1.3.20 Wildfire

Cumulative impacts on wildfires have the potential to occur if multiple projects have a combined impact on emergency response or evacuation plans, exposure of project occupants to wildfire or wildfire-caused pollutants, exacerbation of fire risk, or post-fire flooding risks.

As discussed in Section 5.20 Wildfire, construction and O&M of the LSPGC and PG&E Proposed Project components would have a less-than-significant impact on the implementation of the Solano County, Sacramento County, and Contra Costa County Emergency Operation Plans. Temporary road and lane closures may occur during construction of the LSPGC and PG&E Proposed Project components, and LSPGC would coordinate with emergency service

providers and implement the appropriate traffic control measures to maintain emergency access at all times.

The LSPGC and PG&E Proposed Project components would not be located within a State Responsibility Area (SRA) or High Fire Threat District. Implementation of the CFPP and associated fire prevention BMPs discussed in Section 5.20 Wildfire would further reduce the risk of the Proposed Project exacerbating wildfires. The Bay Walk Mixed Use Project, Central Harbor Park and Boat Launch Area Upgrades, East Bay Auto Sales, AT&T Rooftop Wireless Facility, Harbor View Project, East Street Estates, Liberty Subdivision Phase II, Athens Painting, and Courtyard by Marriott Hotel described in Table 7-1: Planned and Proposed Project within 1 Mile pose no to minimal wildfire risks during construction or O&M as they are in an urban area with minimal wildfire fuels. The Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay would be in water and would not pose a wildfire risk. The Levee Repair Van Sickle Island project would be located on Van Sickle Island, which is separated from the Proposed Project area by Montezuma Slough; thus, a low probability of wildfire risk during construction or O&M of the Levee Repair Van Sickle Island project exists when combining it with the Proposed Project's wildfire risk. The Solano 4 Wind Project is located in a grassland area and will implement a grass fire control plan (AECOM 2019).

During O&M, the LSPGC and PG&E Proposed Project components would be monitored remotely, and LSPGC and PG&E would continue to implement best practices to reduce fire risk during maintenance activities. The Solano 4 Wind Project will also be monitored remotely, and action will be taken to avoid overheating of WTGs that can cause potential mechanical failure and pose a risk of igniting a wildfire (AECOM 2019). Thus, the Proposed Project's contribution to cumulative impacts on wildfire risk would be less than significant.

The LSPGC and PG&E Proposed Project components would have a less-than-significant impact on the exposure of people or structures to post-fire downslope or downstream flooding or landslides. A SWPPP would be implemented to reduce erosion and ensure site stabilization. The proposed LSPGC Collinsville Substation would be graded to allow storm water runoff to leave the site and percolate into the surrounding soils. The transmission infrastructure of the LSPGC and PG&E Proposed Project components would have a small ground footprint and would not significantly alter the ability of storm water to percolate into the soil. As previously discussed, of the present and future projects described in Table 7-1: Planned and Proposed Project within 1 Mile, only the Solano 4 Wind Project would have the potential to combine with wildfire-related effects from the LSPGC and PG&E Proposed Project components. The Solano 4 Wind Project DEIR identified that the project area has a risk of shallow landslides, and a project SWPPP will be implemented to minimize erosion and off-site storm water runoff (AECOM 2019). The area surrounding the Solano 4 Wind Project and the LSPGC and PG&E Proposed Project components north of the Sacramento River is largely uninhabited, and thus there would be minimal risk of people or structures being exposed to cumulative impacts related to post-fire downslope or downstream flooding or landslides. As a result, the Proposed Project would have a less-than-significant contribution to cumulative impacts related to risks to people or structures from post-fire flooding or landslides.

The Proposed Project's incremental contribution to cumulative wildfire impacts would be less than significant.

7.2 GROWTH-INDUCING IMPACTS

As outlined in the CPUC's 2019 Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments, the Growth-Inducing Impacts section evaluates potential impacts on economic and population growth in the surrounding environment, including impacts on community service facility, obstacles to population growth, and the facilitation of other activities that may cause population growth.

Peak construction worker employment is expected to be approximately 160 workers, but the average workforce on site is anticipated to be less. The temporary labor demands of the LSPGC and PG&E Proposed Project components would be met by existing employees, by hiring specialty construction and electrical contractors who already reside in the surrounding areas, or by hiring specialty construction and electrical contractors from outside the local area who may temporarily reside in the vicinity of the LSPGC and PG&E Proposed Project components while completing their roles in the construction process. A substantial number of workers can be sourced from the Proposed Project vicinity and would likely commute from Solano, Sacramento, and Contra Costa counties. The proposed LSPGC Collinsville Substation would be operated and monitored remotely, and there would be no permanent employees on site. The number of workers visiting the area during construction and O&M would not significantly contribute to population growth or significantly tax community service facilities.

As mentioned previously, the Proposed Project will provide a number of benefits to the electrical system, including ensuring the reliability of a major portion of the CAISO-controlled grid; providing cost-effective electric transmission grid benefits; supporting the provision of safe, reliable, and adequate electricity service to the PG&E service territory; and facilitating the importation and use of renewable electricity to fulfill California's energy polices and goals by ensuring reliable operation of the grid. Increased transmission reliability resulting from the Proposed Project could remove a potential obstacle to population growth (i.e., lack of reliable electric transmission) and contribute to secondary effects of growth. However, transmission system reliability had not been identified as an obstacle to growth in these Counties, and it would be speculative to attempt to predict the extent to which population growth would be influenced by increased transmission reliability. The Proposed Project could enable new renewable energy projects through improving transmission reliability. However, predicting the extent of any increase in renewable projects or activities due to the construction of the Proposed Project would be speculative. As such, it is expected that any growth induced by the Proposed Project would be minor to negligible and the Proposed Project would not be considered growth inducing.

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James Schuchard	Project Engineer
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Anne Marie McGraw	Project Director, Author, Reviewer 4 – Description of Alternatives 5.20 Wildfire
Robert Curley	Project Manager, Author, Reviewer 3 – Project Description 5.3 Air Quality 5.8 Greenhouse Gas Emissions 6 – Comparison of Alternatives
Connor Szeto	Author 5.1 Aesthetics 5.5 Cultural Resources 5.10 Hydrology and Water Quality 5.12 Mineral Resources 5.13 Noise 5.17 Transportation 5.18 Tribal Cultural Resources
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Matthew Winter	Project Coordinator, Author 1 – Executive Summary 2 – Introduction 5 – Environmental Impact Assessment 5.2 Agriculture and Forestry Resources 5.6 Energy 5.7 Geology, Soils, and Paleontological Resources 5.11 Land Use and Planning 5.16 Recreation 5.21 Mandatory Findings of Significance
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Team Member	Project Role/Sections Prepared
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Chris Lautenberger	Wildfire Behavior Modeling Report
WRA	
Nick Brinton-McBean	Biological Resources Technical Report - Fisheries
Justin Semion	Biological Resources Technical Report - Fisheries

CHAPTER 9 – REFERENCES

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